OFFICIAL REPORT
AITHISG OIFIGEIL

Environment, Climate Change and Land Reform Committee

Tuesday 24 January 2017

Session 5

The Scottish Parliament
Pàrlamaid na h-Alba

Tuesday 24 January 2017

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ENVIRONMENT, CLIMATE CHANGE AND LAND REFORM COMMITTEE
3rd Meeting 2017, Session 5

CONVENER

*Graeme Dey (Angus South) (SNP)

DEPUTY CONVENER

*Maurice Golden (West Scotland) (Con)

COMMITTEE MEMBERS

*Claudia Beamish (South Scotland) (Lab)
*Alexander Burnett (Aberdeenshire West) (Con)
*Finlay Carson (Galloway and West Dumfries) (Con)
*Kate Forbes (Skye, Lochaber and Badenoch) (SNP)
*Jenny Gilruth (Mid Fife and Glenrothes) (SNP)
*Emma Harper (South Scotland) (SNP)
*Angus MacDonald (Falkirk East) (SNP)
*Mark Ruskell (Mid Scotland and Fife) (Green)
*David Stewart (Highlands and Islands) (Lab)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Andrew Bachell (Scottish Natural Heritage)
Donald Fraser (Scottish Natural Heritage)
John Ireland (Scottish Government)
Colin MacBean (Scottish Government)
Claudia Rowse (Scottish Natural Heritage)
Chris Stark (Scottish Government)
Des Thompson (Scottish Natural Heritage)

CLERK TO THE COMMITTEE

Lynn Tullis

LOCATION

Committee Room 1

Scottish Parliament

Environment, Climate Change and Land Reform Committee

Tuesday 24 January 2017

[The Convener opened the meeting at 09:47]

Decision on Taking Business in Private

The Convener (Graeme Dey): Good morning, and welcome to the third meeting in 2017 of the Environment, Climate Change and Land Reform Committee. I remind everyone present to ensure that their mobile phones are on silent for the duration of the meeting.

Agenda item 1 is to decide whether to take items 4 and 5 in private. Do members agree to do so?

Members *indicated agreement.*

"Draft Climate Change Plan: The draft third report on policies and proposals 2017-2032"

09:47

The Convener: Agenda item 2 is to take evidence on the Scottish Government's "Draft Climate Change Plan: The draft third report on policies and proposals 2017-2032", or RPP3. The draft plan was laid before Parliament on 20 January 2017 and Parliament has 60 days to consider it. The committee will carry out its scrutiny in collaboration with the Economy, Jobs and Fair Work Committee, the Rural Economy and Connectivity Committee and the Local Government and Communities Committee. Last week, the committees launched a joint call for written evidence, so I encourage as many people as possible to send us their views.

The committee has a full schedule of meetings at which it will hear oral evidence. On 31 January, we will be joined by stakeholders to discuss the overview of the plan and climate change governance. On 7 February, we will take evidence from two panels of stakeholders on issues that relate to specific sections of the plan—resource use, the water industry, the public sector, peatland and land use—that are within the committee's remit. On 21 February, we will take evidence from the Cabinet Secretary for Environment, Climate Change and Land Reform.

We begin today with the first of our oral evidence sessions. We have been joined by a number of Scottish Government officials who are leading or have led on the development of RPP3. Chris Stark is director of energy and climate change, John Ireland is deputy director of decarbonisation, Colin MacBean is head of energy and climate change analysis, and Morag Williamson is team leader of the climate change plan project team. Good morning to you all.

As we have rather a lot of ground to cover, we will crack on. First, I will ask a question just for clarification. The foreword to the document by the Cabinet Secretary for Environment, Climate Change and Land Reform says:

> "Each sector's carbon needs are now interlinked in the modelling. If one sector over or under-performs against our expectations, we can now model the knock-on impact on emissions savings required from the other sectors of the economy in the future."

I am a little bit concerned about the message that that sends. One interpretation is that if we were to perform far better than expected in one sector, we might throttle back on another as we move forward. I hope that it is just a clumsy use of words, but it is worth clarifying that the targets that

are being set, however challenging, are ones that we seek not only to reach but to surpass, sector by sector. Can I get clarification on that, please?

John Ireland (Scottish Government): There is a distinction to be made. One way of looking at it is to think about the point that the cabinet secretary made previously to the committee about sectoral targets and the carbon budgets in the plan. It is very much the Government's position that we already work within sectoral envelopes—the plan contains very specific envelopes—and that there is great advantage in maintaining those envelopes instead of having sectoral targets, because such targets reduce flexibility. That said, I do not think that there is any sense that we are choking back; it is just that we are taking a sectoral envelope approach rather than a sectoral target approach.

The Convener: I want more clarity about this. If, say, the transport sector was doing particularly well, would that—or would it not—create a situation in which agriculture, for example, was lagging behind, the view might be taken that, overall, we were still on course in that particular year?

John Ireland: That would depend on the point at which that was happening. The Climate Change (Scotland) Act 2009 requires that a new plan be derived with the setting of the annual targets every five years or so. In each of the plans—RPP1, RPP2 and the current climate change plan RPP3—we have taken a view on the balance between sectors. On this occasion we have, as you will remember, used the TIMES model to assist us in that respect. That would be entirely consistent with the 2009 act and the approach that we have taken in the previous RPPs to look every five years or so at where our effort will be best placed. It is not about writing things in tablets of stone for eternity—or, at least, up to 2050; we would need to look at the balance every five years or so when we produce a new climate change plan.

The Convener: Perhaps you need to do that more frequently than every five years.

Finlay Carson (Galloway and West Dumfries) (Con): I have two questions about emissions envelopes. First, how were the emission envelopes developed and how was agreement reached between the different sectors and the Scottish Government? Was there any conflict in that respect? Secondly, what advice was sought from the United Kingdom Committee on Climate Change on taking those factors into account?

John Ireland: I will provide an overview and my colleagues Chris Stark and Colin MacBean can chip in, if that would be helpful.

As you will remember, our broader approach has been to invest quite heavily in the TIMES model, which is used internationally for climate change and energy modelling and to inform decisions like the ones that we are taking here. Typically, though, it is used outside of Government, and I think that we have been quite unique in using it inside Government. The model allows us to think about where to put effort with regard to societal cost, the idea being that it will provide us with the least costly way—in societal terms—of hitting the climate change targets.

That was one of our starting points. The other starting point was the advice from the UK Committee on Climate Change, which adopts a different approach and does not use the TIMES model. Its approach is similar to the one that we took in RPP2, in which we started from the bottom and built upwards instead of allocating effort from the top down. In addition to the Committee on Climate Change's advice and the output from the TIMES model, we took input from stakeholders including Stop Climate Chaos Scotland, which provided a number of very helpful case studies.

The TIMES model was our key driver in determining envelopes. The cabinet secretary took the information to the Cabinet sub-committee for discussion, and the sub-committee took the TIMES runs and balanced them against deliverability issues, social welfare issues such as fuel poverty, and the need to maintain economic growth. As the Cabinet sub-committee discussions proceeded, and there was modification of the initial TIMES run, that moved us towards a proposal for a Cabinet discussion. That is roughly the process that we followed. Chris Stark or Colin MacBean may wish to add something.

Chris Stark (Scottish Government): The key components are that we are using the model not only as a diagnostic tool but as a way to constrain decision making. That works by requiring the Cabinet or a sub-committee of the Cabinet to make the decision collectively. TIMES gives an early assessment of how to allocate the carbon and we assess that against the priorities of each of the cabinet secretaries.

The Convener: You may have answered this already, but what is the justification for the significant variations by sector in the planned emissions reductions? For example, emissions are set to fall by 12 per cent in the agricultural sector in comparison with 76 per cent in the residential sector, and it is projected that emissions will be removed completely from the electricity generation sector. Can you give us some information on that? What level of consensus existed among the various stakeholders in making such decisions?

Chris Stark: The consensus is a product of the collective decision-making process. There has

been collective assessment of the analysis that we provided using TIMES, and we have heard the views of external stakeholders on issues such as economic impact and, crucially, on the package of proposals that delivers the envelope for each sector. You are seeing the product of that collective decision-making process; that answers the final part of your question. The position has been collectively agreed by the various cabinet secretaries.

The Convener: So there was consensus, even though some of the targets are far higher than others?

Chris Stark: Yes.

The Convener: There are two points here. We are still waiting for an answer on the role of the UK Committee on Climate Change, which gave advice prior to the plan being prepared. I am interested to know whether it had sight of the plan before it was published.

The other point picks up on Finlay Carson's question. If memory serves, between 1990 and 2014 the cut in emissions in the agricultural sector was about 14 per cent, which was heavily criticised for being inadequate. Now everyone has to step up to the mark, yet RPP3 requires only a 12 per cent cut, albeit over a shorter period. Would you outline the thinking behind the setting of that target for agriculture?

John Ireland: One of the important points that was raised with us frequently during the process—and which Mr Carson may have been getting at—is the need for a sense of fairness among the sectors. Why does one sector have to do a lot more than another, which has to do a lot less? That point lies behind the convener's question on agriculture, and it relates to the big difference in how RPP2 and RPP3 were produced. As you will remember, in producing RPP2 we asked all the sectors what contribution they could make. Behind our sense of whether each sector was doing well enough was a sense of equity and the need for some degree of equal effort among the sectors, which was modified in RPP2 by practical considerations.

The great advantage of the TIMES model is that it allows us to look at the societal cost of pushing hard. One of the clear outcomes of running TIMES was that we know that it is more difficult and expensive to reduce emissions in some sectors than it is in others. The fact that the electricity generation sector is almost decarbonised points to the low societal cost of decarbonisation of that sector in comparison with the high societal cost of similar decarbonisation in agriculture.

The fact that most of the emissions in agriculture—such as nitrous oxide and methane—are, unlike carbon dioxide, biologically driven, gives a sense of where we are. If we look at the agriculture sector in detail, we see that its use of fossil fuels is subject to constraints that are reasonably similar to those in the rest of the economy.

That is what we would expect, but when we have to work with biological processes through the use of fertiliser and methane production from ruminants, it starts to become much more difficult. That is where the balance in the emissions reduction comes from.

The Convener: What about the point on the United Kingdom CCC?

John Ireland: The UKCCC gave its advice, and we had conversations on how to use the TIMES model and on the distinction between TIMES and the CCC's approach. However, the CCC did not see the final plan before it was published because of the Cabinet process behind that.

10:00

The Convener: I want to return to the point about agriculture. The section entitled "Our pathway to 2032" identifies targets for a number of sectors, and many of the targets are challenging—for example, those on industrial waste, peatland and woodland. However, the language on the agriculture sector is interesting. It uses words and phrases such as "expect", "encourage" and "work with", but many of us might have wanted to see the word "require" in there. I hate to say that agriculture is getting off lightly, because I hear what John Ireland has said, but the tone suggests that agriculture is getting an easy ride.

John Ireland: I do not think that that is the case. The work from TIMES illustrates that agriculture is not getting an easy ride. As other committees will see when they take evidence from the relevant cabinet secretaries, there is a strong sense that we are working with the industry. There are things that perhaps have more push behind them; it is important to work with agriculture, in particular, to operationalise those.

Claudia Beamish (South Scotland) (Lab): Good morning to you all. I have a quick follow-up question to push the point about agriculture a little further. John Ireland has highlighted the societal and financial costs of decisions. I am trying to understand this a bit more clearly for my benefit and for the record. Would we be where we are today with electricity generation if there had not been clear Scottish Government and, previously, UK Government direction through regulation and a lot of grants and that sort of thing? I am not sure—I am only posing the question, and perhaps it cannot be answered today.

As a member of the Rural Affairs, Climate Change and Environment Committee in the previous session of Parliament, I took a keen interest in agriculture, and I am trying to continue that—at least from the climate change perspective. Are the possible contributions through organics, agroecology or agroforestry factored in? Could grants for those be pushed further so that there are opportunities for the sort of transition that happened from fossil fuels to renewable electricity, which would perhaps be more just? I hope that I am being clear.

John Ireland: There are two or three elements to what you are asking about. There is a comparison to be made with what happened with electricity, which Chris Stark might like to say something about in a minute.

In agriculture, there are three ways of moving things forward. Obviously, the first is regulation. The second is grants and the third is encouragement of farmers to understand that there are things that are good not only for the planet but for their pockets, so that we encourage a more voluntary approach. The approach that the cabinet secretary is taking is to put across the message that low-carbon farming is good not only for the planet but for producers' pockets. That is very much the starting point.

There are other areas in which there is some sort of compulsion. For example, we have previously announced our intention to move to compulsory soil testing, which is one of the things that has great benefits for farmers' bottom lines. There is a clear acknowledgement that we need to take food producers and farmers along with us so that they realise that low-carbon farming is good not only for the planet but for their pockets, although the Government has also been very clear about compulsory soil testing and taking the regulatory approach. It is very important to understand that when looking at the agriculture chapter of the climate change plan. There is a very strong desire to work with farmers and food producers to get across the message that low-carbon farming benefits the planet, and so is really important, but that it is also good for them at a personal level.

Finlay Carson: We are talking about improved profitability for farming. I do not think that it is lost on anybody that soil plays a big part in that, and that a reduction in inputs will actually result in an increase in outputs. When you looked at the cost of achieving the 12 per cent reduction in emissions, was it taken into consideration that there would be a potential increase in profitability for agriculture? Was the return on the investment, if you like, taken into account?

John Ireland: Yes—I think that that is true across the piece. We took the TIMES model output and thought about how we would translate that into envelopes. That involved, first, creating a sense of how easy it is to move in a certain direction because to do so is good both for the individual farmer—or the individual householder, if we are talking about energy efficiency—and for society, so that there would be investment in reducing emissions. There are also non-monetary benefits. If we improve on use of fertiliser, that has other non-carbon benefits for society. Those sorts of benefits were factored into our consideration.

Mark Ruskell (Mid Scotland and Fife) (Green): I return to the convener's point about the wording of the climate plan. When you say that you "expect" farmers to be undertaking soil testing by 2018, what exactly does that mean? Does it mean that there will be compulsory soil testing in 2018 for all farmers? Alternatively, does it mean that we are in a process of negotiation with the NFU Scotland about the best way to do this and that it may take five or six years to achieve but we will start next year?

John Ireland: My understanding is that the Government announced its intention to move to compulsory testing some time ago—Ms Cunningham commented on that in the chamber last week—but there is a clear acknowledgement that we need to take food producers and farmers with us.

Mark Ruskell: When I read that you "expect" farmers to be soil testing next year, what exactly does that mean? Is it a hope or will there be compulsion?

Chris Stark: The policy on compulsory soil testing has not changed since it was set in June 2015. Our expectation is that that policy will remain in place.

The Convener: Will it be implemented in the timeframe that has been mentioned?

Chris Stark: Yes.

The Convener: Right. We need to explore that issue with the Scottish Government.

Alexander Burnett (Aberdeenshire West) (Con): Good morning. I would like to learn a little bit more about the TIMES model. I thank Chris Stark and his team for the additional session that they held to explain it. I am sure that it is a subject that we will have to learn a lot more about. What information does the model provide on the expected emissions abatement that is associated with achieving each policy outcome? Does the model provide information on the abatement costs—for example, pounds sterling per tonne of carbon—for each policy outcome derived from it? If so, why is that detail not provided in the draft plan?

John Ireland: I will start and hand over to Colin MacBean.

I think that we talked about this in some detail when we gave the committee an informal presentation before Christmas. It is important that we come back to the detail. There is a clear difference between RPP2 and the current plan in the information that is provided about abatement and cost at the individual policy level. It is important that we explore that. In essence, the difference is a result of how the TIMES model operates—Colin MacBean will explain that. There is also a fundamental difference in that we are now in a much better position to understand abatement across the piece. Our view is that the numbers in RPP2 are less useful than we thought they were at the time, because we now have a much better understanding of how abatement operates as a system—which is the whole point of the TIMES model.

Having made those introductory comments, it will probably be helpful if I hand over to Colin MacBean.

Colin MacBean (Scottish Government): As the committee has discussed already, the TIMES model is a whole-system energy model. It fundamentally changes the way in which we have to perceive the problem of carbon abatement, not least because the model is a dynamic system. When we pull on one sector or expect something to happen in one place, ripples go right through the modelling process: for example, there cannot be a single price of carbon for a particular policy measure because the costs of that policy are directly affected by costs that show up elsewhere in the system.

Let us take biomass as an example. If the system draws biomass into heating, that biomass is no longer available for any other process in the model, or is available for another process only at an increased price. That means that we have to consider the full systemic picture rather than zoom in on an individual component, as we would historically have done. The strength of that is that it allows us to be confident about the overall system costs that we face because we do not lose costs that happen on an intersectoral rather than an intrasectoral basis, as we might have done with previous approaches.

For example, where we are pushing forward low-carbon electricity, the model forces us to build the technologies to supply that electricity and we are checking that the transmission system is capable of dealing with those flows, so that we do not have at the back of our minds the unanswered question about what happens when we electrify transport or how far we can electrify heat before we start to run into large unexpected costs. That is why we have been able for the first time to put an overall value to society on the whole package of measures, which is the figure that you will have seen referenced in the briefing and the document itself, at around 2 per cent of cumulative gross domestic product, running forward.

Alexander Burnett: Thank you. As I understand it, there is a final total that is based on a set of constraints. Do you keep a record of what different constraints were used during the process? Does the Scottish Government keep a list of the different model runs?

Colin MacBean: Yes, we do. We have a full audit trail for each of the model changes that we have made. We first received the model in January this year, and we have moved forward on tightening up some technical constraints—we had discussions about biomass, for example, that led to us tightening the biomass constraints in the model.

We have also tightened up policy constraints. On heating, for instance, when left to run itself the model would see a very quick changeover to gas boilers, but that decision would be based on information that the model currently has. We know that a lot of discussion is going on at United Kingdom level and more widely about prospects for repurposing the gas grid. Using a naive modelling approach, we would jump immediately to starting to decommission parts of that grid, whereas a more nuanced position would be to minimise the potential for regret moving forward, and to use the model to inform decisions, which is why you would see in the plan the heavy focus on seep and reducing demand first, then a move to low-carbon heating technologies in the second half of the plan. That is in line with the timescales that we are seeing for decisions about alternative fuel sources coming forward.

Alexander Burnett: Are there any plans to publish any of the different sets of constraints that were used?

Colin MacBean: We can certainly make those available.

Alexander Burnett: Very good. Given that the process is completed, what are you doing and where are you going with reviewing the TIMES model?

Colin MacBean: We have been given permission to make the model open source and available to academics, so we are currently tidying it up so that it can be handed over to academics. We are also in the process of arranging for one of my staff to spend some time working with the academics to bring them up to speed. I am sure that they will quickly pass us by, but we will be involved in the initial handover period.

Alexander Burnett: Thank you.

10:15

Claudia Beamish: I want us to look a bit further at the plan's wider multiple benefits. It would be interesting for the committee—and the wider public—to hear how opportunities to secure wider benefits, such as those relating to human health, biodiversity, jobs, the possibility of manufacturing new technology, and, as John Ireland has highlighted, fuel poverty, were assessed? How were they reflected in the model development and the selection of policies and proposals? That is a broad and detailed question, but I ask the panel to begin to tease out the answers to it.

John Ireland: It is a helpful question. From the start of the process, we have been particularly concerned to take account of the wider non-carbon benefits. With RPP2, there was a general awareness of those benefits, although we did not have a lot of information on them. We are moving to a TIMES model, which looks at societal costs in terms of the capital expenditure and the operating cost of the energy system. That is quite a broad definition of cost. It is a massive step forward, but it does not include the non-carbon benefits.

We were clear that we wanted to have good-quality information on the benefits to put alongside the TIMES runs. We commissioned literature reviews of the evidence on non-carbon benefits in three key sectors: the built environment, the transport sector and the agriculture and land use sector. The reviews, which were published on Thursday, can be seen on our website—I see that you have them, which is great. They are detailed evidence reviews of the other benefits from various mitigation policies. That evidence was helpful, because it allowed us to give ministers and colleagues developing policies and proposals across the Government a clear sense of the benefits.

How were the benefits taken on board? We did not do that by looking at whether there would be an extra pound here or there. We did not do a formal cost-benefit analysis; it is quite hard to combine that with the TIMES technology. We do not have the overall picture; we just have extensive information on those three important sectors.

It was very much a judgment process. The benefits were clearly factored in how we modified the TIMES runs from the least cost run, which was our starting point. They were very much in the minds of our policy colleagues and members of the Cabinet and the Cabinet sub-committee when decisions were taken. When the Cabinet and its sub-committee looked at the envelopes generated by TIMES, there was a clear sense in their minds about how they wanted to modify those to take account of the non-carbon benefits.

Claudia Beamish: I have not made the time to delve into the reviews. If we take fuel poverty as an example, is it highlighted how the target has been missed, the challenges of meeting it and the importance of doing so for people on low incomes and rural dwellers? Could we look at that issue to see whether it altered the decision-making process of policy makers? I do not expect to hear a detailed response on the sub-committee's work, but did it inform the process?

John Ireland: It informed the process in the sense that fuel poverty and the importance of warmer homes were a strong factor in how we arrived at the residential envelope. There is a strong focus in the first 10 years of the plan on energy efficiency measures in the domestic sector. That comes from the Government's concern on fuel poverty and the non-carbon benefits—that is, the health benefits—of warmer homes.

Chris Stark: The fuel poverty example is a good one. The other examples are where we can see a wider economic benefit. An example of that would be investment in a technology in a particular sector.

The matter that you raise was fundamental to the advice to ministers on all the issues. Indeed, many of the discussions with ministers jointly were about the long-term impacts on what we occasionally call co-benefits—non-carbon benefits—from those issues.

Claudia Beamish: Could you say something specifically about biodiversity, in view of the previous discussion that we have had about the agriculture sector and the concerns about the 2020 targets?

John Ireland: All that I can say is that those factors were part of our evidence on land use. For example, for the work on agriculture, there was a fair amount of stakeholder contact, including with NFU Scotland and non-governmental organisations, so biodiversity factors were very much part of those conversations and were very much in the mind of cabinet secretaries as they made their decisions.

Claudia Beamish: Were any changes were made as a result of those discussions?

John Ireland: I can say that those factors were in the minds of people, but I am not sure that I can point to a particular decision that would have been different if we had not had a particular piece of evidence. The process was not like that, as I was trying to explain earlier. However, those discussions were very much part of the mix of evidence.

Mark Ruskell: How does this fit with the budget-setting process? In effect, you have now got a document that has actions across

Government, with some ambitious trajectories in some sectors. Clearly, that has an impact on the objectives of different departments, but there is also a budgetary implication. It is not clear in the document what the long-term budgetary implications are or even what the scale of ambition is relative to current budgets.

Chris Stark: That is a fair challenge. We make a distinction between proposals and policies. Policies are funded, where there is a cost, and we know how they will be paid for.

We are introducing the idea of carbon budgeting properly into the future policy-making process. We are setting out that element of the policy-making process and providing the carbon framework for future decisions, and the budgetary decisions need to follow that. My personal view is that it is reasonable for us to set it out like that and for later spending reviews or budgets to tackle the question of how one would fund those policies.

Mark Ruskell: Is the scale of ambition clear? For example, there is a proposal to continue with a fund to enable people to take out loans to buy electric vehicles. Is that a £1 million proposal or a £100 million proposal? Between those two figures, there is a big difference in terms of the ambition.

Chris Stark: Again, that is an entirely fair challenge. Where we are clear on how a policy will work, we are clear about the costs of that policy. However, you will not see an overall cost—I absolutely defend that position. What we are saying—I suppose that this is the fundamental shift in the way we view the policy-making process—is that carbon budgeting is as fundamental as financial budgeting. That means that the funds for the entire climate change plan, as it rolls out over the coming decades will be located in every portfolio, so, in effect, the cost of tackling climate change is found in the money that we spend on Scottish Government policies across the piece.

John Ireland: It might be helpful if I could add a couple of words about the scale of ambition.

In constructing this document, we have been clear about the need for transparency. Of course, I appreciate that, when a 170-page document lands on your desk and you only have a few days to read it, the process might not seem very transparent.

In each of the sectors, we have clear policy outcomes. Where it has been possible to do so, we have attached a time profile with the numbers. In certain sectors—transport is a reasonable example—the policy outcomes and the time path are clear. If we are to hit the emissions envelopes that are in the plan, we need to hit those policy outcomes within that sort of time profile. That gives you and us a reality check on how well we are doing.

The other element of that concerns the work that we have been doing on the monitoring framework. You will see that there is an articulation in the plan and a promise to develop that further. There is also a commitment to produce annual summaries of our monitoring framework from 2018. That gives us a clear indication about where we are going not only in terms of the policy outcomes but in terms of a number of lower-level indicators that contribute to a sense of whether we are on track. The plan contains two examples of that monitoring framework—one concerns peat and one concerns forestry. I hope that that gives you some reassurance that we are keeping things transparent in terms of our ambition.

The other element concerns the budget summary that we publish annually, just after the budget. I know that this committee and its predecessors have had some concerns about the time between that summary and the RPP but, from next year, we want to tie that into the RPP as tightly as possible. You will start to see the policy outcomes, the monitoring framework and the budget summary giving you the sort of information that will help you and us keep on top of progress.

Maurice Golden (West Scotland) (Con): Can you give a specific example from the climate change plan of a detailed policy or proposal that might increase carbon emissions but help to deliver on other priority areas for the Scottish Government and provide, say, economic, biodiversity or health benefits?

John Ireland: One pretty good example is the way in which we have treated the industrial—or heavy emitter—sector. The plan makes very clear our concern about carbon leakage. In other words, if you come down too heavily or push too hard on the industrial sector—manufacturing industry—in terms of the carbon reduction envelope, there is a danger that those manufacturers will leave Scotland. We have made it very clear that the path that we are anticipating for the industrial sector needs to be roughly in line with that in the rest of the European Union, particularly the emissions trading system. In a sense, therefore, we have constrained our dealings with the industrial sector to ensure that we do not push it harder than the EU as a whole and that we therefore minimise the risk of carbon leakage or manufacturing leaving Scotland. I think that that is one very clear example in the plan of that sort of approach.

Chris Stark: If there is time, Colin MacBean has a very good suggestion of another area where we can demonstrate what you have asked about.

Colin MacBean: Another example is hydrogen, which we see as potentially being part of the solution to the heating issue. The exact nature of hydrogen might change some time between now and when it comes through, but initially it would certainly result in emissions appearing in the industrial sector while at the same time emissions would be avoided in the residential sector. As the process developed, you would see carbon capture and storage fitting into hydrogen manufacture in a way that you cannot fit it on to domestic boilers at the moment. You will see that sort of shuffling happening between sectors.

The Convener: I will move on to some questions on policy assumptions, but I want to kick things off by picking up on your point about CCS. Table 7.4 talks about the involvement of the UK Government in CCS, but it has in effect pulled the plug on it. Given the UK Government's position, I am a bit concerned about the assumption that it will play a role in delivering the plan.

Chris Stark: You are right to say that the UK Government has shifted its position. For example, it pulled funding for a CCS competition; I think that the figure for what was effectively the prize was about £1 billion. However, I do not think that that demonstrates a complete reversal of its position on CCS; indeed, if it did, we would not be including CCS in this document as a credible policy. My understanding is that interest remains in CCS at UK Government level in the Department for Business, Energy and Industrial Strategy, and our policy is to encourage that as much as possible and, indeed, for Scotland to be the location for any future investment in either CCS or carbon capture and use, which, I suppose, is the other part of this.

The Convener: Does that view not seem rather optimistic, given the sounds that are coming out of Westminster?

Chris Stark: I think that it is an optimistic view, but then again I am optimistic. Under all circumstances, CCS plays a very important system role, and Colin MacBean might want to say something about just how big the impact is. The modelling that we have done on this is the same that my UK Government colleagues will have done on the whole-of-UK systems.

10:30

The Convener: What is plan B if the United Kingdom Government does not step up to the mark?

Colin MacBean: We have run a model without carbon capture and storage for the power sector, and the implication of that is that the system cost rises significantly, by around £3.5 billion. That is in line with what we see with the models that are being run on an international basis. They have been run for the Intergovernmental Panel on Climate Change in the fifth assessment report, or AR5, process, and they show that carbon capture and storage is very important, not least because of the potential risk of an overshoot on carbon dioxide at a global level. In that case, the only option for bringing that back down is biotechnologies with carbon capture and storage fitted. We see that referenced in the AR5 reports.

David Stewart (Highlands and Islands) (Lab): On the same theme, I am interested in the assumptions that have been made in the plan. To put things in a simplistic way, it is clear that any plan is only as good as the assumptions that have been made for it. Obviously, the plan has to be dynamic and responsive. I think that Napoleon said that any plan falls apart on first contact with the enemy.

I will give a couple of examples. You make a big play about the seven policy assumptions around being a member of the EU. It is clear that that situation is fast moving—for example, as we speak, the Supreme Court is discussing article 50. You have made big assumptions about the EU, which will clearly change. Will you talk a little bit more about that? Can the plan be adapted once we cease to be a member of the EU?

Chris Stark: Those are two excellent examples of underpinning assumptions for the plan. I stress that the plan is a draft plan. If those assumptions were to change and there was a change in circumstances, we would have to amend the plan. That is the simple way of approaching the matter. We know that we are constrained by the overall carbon targets that are set out in the Climate Change (Scotland) Act 2009, so we must put in place a process that accommodates any future changes.

I go back to the question that was asked at the beginning of the meeting. I think that the part of the foreword that was mentioned—I accept that it was clumsily worded—was about that. Our ability to do that is greatly enhanced by the way we have approached the matter in RPP3. We can now model changes in those things. There are, of course, knock-on implications if assumptions that allow us to make the carbon assessments that we are making change. How we approach this will accommodate that in the future.

I go back to John Ireland's point. We have been as transparent as we can about how we have approached that and what the underpinning assumptions are, including our membership of Europe-wide institutions such as the ETS.

David Stewart: On a more positive note, you commissioned an extra document about travel from Aether. A very positive issue that it raised

was the important role that active travel plays in breaking the bunker mentality of departments. In other words, with active travel, modal shift is achieved and the health of Scots is improved, which we clearly all support. It got a very high appraisal in all the boxes that were ticked in that assessment. Will you say a little more about active travel and the assumptions that you have made? It is a very important vehicle for modal change and reducing our climate change emissions.

John Ireland: Yes. The importance of active travel is recognised among the policy teams that are developing the plan. The Government has a number of long-standing commitments on active travel, including on funding, and they are very much factored into the development of the plan.

It is probably fair to say that my policy colleagues in Transport Scotland recognise that there are limits to how much modal shift can be obtained through active travel. Although they encourage it, it is recognised that some of the large transport emissions cannot be influenced by active travel. Active travel is important and is factored in, but it is also recognised that we also have to do things elsewhere.

David Stewart: Finally, obviously you cannot control votes on policy issues in Parliament. An issue that we raised before in the TIMES model was contradictory policy on climate change in relation to air passenger duty reduction. It is clear that that will increase emissions. What thoughts have you had in your assumptions about how that will be rebalanced elsewhere across the Scottish Government portfolio?

John Ireland: We are very mindful of the Government's commitment and policy on air departure tax, as it is now labelled, and we have factored those emissions into the development of the plan. As I explained at the end of last year, because of the way in which the TIMES model works, it is incredibly difficult if not impossible to tease out the consequence of that change, but we have taken account of the increased scale of emissions from a reduction in APD. That is factored into the plan, so it does takes account of that. However, I cannot point to one exact policy that is a consequence of that change, because it is impossible to do so.

David Stewart: You mentioned that this is just a draft plan. In future assumptions, will that effect be a concrete assumption in the plan?

John Ireland: It is a concrete assumption in the current version of the plan and it will continue to be one for as long as that is Government policy.

David Stewart: Thank you.

The Convener: The plan contains little specific detail on aviation and shipping, relative to other sectors. Is that because of their international nature?

John Ireland: Yes—that is very much the case. On aviation, which is a good example, Scotland is not the only place to include international aviation emissions in its targets, but it is reasonably unique in doing so. There was a clear decision to do that because they are part of our carbon footprint, in a sense. At the same time, however, there is clear recognition that the recent global agreement on reducing aviation emissions is the way to go. The UK Committee on Climate Change is also clear that it is the global approach that is important.

There is stuff in the plan on emissions from airports, so they are factored in, and similarly with ports. However, you are absolutely right—the policy weight is in the international elements of those areas.

The Convener: I asked the question because the aviation sector in the UK has a target of reducing emissions by 50 per cent by 2050 while growing capacity by a similar amount. Is that factored in in any way?

Chris Stark: There is an expectation in the model that we will see a 15 per cent improvement in the efficiency of new aircraft. That is modelled, but it is through that specific efficiency saving from the use of new aircraft.

The Convener: I noticed that, but there is nothing beyond that. There is a lot of stuff around biofuels, for example, and other stuff that is being worked on. Is that included?

Chris Stark: No.

The Convener: Okay—thanks.

Mark Ruskell: One of the UK Committee on Climate Change's recommendations was that there should be an aviation strategy that is compliant with International Civil Aviation Organization agreements. Is the draft plan compliant with that?

John Ireland: That question probably needs to be directed to transport officials and ministers. I should have made this point much earlier in the conversation but what we can offer you is, in a sense, an overview of the plan and how it stitches together. We can answer some of your questions, but some things are probably best left to the transport officials and ministers who developed the work. Your question would probably be better asked in that forum.

Chris Stark: The transport scenario, like every other sector of the economy, has had an immense amount of consideration, so I would be surprised if we were proposing something that was not compatible with the set of things that you mentioned.

Mark Ruskell: I have a quick question about the European emissions trading scheme, around which, as we have heard, there is considerable uncertainty, including on whether the UK will even continue to be part of the scheme. What are the alternatives? Does the draft plan factor in an emissions trading scheme for heavy emitters, either on a UK basis or possibly even on a Scotland-wide basis, depending on constitutional futures? What are the assumptions on that? Is it possible to run an emissions trading scheme on a Scotland-wide basis or, indeed, a UK basis?

Chris Stark: That is a really important issue in considering the implications of Brexit. I will ask Colin MacBean to say exactly what is modelled with regard to our expectations on the ETS but, in summary, we are expecting to remain part of it. There could be a replacement, but it would need to be designed and we would have to understand its impact before we could model it properly, which we would, of course, do.

Colin, will you say what is in the model when it comes to the ETS?

Colin MacBean: In our treatment of the EU ETS, we have looked at two time periods. For the period to 2020, we have certainty—we know what Scotland's share of the ETS cap is and how we will adjust our emissions to report against the targets. We know exactly what those numbers are. For the period beyond 2020, we do not know what Scotland's share of the targets will be.

I differentiate between those two periods because, for the period to 2020, in effect we run the model with two separate caps on it. We force it to solve for emissions in the non-traded sector and then we force it to live within the cap that we know is coming for Scottish emissions in the traded sector. When we go beyond the period to 2020, we do not know what Scotland's share of the emissions cap will be, so we take the model and we solve it with one emissions cap. That forces us to take account of where is, relatively, the best place to share effort between the traded and the non-traded cap. I would characterise that as giving us an insight into the negotiating position that we would want to take on our share of the traded sector cap to ensure that the effort that falls on the traded sector is proportionate—and is not disproportionate on the traded sector or the non-traded sector.

Claudia Beamish: When the Rural Affairs, Climate Change and Environment Committee looked at RPP2, there was a lot of discussion about the development of future technologies and the research opportunities for Scotland in that regard. In the context of Brexit, has any assessment been made of the implications of the possible loss of such research collaboration or of the funding that we are due to receive up to 2020?

Chris Stark: We have not made a specific assessment in that area—although I plan to do so—but we have considered our interaction with the European institutions and what would happen if some of the existing rules or legislation were not to be there. We have been doing our homework. Once we are clearer on how some of those issues will pan out, the Scottish Government will have a clearer position.

At the moment, we have mostly looked at the body of European law. I know that my colleagues elsewhere in the Scottish Government have considered the interaction with the innovation funding and other European funding programmes, and the interaction on energy and climate issues is big. We have begun an assessment of the implications of Brexit, but we have not written that into the draft plan. I expect that to happen—that will be the team's next task.

Claudia Beamish: That is helpful—thank you.

The Convener: We will move on to look at monitoring and evaluation. Section 35 of the Climate Change (Scotland) Act 2009 requires that each new RPP should reflect on the progress that has been made on the proposals and policies in the previous plan, but there seems to be variation in the degree of detail that is provided in the draft plan. In the electricity chapter, for example, very little detail is provided on progress compared with that in other chapters. What lies behind that?

John Ireland: That probably reflects the way in which the document has been written. We have tried to produce as much information as we can about progress. The chapters are structured in such a way that information is provided on progress since RPP2, and some sectors have given us more information than others. There is no deliberate intent behind that. Your concern that some sectors are less well versed in the story of the progress that has been made since RPP2 is useful feedback that we can take away. As we develop the final plan, we can beef up the relevant sections.

The Convener: So that we have consistency across the document.

Moving forward, obviously we need to have a monitoring and evaluation framework to accompany the plan. Where are we at with that?

10:45

John Ireland: We have spent a lot of time thinking about monitoring and evaluation, and we have seconded in Dr Sam Gardner from WWF to help us for a number of months. He has been working from his perspective, as an employee of an NGO, on what is needed in the monitoring framework, so we have that sort of cross-check.

Sam has also got involved in the policy work that is taking place: taking the envelope that Cabinet has agreed and working up the policies and proposals that are necessary to deliver that. Sam has been very much involved in the process of thinking through how you hit those envelopes and what you need to be able to demonstrate that you will hit them.

I was talking earlier about the time profile of policy outcomes, and that is very much part of the process. We have the output of those times, which gives us a real sense of the penetration that we need in electric vehicles—to give just one small but very important example. So, we have taken information from the times and we have road tested that a little bit—excuse the pun.

In the plan, we have given those sorts of policy outcome profiles. Some of them need a little bit more work, for sure, but the bare bones are there. We have also developed a policy framework that is explained in the plan. There is quite a useful picture in the plan that explains that.

As we roll out the final plan, in due course, we very much intend to give an update on where we are with the monitoring framework. The final monitoring framework will be published in 2018, along with the first annual summary. It is very much a work in progress, but we have been clear that it needs to be bedded into the policy development process, hence Sam Gardner's role, which has added value to the project.

We are also clear that you need information to evaluate where we are going. I am also keen to have a conversation with the Committee on Climate Change. You will remember that, in its last progress report, it was clear that we needed SMART—specific, measurable, assignable, realistic and time-related—indicators of progress. Now that we have got to where we are, I would like to have a conversation with the CCC so that we can marry our approaches.

The Convener: My understanding is that Dr Gardner's secondment ends in a couple of weeks' time. Is that right?

John Ireland: Yes. Obviously, WWF wants him back so that it can help you with the scrutiny process and other things. His secondment has been extended a little bit, up to the point of publication. We will take forward the work that Sam has started and the framework that he has developed. That will be an internal piece of Government work.

It has been enormously valuable to have Sam with us, as he has brought a very clear sense of what we need to provide to you and the NGOs so that you can monitor the framework.

The Convener: It is an interesting position: we will be holding one of the NGOs to account for the climate plan.

John Ireland: That is what joint working is all about.

The Convener: Yes.

I want to develop the monitoring process issue. The plan indicates that it will produce a capability to measure progress or otherwise in a variety of ways. If we assume that it will function as it is predicted to do, how do you envisage capturing the detail for the process of scrutiny by this Parliament and its committees? For example, will there be an annual or biannual reporting mechanism, to enable Parliament to consider whether progress has been made?

On a less detailed level, a criticism of RPP2 was that it was long on proposals but short on policies. You could not accuse RPP3 of being that; nonetheless, a number of the proposals will develop into policies. I would like to explore the opportunities that there will be for the committees of the Parliament that have an interest in the plan to have oversight of how those proposals develop into policies, as well as of the more detailed items that I mentioned.

John Ireland: The commitment in the plan is to have an annual summary monitoring report. To some extent, the shape of that can be determined by the conversation that we have over the next 12 months or so, as we develop the framework. What you need is an important consideration, so I would encourage us to have a conversation about your needs as well. I am very clear that there is a commitment in the plan to have a monitoring framework published every year from 2018.

The CCC produces an annual progress report. I am very pleased that in the past couple of years it has produced that after the greenhouse gas stats have been published. As I said a few moments ago, although we do not want to erode its independence, I am very keen to have a conversation with the CCC, so that we are operating off a similar set of indicators. There will be an awful lot that will allow you to scrutinise progress.

We need to be able to keep track of delivery, and that issue is important to our cabinet secretary, too. We will also need to keep an eye on exactly the issue that you have highlighted of how we move proposals into policies.

However, that is only one element. The other really important element of the scrutiny process is the greenhouse gas inventory. Because it is published with a lag, we are keen to have different sorts of indicators in the monitoring framework to give us a more up-to-date feel for where things are

going. That aspect is important, and Colin MacBean and his team have been working hard behind the scenes to improve the quality of the inventory.

There is a lot of information that I am keen for you to have and there is the commitment in the plan that we are laying before you, but I would also welcome that conversation about what you need.

Chris Stark: The very deliberate intention of this process is to plan for an annual cycle of inquiry. Without revealing too much about what Mr Wheelhouse will say to Parliament later about the energy strategy, I can say that a similar process is planned in that respect. I would really appreciate hearing the committee's views on how such things can be aligned and, indeed, how we might plan scrutiny with Parliament during the calendar year. That would be really valuable for all concerned.

The Convener: Finally, will there be a role for some of the non-governmental organisations on the governance body that has been talked about to have oversight of the plan's delivery?

John Ireland: That is something that we will need to reflect on. As you will be aware, we used to have something called the climate change delivery board. There were no NGOs on it, but it included external members such as Dr James Curran, who had been chief executive of the Scottish Environment Protection Agency but then acted as an independent; a representative from the Convention of Scottish Local Authorities; and Dr Andy Kerr from Edinburgh university. During this plan's development, however, we operated a slightly different model, in which we brought together the senior civil servants responsible for the different areas. Therefore, we have experience of both approaches, and we need to work through with the cabinet secretary how she wants to do this. Obviously, the other part is the approach that the Cabinet and its sub-committee take. Therefore, the blunt answer is that we have not worked that through yet, but we have an awful lot of experience on which to base our thinking.

The Convener: Okay. We will move on.

Jenny Gilruth (Mid Fife and Glenrothes) (SNP): Good morning. On stakeholder involvement, it is clear that a collaborative approach has been adopted for the draft plan. Page 27 of the report talks about

"half the Scottish population"

seeing

"climate change is an immediate and urgent problem",

and I understand that a series of climate conversations were held nationally to engage members of the public more broadly in the process. Can you point to specific examples of where that stakeholder engagement has affected the draft plan?

Secondly, have you, as part of your strategy, focused on engaging with young people, which is something that the committee will be doing tonight? I should apologise to Kate Forbes, because I might be cutting into her questions, but I think that it is important that you speak to the next generation if we are to effect a behavioural shift. To what extent, if at all, has stakeholder engagement focused on young people?

Chris Stark: Perhaps I can make a brief comment before John Ireland talks about the climate conversations.

In this respect, the issue that I am most familiar with is energy efficiency, on which we have done a lot of work on discussing what policy might work. Our approach has been quite different from how we might normally go about things. One might characterise the normal approach of the civil service and Government as being to sit in a room, planning something, put up some advice and then implement it, but that just would not work with regard to people's behaviour in their homes and their interaction with, say, the energy market. Why, for example, do people not do what economists like Colin MacBean might think are rational things, such as investing in their homes to make them warmer?

The conversations have been incredibly helpful in throwing light on how an energy efficiency programme might be rolled out. Again, we will put out more detail when we publish the energy strategy, but that is one example of where the conversations have led to a change in our approach.

John Ireland: The climate conversations have been rolled out in a number of ways. We have encouraged stakeholders and other people with an interest to run them and provided a toolkit for that. When those then take place, we have very little control over who is involved. We have also spent a bit of money recruiting panels to participate—we actually paid people to participate in the climate conversations. A relatively small number of people were involved in that, but they included young people. Those numbers were small because of the nature of the groups, which were like focus groups and so allowed us to get an awful lot from a relatively small number of conversations, but the young people demographic was included in that. Young people have also been involved in the process through the 2050 group. Some time ago, the 2020 climate group set up a group of young people in their 20s who were interested in becoming climate leaders of the future, and we have worked with that group at various points. For example, it was involved in the stakeholder event

in December. So young people have been involved.

The Convener: To deliver on this, we need to get significant buy-in, probably from all sectors. What direct conversations have been held with industry or the agriculture sector, which we touched on earlier? What is the vibe in terms of buy-in? Are some sectors having to be dragged kicking and screaming to do this or are sectors universally right behind it? Alternatively, are we somewhere in between?

John Ireland: The conversations have been proceeding at different paces. For some years, the Government has had involvement with the 2020 group, which is an independent group of businesses with a strong interest in climate issues and has been an important industry voice. However, that is a self-selecting group of people who have an interest—often an industrial interest—in the area.

As Chris Stark said, there has been more involvement on things such as energy efficiency, particularly as Scotland's energy efficiency programme—SEEP—covers non-residential and residential buildings. In agriculture, there has been fairly intensive industry involvement. One thing that I am very pleased about is the opening up of conversations with the standard business organisations. The Government has started to speak to all the business organisations about the climate plan. That is an enormously important development, because previously we did not have a great deal of success with those conversations, but they are now starting. I am pleased that the business organisations are interested and are willing to talk. One of the key things that we will do over the next few months, as we reflect internally on the climate plan, is to deepen those conversations with industry.

The Convener: You have kind of answered this, but how clear are those sectors on their responsibilities and the role that they have? Even if they get that they have a role to play, are they sufficiently well equipped to deliver on the targets, or to assist us in delivering on those targets?

Chris Stark: A legitimate criticism of the plan is about the extent to which each sector has been consulted in the same way. For example, we could contrast our engagement with the renewables sector—we engage with it regularly and have a clear understanding of its needs and how it will play a role in the system—with our engagement with a very disparate sector such as the services sector. Throughout the preparation of the plan, there has been engagement with all the industrial or commercial sectors in the economy, but the extent to which we have been able to do that varies immensely according to the policy package and the strength of existing relationships. I am keen that we do something about that. My take on the plan is that it should facilitate discussions with some of the sectors with which we have had less engagement.

The Convener: How much work remains to be done?

Chris Stark: I accept that quite a lot remains to be done in some areas. I am thinking particularly of the services sector, which is one of our biggest sectors and is very disparate. We need to think about how best to facilitate the discussion with each services sub-sector so that we can get into a discussion of how to get there.

The Convener: That moves us on to behavioural change, on which Kate Forbes has questions.

11:00

Kate Forbes (Skye, Lochaber and Badenoch) (SNP): I want to move on to the ISM—individual, social and material—approach, which the draft plan refers to and which describes the three contexts that influence people's behaviour. There is also a helpful annex covering that.

Will you identify where in the plan's development process behaviour change was considered? In particular, where was it reflected in the iterative process of developing the emission pathways and policy outcomes through the TIMES process?

John Ireland: In thinking through the plan, one of the key things for us was behaviour change. In the Government, we have long recognised the importance of behaviour change and of getting people to do the things that will help us to reduce carbon emissions.

The work on the ISM model has been going on for a long time. What we did to push that forward in developing the plan was put quite a lot of resource into how to use the model. We have the developed model and, in conjunction with a number of external consultants, we have developed toolkits for thinking about it. To put it crudely, the question was how to run a session for various sorts of people using the ISM model to help in thinking about behaviour change and policy design. We put a reasonable amount of money behind that. We offered our colleagues in different parts of the Government the opportunity to have the workshops for policy makers in the Government and people externally, and we had pretty good take-up.

Energy efficiency is one relevant area that comes to mind. It provides a classic example—we can invest in new heating systems, but individuals might have difficulty in using them or might use them in ways that do not achieve the energy

efficiency or carbon reduction that is wanted. That was one of the areas where the policy people took the ideas and ran with them. They held a couple of workshops internally and externally, and the ability to change people's behaviour was factored into the development of policies and proposals. That is reflected in the work that is being done on Scotland's energy efficiency programme—that is one clear example.

One upcoming piece of work that I know about is the intention to look at transport and mode choices for the school run and what we can do to influence behaviours there. That is two examples—of work that we have done and work that we intend to do.

Kate Forbes: The school run example is helpful in showing what you intend to do. Will you sketch out other plans for furthering the work of engaging on low-carbon behaviours and increasing the pace of change after the plan's publication?

John Ireland: I will take a step back. One of the key messages of the ISM model is that it is not just about running workshops and exhorting people. You might remember the very old advertisement about throwing away your car keys. We are not talking about such an approach and the model does not focus simply on people. It is very much about lining everything up so that the right infrastructure is in place, information is provided, people are helped to make the change and we work with social norms.

I see the issue in a holistic way. The work that needs to be done is further refinement of the policies and proposals to make sure that we have all the elements in place. We cannot pull out just behaviour change and say that that is what it is about. It is about the whole holistic picture. As we do further work on the policies and proposals in all areas, that will come through.

We had an example this morning when we talked about soil testing and farming. We have talked about energy efficiency and heating controls. Active transport is another example. That goes across the whole piece.

Kate Forbes: In short, would you say that factoring in behaviour change has played a big part in the process?

John Ireland: It has played a big part in our consideration and process. Once we have the envelopes for designing the policies and proposals, we will not be sitting on our laurels and saying that we have done the work. A lot more work needs to be done.

We have a really good framework and toolkit. We now have a reasonable amount of experience in running workshops for policy developers and for the public and the people in the relevant sector, and we need to do more of that.

Claudia Beamish: On page 30 of the draft plan, planning system issues are highlighted. Can anyone on the panel describe the possibilities that you see in relation to the planning system, especially in view of the fact that the Scottish Government has recently launched a planning review? How does that relate to the national planning framework?

Chris Stark: I will take those questions and John Ireland can step in if he wants to. Planning is particularly important when we think about the overall infrastructure challenge. We could try to distil from the plan an infrastructure strategy, and we might come to that when we are putting some flesh on the issues.

We are particularly aware of the importance of the planning regime to planning for future infrastructure, especially for transport and energy, which are the two key points for us. We look to the planning review that is under way and to the reframing of the national planning framework and the Scottish planning policy underneath that as important moments in the future.

I have learned from painful experience that the planning system cannot be changed quickly, so it is immensely important to get the strategic objectives right at the outset and let the planning regime reflect them. The plan puts us in that space. As my Scottish Government planning colleagues plan for NPF4, and as part of the planning review, I hope that the strategic objectives that we have set out for the whole economy will play a much bigger role in the way in which we view the planning regime.

Claudia Beamish: Thank you. That is encouraging.

Mark Ruskell: I go back to stakeholder engagement and the UKCCC, which came up with a number of recommendations last year. Some of them have been taken on board and fleshed out as policy objectives in the RPP, but a number were rejected. What has been the process for rejecting those recommendations and discussing the reasons with the UKCCC, justifying the rejection and getting the UKCCC's advice on whether that was a wise move?

John Ireland: All this comes down to the different ways in which we tackle issues. The UKCCC has a modelling framework that is rather like the RPP2 framework, and that has resulted in a number of recommendations. The TIMES framework is different, and we have talked at length about its characteristics, but it suggests that things can be achieved more effectively and at a lower societal cost by being done differently, and

we have very much worked with the TIMES approach.

The position is not so much that we have explicitly rejected some of the UKCCC recommendations. They have informed our thinking, but the TIMES model throws up different approaches—Colin MacBean talked about some of the issues, particularly in the residential and service sectors, where TIMES modelling takes a slightly more aggressive approach than UKCCC modelling, and there are flips—transport is probably one example—where the UKCCC would probably push more and we would push less.

Mark Ruskell: Is it challenging if your advisers operate a different form of modelling from your own? Surely the assumptions will be different and there will be a mismatch.

John Ireland: That provides a valuable double check. We have been talking to other people who operate the TIMES framework, such as a group at the University of Edinburgh that operates it in a slightly different context and which uses slightly different TIMES models. Using different modelling approaches is not an issue. There is a strength in having a variety of approaches, which allows us to cross-check the UKCCC's modelling against our modelling. To go back to your point about duration, it is important to continue to do that and to deepen the conversation.

I should add that we have kept the UKCCC in the loop on where we are going with TIMES modelling and our general approach. When the analysts and Colin MacBean were building the TIMES model and doing the data checking, we had helpful input from the chief analyst at the UKCCC. It knows what we are doing and it knows about our approach. We just have a different approach to modelling.

Chris Stark: I cannot speak for the UKCCC, but I understand that it entirely accepts the validity of the TIMES approach. That is just an alternative model, although I accept that it throws out different conclusions.

Mark Ruskell: Have you run the UKCCC's policy recommendations through the TIMES model?

Colin MacBean: They are just different approaches. As we have discussed, the TIMES model looks at the whole system, while the UKCCC looks at components of the system. What one can usefully do is compare the two approaches, look for areas of difference and similarity and, as John Ireland said, cross-reference them.

During the modelling process, we have been particularly careful to view the model as a guide. The plan does not set out in tablets of stone what the future will look like; instead, it sets out, on the basis of our understanding of the best information that is available to us, what we think the future might look like and what the challenges might be in getting to those pathways. It is important to understand that there is not one truth but multiple aspects to take into account.

The Convener: Alternative facts. [*Laughter*.]

Colin MacBean: Not quite that.

A good example is our having separate evidence reviews of the benefits that are not captured in the TIMES framework. If you look at the bottom-line TIMES number, you will see that those benefits are not in there, but they are in the plan and have been considered in the package of the plan.

Mark Ruskell: I will press you on the recommendation that was touched on earlier of having compulsory soil testing instead of the policy of the Government expecting farmers to undertake soil testing by next year. Have you run the two different scenarios—one is based on compulsion and a regulatory regime and the other is based on a policy of voluntarism—through the TIMES model?

John Ireland: The TIMES model provides the least-cost—or the least-cost modified—envelope for the agriculture sector. In other words, it takes account of the costs in the agriculture sector of reducing emissions in society, whether that is done through compulsion, regulation, voluntarism or whatever. It does the same for other areas. In transport, it will say, "This is what you can do technologically, and this is the best least-cost technology that you should put in place," and ditto for agriculture. The policy teams go away and spend time—this is where Sam Gardner was especially important in the process—looking at the envelope that has to be hit and the policy levers and proposals that are available and deciding which ones will deliver best for us and which ones will work for the greatest number of stakeholders.

That is the process. It is not possible to run the two scenarios of compulsory soil testing versus voluntary soil testing through the TIMES model; all that it will say is that the application of nitrogen needs to get to a certain level. It is very much a more traditional approach to developing policies and proposals that sits underneath the TIMES envelope.

The Convener: Let us leave the TIMES model out of this for a while and pursue the line about the UKCCC recommendations. One criticism that has previously been made relates to a failure to identify ownership of a policy, and I will tease out that quite important issue. Will people or bodies be identified as having such ownership? After all, it is not just the Government that owns policy—or are

we to assume that the relevant minister or cabinet secretary ultimately has that ownership?

Chris Stark: That is a really important question, although I am not sure that there is a satisfactory answer to it. Our approach has been to make cabinet secretaries responsible for policy making, which is what is laid out in the draft plan. There is a different discussion to be had about who ultimately is responsible for the ownership of delivering a policy, and our intention in monitoring that is to be much clearer and much more transparent about who is responsible for that in the future. The approach will vary according to the policy; I should point out that some of the policies vest at the EU and UK levels, and there is therefore a question about how, if at all, we oversee delivery in a clear fashion.

11:15

John Ireland: In the draft plan, we are clear about whether the policies are at the EU level—we have talked about the ETS; the UK level—we have talked about CCS; or the Scottish level. That information is set out in table 9-1 on page 73 of the plan.

The plan is also clear on who the public sector partners are. Table 9-1 is not a great example of that—it just says "not applicable" in the relevant column—but, on page 76, there is an example where local authorities are responsible for a policy proposal.

In the policy chapters, public sector partners are clearly identified. There is also a strong narrative on the delivery route. We have thought through the matter at the policy development stage and we are trying to be clear. In taking on board the concerns about RPP2, we are trying to be transparent about the delivery routes and the responsible public sector bodies. In governmental terms, Chris Stark is right—the individual portfolio cabinet secretary has responsibility in Cabinet for the policies and the proposals.

Claudia Beamish: I was on the public sector climate leaders forum in the previous parliamentary session. What happens if a local authority is the lead responsible body and does not deliver on, for example, the policy on taxis?

John Ireland: That becomes a standard conversation that involves Transport Scotland, our colleagues in the Government who deal with local government, and people from local government. We have been at pains to establish relationships with COSLA on such issues, and the conversation is on-going. An issue such as that would become a standard part of Government policy delivery. Similar issues occur in education and elsewhere.

The Convener: Let us move on to look at peatlands. The targets that have been laid down are welcome. If the 2017-18 draft budget line is the shape of things to come, there will be considerable funding to help to deliver on those targets. However, a number of practical questions arise from the policy.

The draft plan talks about providing

"grant funding to ... eligible land managers".

Which land managers are eligible and which are ineligible?

I note from table 6-1—I realise that the figures are probably only indicative—that you envisage 10-plus projects a year failing to be awarded grants. I would like a bit of clarity on that. Excited though people are about the policy announcement on peatlands, they are looking for a level of detail.

John Ireland: I do not know the answer to the question.

The Convener: That is all right.

John Ireland: We will note the issue and get back to you.

The Convener: You might need to do the same with my other questions. The policy indicates that restoration will predominantly be aimed at large-scale landscape projects rather than small, fragmented ones. I understand the logic of that, but what will constitute large or small-scale projects? Will you be focusing on badly degraded bogs, ones that are easier to repair or a mix of both? That will have a significant bearing on the result that you get.

I am interested in whether the funding that has been identified is purely for the purpose of physically restoring the peatlands. Once peatlands have been restored—particularly on a significant scale in parts of the country such as the Cairngorms national park—people will face the cost of fencing in the bogs to protect them from the ravages of deer. It would be useful to have the detail.

Chris Stark: I think that we should write back rather than seek inspiration at this moment.

The Convener: I am happy for you to do that. A lot of interest has been generated about peatlands and people are asking those questions, so I ask you to provide as much detail as you can.

We will move on to the subject of waste.

Maurice Golden: I refer members to my entry in the register of members' interests on Zero Waste Scotland.

The waste sector is a climate change success story, yet other waste targets, such as those on recycling rates, have not been met. How does the

plan for the waste sector seek to deliver on related targets, whether in the waste sector or in other sectors?

John Ireland: I am looking at the briefing that I have from my colleagues in waste to see whether it gives a helpful answer to that question.

My sense from what I have in front of me is that we will continue to work towards our suite of ambitious targets, including some that you mentioned, such as the targets to reduce waste by 15 per cent by 2025 and to increase recycling to 70 per cent of all waste by 2025, and that we will build on our waste regulations, which keep food waste out of landfill, by reducing the amount of food that is wasted in the first place and through action to meet our 33 per cent food waste target.

Those are the key points, but I recognise that that is not a full answer to your question.

Maurice Golden: Could there be conflicts as well as synergies between the draft climate change plan and other recycling or waste targets?

John Ireland: No—I do not think so. Our colleagues in waste are aware of their existing targets and I think that they will have taken the issues on board.

Colin MacBean: One issue that we faced earlier in the process was that our modelling identified waste as a potential source of energy but our colleagues in waste were quick to point out to us the existing policy framework around waste, so we did not undercut that agenda.

Maurice Golden: How does energy from waste fit in with the assumptions that you have made for the waste sector?

Colin MacBean: We were guided by our colleagues in waste on what we put into the model about the diversion of waste streams. In the models, waste can look attractive as a source of energy, but when we are starting to develop more positive uses for some waste streams—involving, for example, recycling and the reuse agenda—we do not want to cut off the source of raw material. The information that was fed into the model took account of those policies.

Maurice Golden: You are confident that there will not be a conflict between, on the one hand, energy from waste and the contractual commitments that local authorities have made to burn waste and, on the other, the target that the Scottish Government has set to recycle the same waste at a level of 70 per cent by 2025.

Colin MacBean: That level of detail is beyond what we look at in the modelling. We take a high-level, strategic view. We take the policy that colleagues in waste give us and implement it in the modelling framework. We will not be breaking any contracts.

Maurice Golden: In the assumptions for the draft plan, is energy from waste in Scotland staying the same, increasing or decreasing?

Colin MacBean: I do not have the assumptions on energy from waste in front of me, I am afraid. I can certainly add them to the list of things that we will write to the committee about.

Maurice Golden: Thank you. Is there a potential conflict between the 33 per cent food waste reduction target and the biorefinery road map? There are feedstocks that could be interesting in terms of processing, but there are also reductions of those self-same feedstocks.

Chris Stark: I do not think that there is a conflict, although I can see why you ask the question. We can understand how the energy system would cope with that. The TIMES model is very good, although I am afraid that I am not sure whether it can go down to that level of detail.

What we take from our colleagues in the policy team who look at waste—and, indeed, from the responsible ministers—is a set of assumptions that allows Colin MacBean to do the modelling work. I am confident that, in future, we will be able to model different approaches to these things. At present, bioenergy is quite underdeveloped as a topic, but I expect that, as it develops in the future, our position will change.

Maurice Golden: The Committee on Climate Change has recommended the encouragement of recycling and separate food waste collections in rural and island communities. What solutions is the Scottish Government considering, and what leadership will be provided to local authorities in those areas, which might not have the necessary expertise in relation to major waste collection service changes or the commissioning of new waste-processing plants?

John Ireland: I think that it would be best if we wrote to you with the answer to that question.

The Convener: I want to follow up on the local authority issue. Table 12-1 talks clearly about local authorities being partners in delivery. However, local authorities face other challenges that might conflict with what we are trying to achieve in this area. For example, Angus Council is the top-performing recycling authority in Scotland but, because of budgetary pressures, it has decided to close some recycling centres and reduce the hours of others, and it is currently withdrawing access to food waste collection in rural areas that are on the borders of settlements and villages. What consideration has been given to the fact that, as partners, local authorities might have other

pressures that might take them in a different direction from the one that we want to go in?

Chris Stark: At the top level, what we are doing is built on the idea of partnership with local authorities. I suppose that there are various degrees of partnership, and the policies that you laid out are at one level.

I feel strongly that we need a multiplicity of approaches across Scotland, although 32 might be too many. At the moment, we have a plan that is very macro, if I can put it that way. At the next stage, one of the most exciting things in relation to how we manage the current period of setting strategies and, indeed, the energy work that we will do subsequently, will be to think in much more detail about local plans, and to ensure that the Scottish Government is supporting those local plans. That is what I think about when I think about partnership.

I want to assist with the process of planning in relation to a more bespoke energy and climate plan. That stops short of having a different carbon budget for each locale in Scotland—you are free to suggest that, of course, but I can see that that would be difficult to implement. I think that it would be useful for us to work in partnership with local authorities to better understand what the plan is in their area, partly as a means to enable public funding to flow, but also because doing that properly would act as a prospectus for private investment. I am extremely keen that we do that after this.

The Convener: Perhaps local authority clusters could be part of that.

Chris Stark: Absolutely. I feel that 32 such plans are probably too many, but I am happy to be challenged on that. We should certainly have regional plans, as best we can put those together, and they require quite deep partnership working. The best way that I can describe what we have done is to say that it sets the framework for that to happen.

Maurice Golden: On macro-level policies, what consideration has been given to having policies around deposit return or the introduction of greater producer responsibility in the draft plan?

Chris Stark: I am not an expert on waste and, unless any of my colleagues know the answer to that question, we will add that to the list of things that we will get back to you on. I apologise that I do not have that detail.

Maurice Golden: On jobs, the evidence review makes it clear that there is a lack of recent data, and certainly a lack of Scotland-specific data. Is that a concern? Is there a plan to commission studies in that regard?

Chris Stark: I do not think that it is a concern, but I see it as an area for further research. All the statistics that I am aware of around job numbers in the low-carbon economy are highly speculative, although some of them are now national statistics. Some of the methodologies for bringing those statistics together are constantly reviewed. I think that that is an area that we could do more on.

Colin MacBean: At the moment, the challenge with regard to the macro-level data sets is that everything is done on the basis of standard industrial classification, which tends to be a fairly blunt tool. Particularly as the tentacles of the low-carbon economy start to reach out into traditional sectors, it becomes tricky to determine which jobs are low-carbon jobs and which are not. We have tended to fall back on bespoke surveys, but, obviously, those are expensive and we have to run them at quite a large scale in order to get any level of statistical robustness. That is why the Office for National Statistics has brought forward the measures that it has.

11:30

Maurice Golden: Going forward, it would be helpful to look at not only the total number of jobs but job types and where they are located. I am aware that, in England, the Waste and Resources Action Programme has published a circular economy report that looks more widely than at just the waste sector. It looks at the total number of jobs, where they are likely to be and how that impacts on unemployment in some of the most deprived areas in England. It would be useful if you could publish any reports that you may have on that and look at a more detailed study into it.

Chris Stark: I agree. There is a tendency for us to alight on a single figure for job numbers, but in something as disparate as the low-carbon economy that approach is not particularly illustrative of what is happening.

The major reason why I would like to do what you suggest is that it would steer future policy development. We would have a much stronger sense of where the high-value jobs in tackling climate change lie if we could get under the skin of the national position.

The Convener: In doing that work we should take account of the jobs that will be created by peatland restoration. There will be jobs around that in rural areas.

Chris Stark: Yes.

Claudia Beamish: Let us turn to blue carbon and marine issues in relation to climate change. As you will know, in the previous parliamentary session I took a keen interest in those issues, as

did Paul Wheelhouse, who was then the climate change minister.

On page 225 of RPP2, there was what I would describe as a box on blue carbon. It was rather like the box in RPP1 on peatlands, which flowed into where we are now with the peatlands low-carbon issues that are highlighted in RPP3. Unless I have missed it, I do not see any developments on blue carbon in RPP3, which I and a number of others find disappointing. The box in RPP2 said:

"The Scottish Government is working with Scottish Natural Heritage to continue to develop our understanding of blue carbon"

and

"(a) increase understanding of the distribution of blue carbon habitats, their condition and potential contribution; and (b) review and develop policies on blue carbon and consider proposals to capture their potential."

Most important, it said:

"It is hoped that this will allow us to build a foundation from which it may be possible to develop policies and proposals for inclusion in the next RPP"—

which is RPP3, or the draft climate change plan—

"in order to contribute to the efforts necessary to meet Scotland's annual greenhouse emissions reduction targets."

I think that there is an absence. Will you shed some light on how that absence has happened and whether, at this stage, it might be remedied? The box in RPP2 went in because of the questioning that happened in the previous parliamentary session and representations from NGOs. It was not there in the previous plan. I am very disappointed, frankly, and I would like your comments.

John Ireland: We were aware that your predecessor committee was very interested in blue carbon. I remember having a conversation with Graeme Dey's predecessor, Rob Gibson, about that and his hopes—which I think are also yours—for blue carbon's potential. We have been speaking with our colleagues in Marine Scotland about that.

My understanding is that the advances in blue carbon science and monitoring frameworks have been much less rapid than those in the corresponding area of peat. We have been making enormous progress on peat, which is reflected in both RPP2 and RPP3, partly on the back of monitoring and our scientific understanding. As I said—Colin MacBean might be able to add to this—my understanding is that things did not develop as rapidly on monitoring in terms of the Intergovernmental Panel on Climate Change and the accounting framework, or on our scientific understanding of the potential measures.

That explains the absence. We considered including blue carbon and pushed quite hard for that in the early stages of the plan's development, but the message that I have been hearing from Marine Scotland is that we are just not as far forward on it as we would like to be because of the science and the accounting frameworks.

Chris Stark: We have to accept that this is an area that requires further work and I will reflect on that.

That is part of the process that I hope we are now engaged in, so I am pleased. That might sound odd, but the scrutiny process should throw up things that we are required to do more on and to look at further. This sounds as if it is one of those areas.

Claudia Beamish: Do you accept that, given that there was in RPP2 that box, as Mr Wheelhouse and I described it, which referred to the possibility for the future, we should not lose blue carbon from the plan altogether?

Chris Stark: Yes. Let us look again at that.

Claudia Beamish: I would be keen to see in the final plan what research there has been—I know that there has been research on sea kelp and a range of areas.

Chris Stark: It seems that, at the least, we should be able to update you on that. I take that point entirely.

Claudia Beamish: Thank you.

The Convener: There are a number of items that you will take away from today's meeting and write back to us on. I appreciate how incredibly busy you are at the moment, but if we could get answers as quickly as possible, that would be great. The committee clerks will be in touch with a reminder of the points.

I thank you all for your attendance and your useful evidence.

11:36

Meeting suspended.

11:46

On resuming—

Deer Management

The Convener: Welcome back. Agenda item 3 is to take evidence from Scottish Natural Heritage on "Deer Management in Scotland: Report to the Scottish Government from Scottish Natural Heritage 2016". We are joined by Andrew Bachell, who is director of policy and advice at SNH; Donald Fraser, who is operations manager for deer and wildlife; Claudia Rowse, who is head of the rural resources unit; and Des Thompson, who is principal adviser for biodiversity. Good morning, everyone.

I think that Mr Bachell will make a short statement.

Andrew Bachell (Scottish Natural Heritage): Yes. Thank you very much, convener. I hope that my statement is reasonably short.

I thank the committee for inviting SNH to come back to provide it with further information and to respond to other submissions that you have heard. We have listened to a range of responses to the SNH review of deer management, and we have no doubt that members will want to ask us many questions.

We are pleased that the report has stimulated considerable interest and widened the focus from just red deer in the uplands to all species of deer throughout Scotland. Deer are a huge asset, a vital part of the natural heritage and our ecology, and a valuable economic resource that contributes to tourism, food, culture and jobs. That is important context for our work.

We do not think that anybody has disagreed with our overall conclusion that deer are having an adverse impact on the natural heritage, and we are more than content with the report's conclusions on the findings, as they were based on the best available evidence, robust analysis and scrutiny of that analysis.

The evidence was drawn from a number of sources. We would never claim that the evidence base was perfect, but we do not think that there are any fundamental gaps or errors in what we have presented, and we see no reason to redraw the conclusions. We can explain that. Members have heard views to the contrary, which we will pick up on.

The five pieces of evidence that we have relied on are the James Hutton Institute's work on population trends data, the native woodlands survey, the site condition monitoring data, section 7 analysis and last, but certainly not least, the assessment of the performance of the deer management groups since 2013.

There have been generic and specific comments on the report. I will address some of the generic comments to start with.

There was a question about the timing of the review. Given that more information was due to be delivered to us in 2017, it was asked whether we should have deferred publication. That would have put us outwith the commissioned timetable that the previous minister set and would not, in our view, have added greatly to the findings. Nevertheless, we will continue to review information that comes to us and take it into account over the following months.

One thing that we were not asked to do was to produce recommendations; in fact, we were specifically asked not to do that. However, it might be helpful to consider options, and we would certainly be happy to explore next steps, not at the stage of recommendations, but to carry forward the debate that has now been started.

We are conscious, however, that it is not necessarily on the issue of evidence that more needs to be done to resolve the conflicting demands for deer management. It is vital that we make use of the various policy statements, documents and guidance that exist to deliver action on the ground but, more than anything, we perhaps need clear, settled priorities to bring that into account. I argue that that is the most important piece of work that needs to be done.

There has also been a question about the experience that SNH has brought to the work. SNH has a lot of experience as a deer manager. We own and manage a number of significant estates where deer are a major component of the wildlife. We have staff who have practical experience of deer management, who provide advice to others and who have been integral in preparing documents such as "Scotland's Wild Deer: A National Approach". We have a strong science base, with experienced wildlife managers and others who can address complex ecological and data issues. Our review involved people from all those backgrounds—thankfully, several of them are here today. However, we did not do the work alone. The conclusions are ours and we stand by them, but we were greatly assisted by others in the process. In that regard, I put on record our particular thanks to the Association of Deer Management Groups and to Richard Cooke, without whom we would not have got a lot of the data that we required for the work.

I want to make it clear that the report is not universally critical. There is a wealth of good and practical experience out there, on which future arrangements might be based. There are

examples of attempts by managers of private land to deliver on the public interest objectives. However, we did not find a consistent standard or consistent evidence of progress.

I suspect that I have taken up enough time just on an introduction, but I ask Claudia Rowse to pick up on a couple of other specific areas in relation to which criticism has been levelled at SNH.

Claudia Rowse (Scottish Natural Heritage): Good morning, everyone. Quite a few comments have been circulating about our review. You will be pleased to hear that I will not go through them all, but I would like to clarify for the committee two main areas that have been referred to in the evidence. The first relates to the trends in population. We received the most substantial amount of supplementary evidence, criticisms and questions about the James Hutton Institute work on that. I do not propose to clarify that further, because I feel that Professor Albon's oral evidence last week and the supplementary submission from the James Hutton Institute fully addressed the issues that were raised; to summarise, they confirmed that the trends over the past 50 years that we showed are based on absolutely robust information and that the questions about the changes in methodology do not bear scrutiny. An issue was also raised about the difference in the modelling scenario compared with the practical counts, but that was within standard tolerance of about 10 or 20 per cent, so that evidence has also been upheld.

The other main area that seems to have attracted additional analysis and some misunderstanding about how the data has been interpreted—as we discussed last time, it is complex and difficult—is the native woodland survey. A couple of specific issues have been raised; they are not new to us, because the survey was published in 2014, so the positions have been fairly well rehearsed. I have spoken to the Forestry Commission, which commissioned the work, and its view is that there have been misunderstandings of how to interpret what is a complex set of data. I will mainly pick up on two issues, although I am happy to answer any other queries that the committee might have about the interpretation of the data.

First, there is no dispute that deer are impacting on native woodlands, or about the headline figure that more than 30 per cent of native woodlands are impacted by herbivores. However, some new analysis was done that used a different data set and concluded that the native woodland survey had incorrectly identified deer as the major driver of the impacts. That additional interpretation identified non-native trees such as rhododendron as a greater threat and as having a greater impact on native woodlands. That is interesting new analysis, but because it used a different data set, it does not apply and is not relevant to the findings of the native woodland survey, and it does not counteract the main finding that 30 per cent of native woodlands are impacted by herbivores.

Secondly, the allegation was made that surveyors had a tendency to overestimate when recording deer as being present. That is incorrect in terms of the guidance that was given to surveyors. Surveyors were asked to do two things for the native woodland survey. As well as being asked to identify the impacts—I have discussed the 30 per cent figure—they were asked whether they could identify which herbivores were present. They were able to identify that herbivores were present only in 77 per cent of cases, and in 23 per cent of cases they could not identify which herbivore was present and none was recorded. For the record, as our review shows, surveyors identified deer in 73 per cent of cases. That is a correct figure. Supplementary information that is provided in the full native woodland survey, but which I do not think that we went into the detail of in our report, shows that surveyors identified livestock in 15 per cent of cases and rabbits and hares in 3.5 per cent of cases. That shows that the allegation about the guidance for surveyors was incorrect.

The Convener: Thank you. Let us move on.

David Stewart: Good morning, panel. I have a few technical questions about SNH's deer management report. What was the procedure for selecting external peer reviewers of your report?

Andrew Bachell: Des Thompson can pick that up.

Des Thompson (Scottish Natural Heritage): We have a scientific advisory committee, which is composed of a variety of experts. For the deer management report, we chose a member of the committee—Professor Robin Pakeman—to go through the annexes in detail. Professor Colin Adams, at the University of Glasgow, was asked to peer review the report. He is a former member of our scientific advisory committee—indeed, on occasion he chaired meetings of the committee—so he is a very experienced reviewer. He did not have a lot of time to review the report, but he returned it with substantial comments, which we addressed.

David Stewart: In effect, the external reviewers were members of SNH's scientific community. Was any external advertising carried out to invite people to be external reviewers? Was the role advertised?

Des Thompson: No—that is why we have a scientific advisory committee. It is quite standard to use members of our scientific advisory committee and members of our expert advisory

panel to review reports for us. Normally, we would get one or two reviewers to carry out such assessments.

David Stewart: You will have picked up what Professor Albon said at last week's meeting. He suggested that one way forward would be to regard the report as a "beta version". That is the horrible jargon for the process whereby external consultants are asked to review a piece of computer software before it is fully launched on the market, but it can be applied to any scientific piece of work.

I mean no disrespect to your scientists who reviewed the report, but would you consider that process as being useful in enhancing the report's viability with the industry generally, in the sense that such reviewers would be seen as independent and external? It is my understanding that, with most academic work, getting external validation from peers is extremely important in the academic community. I presume that it is important in your community, too.

Des Thompson: Yes, it is. I am an associate editor of the *Journal of Applied Ecology*, so I have to deal with the issue of getting reviewers all the time.

I think that what we have done for our deer review is perfectly fine in the context of how we have published other reviews. Indeed, for some such reviews, we might not have gone out to external review. However, I can say that we will carry out a more detailed review for the report that we receive from the James Hutton Institute, because there will be so much more science in that report.

David Stewart: That might relate to the point that Andrew Bachell made about the timescale that the previous minister set and the fact that you were not to make recommendations. Given that you are to get a lot more information, is it possible that you could have a phase 2 report that incorporates the new research?

Des Thompson: I do not think that that is necessary. Given the comments that we have received on the report, we do not see any need for that. It is clearly very important that when we get the report from the James Hutton Institute—which we are looking forward to receiving, given the excellent evidence that Professor Albon gave last week—it goes through a detailed review process.

12:00

David Stewart: Obviously the committee's role is not to be the Government; we are here to keep the Government in check as well as to give advice to organisations such as yours that are responsible to Government. We are not scientists, but clearly there was criticism of the report. One very practical suggestion was that it might have been a lot more credible had you had more external reviews and a stage 2 report. It is obviously in our interest to ensure that the report is more credible. You might have started on one particular tramline, but we are suggesting another.

Claudia Rowse: Perhaps I can add to Des Thompson's comments. As Andrew Bachell has, I think, picked up, the five key pieces of evidence still stand in our view. The James Hutton Institute report will be subject to external peer review, but the native woodland survey has previously been published and therefore does not warrant any further peer review. There have been no disagreements over the deer management group assessment, which forms a significant part of the new data that has been collected in partnership with the deer management groups. We have been using our own data for the two other areas: site condition monitoring and the use of section 7 agreements. They are quite small; indeed, the section 7 data set, with 11 agreements, is very small. For the data sets that are not subject to further peer review, the main challenge for me has been how we reach our conclusions based on the evaluation of those data sets, rather than their meriting any further peer review.

David Stewart: I accept that, and scientists gave us that advice at our last evidence session, but if you have nothing to fear with regard to your report, what do you have to fear from further external assessments? I am sure that the scientists who have looked at it were first class, but they were effectively internal because they were part of your scientific advisory committee.

Des Thompson: That is quite normal in peer reviews. It is often extremely difficult to find referees whom we do not know. I should add that as we were producing the report we had a small group of scientists advising on a number of the chapters and on occasion we had a deer science group, which comprised three individuals and was chaired by Andrew Bachell. In preparing the report, we were very careful to ensure that we had scrutiny of the science, but I must emphasise that when we get the report from the James Hutton Institute we will be carrying out a detailed review.

David Stewart: I want to stress for the record that I am not criticising the scientists who were advising you—I am sure that they are first class. I am merely making the point. If you do not advertise, it is very hard to know what is out there. Given that there has been some criticism, with a witness suggesting last week that you look again at this, I suggest that you consider advertising in certain specific areas where you think that might be useful and getting someone who is not in SNH

to give you another view on the matter. I think that that would help with the report's credibility.

Claudia Rowse: I am not sure whether Andrew Bachell wants to come in here, but I should point out that the review ultimately represented SNH's view. We knew that it would; we were asked for our view, and we gave it. I think that that is mainly where the disagreements have arisen, not with the underlying interpretation. As I said, the issue with most of the interpretation of the data is to do with misunderstandings, and I do not think that it would be appropriate to ask for a peer review of something that represents the view of SNH's board. However, I am happy to explain further how we reached that view, because the thread that runs through each of the five key pieces of evidence is the impact on the natural heritage. Nothing that anyone has said has disputed that.

The Convener: We have covered that topic in a good deal of detail, so we will move on.

Kate Forbes: We have already touched briefly on the data sets, but comment has been made that the interpretations do not reflect the evidence. What is your response to the accusation that the report is biased?

Andrew Bachell: I will pick up the general question and let Claudia Rowse speak to some of the detail.

We have brought into the process people in the organisation—an economist, plant ecologists, people who are experienced in deer and so on—who have put at our disposal a raft of skills, and they have all had roles in the review and in monitoring how the work was done. As Des Thompson has already said, we have had the external review; I should point out that all the scientists whom we picked for the advisory panel had to go through the public appointments process. There was therefore that level of external advertising, which we did not mention.

It was important that we brought all those skills into the team that was responsible for bringing the report together. Inevitably, we will make judgments based on the principal functions of SNH as the adviser to the Government on the natural heritage: we would be expected to cover that in more detail than we would cover areas in which we are not expert. If there is a slant in the report towards those areas rather than towards other things, it reflects the brief that we were given and the organisation that SNH is. We would not claim to be experts in those other areas, so I hope that we have not tried to draw unreasonable conclusions.

Claudia Rowse: I thought that you were going to go on to say that it is perceived that there is some bias. Some commentators have picked up that the analysis that flows through the review was not reflected in the conclusions: we seem to have noted many successes in the analysis, but then drawn more negative conclusions. That reflects the fact that we were open. Rather like the group that you have here at committee, our editorial panel included people in SNH who worked very closely on deer management, and others—like me—who came in with a more analytical and robust approach and with a bit more distance from the industry, in order to offer scrutiny and challenge. That is reflected in our management team and on our board.

In terms of the flow, we related the many successes because we were determined that the review would not be seen as criticism of the industry. What we found when we looked at the analysis, particularly of the DMGs, was that there were many successes and that many people are doing the right thing. We wanted to reflect that, but we had to consider the terms of reference—which is where our conclusions came from—which specifically included the impact on the natural heritage. That thread runs through the sections on increasing deer numbers, native woodlands, section 7s, site-condition monitoring and the DMG assessment.

The Convener: I apologise for interrupting Kate Forbes's flow, but this is a really important point. As I recall, one of the accusations that was made was that you put the report together but did not talk to people in your organisation or run it by them. To be absolutely clear, did people including Donald Fraser, who have expertise from the coalface, have sight of the report and offer input on it before it was made public?

Andrew Bachell: Yes—although I think that Donald Fraser should answer that.

Donald Fraser (Scottish Natural Heritage): Inevitably, we were involved in data gathering for the report. We were also involved in some drafting and we saw the report at the end of the process. Obviously, there was an editorial process—the management team saw the report and the board signed it off. The report was seen by the gamut of people in the organisation.

Claudia Rowse: Other colleagues, including our former Deer Commission for Scotland staff, of whom Donald Fraser is one, are represented on our management team and board and were on the senior editorial panel that provided the scrutiny, challenge, examination and balance for the review.

Kate Forbes: There has obviously been a wide variety of responses to the report. Have any relationships been damaged—for example between SNH and the DMGs? How do you see that relationship being strengthened in the future?

Andrew Bachell: I will pick that up. Donald Fraser is closer to the DMGs and may want to add

something. I accept that the report has put strain on relationships. When one says something that is uncomfortable and perhaps not expected, that is bound to be an outcome. It was certainly not SNH's intention to do that, however.

We acknowledge the input that the deer industry has made to the process and we know that there are no solutions that can be found that do not involve it very closely in next steps. We certainly wish to put that on record.

Donald Fraser: We have a generally good relationship with the ADMG. We have good and robust discussions with the groups. We have good involvement with the local deer management groups through our local wildlife management officers and area officers. That relationship remains.

There is no doubt that the report has pointed to areas in which the industry and some deer management groups have to look forward. We must consider what the way forward is and what points need to be addressed. What are the next steps? We need to make sure that staff within our organisation and the DMGs and the people in the lowlands are engaged in the process.

Kate Forbes: Do you have any suggestions or ideas for some next steps to strengthen that relationship?

Donald Fraser: At a practical level, the report highlights areas in which there are weaknesses. For example, more work is required on some of the environmental aspects of deer management planning. In the past couple of years, we have gone through a robust process of developing deer management plans; the important point is that we have now reached the implementation stage. Our staff can benefit the process by working with deer management groups and individuals, including in the lowlands, to identify the next steps. We need to ensure that we are clear about what is being asked for and that there is a clear route for working together, as we move forward.

The Convener: This is not a criticism, as you are perfectly entitled to stand by the report, but if you are saying today that you stand by your conclusions and will not redraw them, it will become very difficult to come together to find a way forward, given that the debate is polarised and the other side of the argument is equally firm. Is that a concern? I am not suggesting that you should admit to something that you do not believe to be the case, but it strikes me that there are two arguments that are at opposite ends of the spectrum.

Andrew Bachell: In a nutshell, that is the issue that is front of us. People come to the issue—I was almost tempted to call it a problem—with different perspectives that are often based on their objectives for the land. Those objectives can be very broad, ranging from purely sporting and commercial interests at one end to purely habitat and conservation interests at the other end.

We try in some of our documents, including "Scotland's Wild Deer: A National Approach" and our good deer management guidelines, to address the fact that people have different objectives, but those documents do not in themselves reconcile the different objectives. The next steps must involve a closer dialogue on setting objectives, and we need to establish a context in which that can be done openly and fairly.

The Convener: Okay. We will move on to research and knowledge exchange, which we touched on briefly earlier.

Emma Harper (South Scotland) (SNP): We have reviewed a lot of evidence in the past few weeks, and we had academics at the committee last week. However, as I learn more about deer management, it seems to me that issues such as immunocontraception or use of porcine products that prevent deer from getting pregnant have not been considered. That would be a less emotive way to deal with urban deer than shooting them. Were any such biological or surgical interventions considered? They were not explored in the report.

Claudia Rowse: The evidence that we reviewed covered the five key data sets. The potential for control of deer through the alternative methods that you mention rather than by culling is an area of future research that would cover issues including how those methods would be applied and what society would feel was tolerable. For example, there have been recent developments in immunocontraception technology, but we did not include immunocontraception in our review of the data sets because there is no information about its use as a control method.

The Convener: Ought SNH to look at those areas on an on-going basis? We heard in evidence to the committee that, instead of fencing everything off, devices could be used to scare deer off and so on. Technology and related approaches are evolving and SNH should, as the agency with responsibility for deer management, surely be on top of those developments.

Des Thompson: I can add to that, and Donald Fraser may want to come in, too. We are considering those aspects—in fact we anticipate presenting for further discussion a paper on immunocontraception at the next meeting of our scientific advisory committee. There are all sorts of issues around the use, applicability and effectiveness of that method. It is one of several techniques that we have been considering, along with a variety of remote sensing techniques for counting deer and techniques for assessing

habitat conditions. We are considering a whole battery of techniques.

12:15

Donald Fraser: I emphasise, as Des Thompson said, that we are considering that issue. We have looked at it in the past because it tends to come up in particular with regard to lowland deer that we are trying to manage in an urban context. However, there are a number of practical, resource and—most important—welfare considerations to take into account when using that type of approach, and there are constraints.

Claudia Beamish: Good afternoon to everybody. I want us to turn our minds to lowland deer management, which is obviously a complex issue on which we have taken a lot of evidence in this and the previous session of Parliament, not least during a visit to the Borders.

I have questions for the panel about the efficacy of the current structures for lowland deer management. I will highlight one or two points that were made in evidence to the committee at its meeting on 22 November 2016. Ian Ross said:

"we do not have a collaborative approach in large areas of lowland Scotland ... That is a challenge that we need to address."

At the same meeting, Eileen Stewart said that SNH is

"making sure that the current patchy performance of local authorities is improved",

and stressed that

"as yet, we do not have a model".—[*Official Report*, *Environment, Climate Change and Land Reform Committee*, 22 November 2016; c 2, 6, 7.]

At the committee meeting on 13 December 2016, Richard Playfair said:

"I would like to think that we promote"

the views of the membership of the lowland deer network Scotland,

"but we do not necessarily know what their views are at any given time."—[*Official Report*, *Environment, Climate Change and Land Reform Committee*, 13 December 2016; c 9.]

The committee would appreciate your comments on those remarks, on where we are now and on the way forward, which would be helpful.

Donald Fraser: I will kick off. On the collaborative approach, we are dealing with a very different context in the lowlands compared to that in the uplands, with a different species of deer and a different land-ownership pattern. Given those two aspects, the collaborative approach that is applicable in the uplands of Scotland might not be—and probably is not—the solution in the lowlands.

There is a duty on public agencies to take account of the code of practice. To be honest, we struggle on engagement with local authorities in terms of deer management, which is down to their resource requirements and priorities. However, they are significant landowners in the lowland areas and we are actively looking at engagement with them. For example, we have sharing good practice events coming up shortly to help local authorities understand better what their duty is in terms of the code of practice and the practical implications of that.

The LDNS is a forum for deer managers and deer management interests in the lowlands, but it is not the equivalent of the deer management group structure in the north. The LDNS is a useful forum for getting information across on, for example, educating the public's attitudes to deer, understanding what the drivers are for deer management in the lowlands and ensuring that we have a broad range of engagement with the different people involved. However, that is a big task and approaches to it need to be developed. For example, a pilot study has started that will look at the levels of public interest in deer in lowland areas, what is currently in place and where the gaps are. There are quite a lot of gaps in our knowledge in that we have good information on censuses and population work in the upland areas but do not have a lot of that information for the lowlands, which contributes to some of the barriers and constraints for deer management.

We have heard from some discussion that there is a problem in the lowlands, but I do not think that we can be clear that there is a problem. However, we must ensure that we are not creating a problem. We have a lot of work going on in habitat management and woodland expansion in lowland areas, which are prime habitats for deer in the future. We need to ensure that we are managing and planning for that.

The Convener: Do you accept that the relationship between SNH, Transport Scotland and Forestry Commission Scotland, and the fact that, as I understand it, you fund the LDNS, might be part of the problem? Is the LDNS more focused on you, as its funders, and your views and needs than on engaging with its members and listening to what might be innovative approaches?

Donald Fraser: I do not think so. I refute the suggestion that that is the structure. Richard Cooke, who is chair of the ADMG, is also chair of the LDNS. There is quite an open forum. The agency funding is there to promote that engagement and discussion. That committee is quite large and has a wide membership with a

wide range of views. It is evolving over time to see how it can better deliver.

The Convener: We have heard suggestions that different approaches and pilot projects need to be developed around making greater use of well-trained recreational stockers, for example. It is clear that we are not getting it right when it comes to urban lowland deer. Do we need to be more open-minded to fresh approaches?

Donald Fraser: Absolutely. The Lowland Deer Network Scotland is one of the forums that we can use in that respect, but there is a range of planning mechanisms out there to look at wider management of the landscape. Even in the lowlands it is really important to understand what the issues are.

Andrew Bachell: When we were commissioned to produce the report, many people were surprised to find that we put a lot of emphasis on the work on the lowland deer issue, because it was not seen as being the big issue. The report has flagged up the fact that it is certainly a part of the big issue.

At the moment, we do not have the answers, although the pilot projects will certainly help us. We are in the infancy of dealing with deer as an asset and a problem in lowland areas—that includes the rural lowlands as well as urban lowland areas. We are open to suggestions about how we can take that part of the work forward.

Claudia Beamish: I have a slight concern when you say that a collaborative approach may not be the way forward. When you think of the complex pattern of land ownership in south Scotland, for example, if people were not able to work together in a more formal structure, I would be concerned about how that work could progress. I also point out that although south Scotland is defined as lowland, there is often an issue because there are some very large landowners with significant estates. Are those landowners involved like landowners have been involved in the good models of deer management groups in the Highlands?

Andrew Bachell: As you suggest, we are not dealing with the same issue across southern Scotland. I tend to think of a large part of southern Scotland as being upland anyway. The land ownership pattern is part of that. However, we estimate that there are tens of thousands of individuals who are responsible for deer management on their land, and that is a very different picture from the relatively small number of responsible individuals in the Highlands.

I do not want to put words into my chairman's mouth, but I do not think that we can adopt the same collaborative approach in both areas. However, it is clear that we have to take a collaborative approach and one of the tricks will be engaging that very big potential audience without burdening ourselves with the bureaucracy of trying to micromanage such a large number of people. There is a genuine issue that we have not resolved there.

Maurice Golden: Thinking about a shared vision of what deer management can achieve, is it clear to deer management groups what they are supposed to achieve on their patch in terms of public interest objectives? Who decides on that?

Claudia Rowse: Donald Fraser will talk about the deer management groups and I will come back on the overarching issue.

Donald Fraser: A lot of work has been done on that. The deer strategy and the deer code, which was published in 2012, helped to distil what the public interest is. SNH did a bit more work to develop the assessment process for deer management groups, which distilled down what the ask is of them. The latest round of the deer management planning process in the uplands has moved us forward in terms of understanding the public interest at the local level. The public interest will have different priorities from Sutherland, to Inverness-shire, to the west. We need to make sure that there is a clear understanding of what the broad public interests are and their importance at the local level. We have gone a long way towards that.

Claudia Rowse: Your question was about the deer management groups. I did not want to detract from that; Donald Fraser was best placed to tell you about the matter. However, there is an issue that I want to mention. As some commentators have picked up—it was picked up as one of the research gaps in the review by Scotland's Rural College—there seems to be a lack of awareness of the high-level vision that is set out in "Scotland's Wild Deer: A National Approach". It is interesting that that was picked up as a research gap, because there is a national policy and a vision, the priorities and the challenges have been set out and an annual action plan is available on a shared website where all partners and stakeholders can inform and interact on what they are doing to progress the priorities and the vision.

It is notable from the research gaps that we obviously need to do more to communicate what the overarching vision is. That is a slightly different matter from the one that you asked about.

Maurice Golden: Do deer management groups have the skills and resources to achieve the public interest objectives? What help, guidance and funding is available to the groups?

Donald Fraser: I would not underestimate the challenge—it is a big one—in delivering the public interest objectives. The resource element—not

only the time and the effort, but the cash going in—is significant in that regard.

The primary mechanism for delivering the public interest objectives is largely through the Scotland rural development programme, some of which is incentivised through other funding schemes. However, what that can deliver is limited, and the priorities are set through the SRDP based on where they can be delivered. There are challenges regarding the resources that are required to deal with the matter, but we also need to be clear about what can be delivered and to what timescale. There are big questions in there, but our planning process has helped to articulate what can be done within the timescales that we are looking at.

Maurice Golden: Has the level of support, particularly funding, remained the same over the period? Have there been any new initiatives? We need to look at what is in the report, as well as what we would have expected to see going forward.

Claudia Rowse: We did not carry out a review of the incentives that are available. I was pleased to hear your question, because it is an essential area that would benefit from further thorough analysis about what is available. We have provided a summary of the SRDP funding, but that is not the full picture.

An area that has been picked up in the research gaps project, through our experience and by the ADMG is that more help is needed to carry out habitat impact assessments. How do we resource and incentivise that in the right way? That question needs further work.

Maurice Golden: Is funding for habitat monitoring available? If so, when does it come online?

Donald Fraser: Funding is available, largely for our designated sites, through the SRDP option. For the wider countryside, there is less opportunity for that support to be delivered.

Andrew Bachell: We were able to inject a small level of funding over the past couple of years to assist with the management planning process.

Des Thompson: It was clear from Professor McCracken's evidence last week on the SRUC's review that more effort and resource needs to go into developing habitat impact assessments, working with deer management groups and members, so that we are much clearer about the adjustments in deer management that are needed in order to meet different objectives. That sounds easy but, on the ground, it is incredibly complex. In his evidence, Professor Albon described what happens when sheep numbers are reduced and how that results in deer having an impact on some habitats.

We should face up to the fact that we are dealing with a complex situation and complex management objectives. If we are going to move matters forward, we need to put resource into training up deer management groups and we need adequate resourcing of monitoring.

12:30

Mark Ruskell: We heard some evidence last week about the rate of delivery of public objectives. The comment was made that public objectives are being set and deer management groups are working to implement them, but that it is still early days. My understanding of your report is that you are calling for a step change in the delivery of public objectives, but not necessarily for a reduction in deer density. How can that delivery be accelerated? Funding is obviously part of it. Given that it is relatively early days for the establishment of the objectives, do you expect a faster rate of delivery at this point?

Des Thompson: That is partly about being clear about the objectives and the sort of management that we need in order to meet them. In itself, that is very challenging, so we have been developing a very important dialogue about that with the deer management groups.

Andrew Bachell: I hope that one of the things that comes out clearly in our report is that, where there are the skills on the ground and a deer management group has the bit between the teeth, it can produce extremely good results over a relatively short time in terms of management planning. We hope and expect that that would be translated into implementation. We know that that model can be made to work.

At the other end of the spectrum of deer management groups, there is next to no delivery of the public objectives—which, again, comes out clearly in the report. We need to look at that and tease out why that is the case; we cannot just go to the groups and blindly criticise them. Is it a capacity, expertise or funding issue? We need to understand from their perspective why they were not able to reach a higher standard so that we can target effort, resource, incentives, support and regulation at the groups that are finding it difficult to move on.

The Convener: That is probably a fairly charitable view, because you have missed out unwillingness from that interpretation. In reality, to what extent is the problem due to the unwillingness of a deer management group or of individual participants in the group to get down to dealing with the objectives?

Andrew Bachell: I will attempt to answer that, but I will put down a marker that you are asking us

to go beyond what the evidence tells us: it was not a behavioural study.

The Convener: I say with respect that you have placed an interpretation on the lack of delivery and you have listed what you think are factors. I suggest that that interpretation might be overly charitable and that there might be other issues at play.

Andrew Bachell: I put on record that this is not an evidence-based answer; it is more of a qualitative answer, from many years of experience.

You are absolutely right that there is a spectrum of objectives and interests: some people are simply not interested in the spectrum of interests that deer represent, but are focused on one or two outcomes. One might argue that that is reasonable from their perspective, but from the public interest perspective, it will no longer do. From the natural heritage perspective, which is the direction that we come from, our conclusion—which we stand by—is that we do not have evidence that those groups will move forward entirely willingly. That is why we need to establish all the reasons why groups might not move forward before we target those that—to be less charitable—do not want to do so.

The Convener: It is useful to get that on the record.

Jenny Gilruth: On deer counts and trends, there was a bit of debate about the total deer number last week. The report puts it at somewhere between 360,000 and 400,000—there is quite a difference between those two numbers. Last week, the panel members were keen to emphasise the importance of trends as opposed to the total number. Will the work with the James Hutton Institute provide a more accurate and reliable number?

There was also a suggestion last week that local counts should be conducted every five years in order to provide more accurate and up-to-date readings. Would you agree with that?

Des Thompson: I agree on both points: I was here last week to hear that evidence. The James Hutton Institute has done an excellent job and its reporting on trends is superb. We look forward to finding out what is driving differences in trends around the country—the institute mentions sheep densities and changes in climate.

It would be very helpful to have a deer population estimate—indeed, there is a statutory requirement on us to have that—but it is much more important to understand the variations in trends across the country and the impacts of those trends on natural heritage interests, which is what we are heading towards.

Donald Fraser: Historically, the Red Deer Commission did a rolling programme of counts, which went round the country every five or six years, so fairly up-to-date data was available. On priorities, in the early 2000s, a conscious decision was taken to focus our count programme more on designated sites, due to the need to deliver on the "favourable condition" targets.

Over the past two or three years, we have gone back to a policy of trying in our count programme to get round the deer management groups. We put quite a lot of resource into that to support the deer management groups—it is an expensive process. Deer counts and deer census information are important parts of the current deer management planning round. We hope that, going forward, we will be in a better position in that we may still have an SNH count programme and the deer management group counts. Those will come on board, so that stream can continue.

The Convener: It could be argued that in order to amass a baseline and a reliable set of data you could focus your resources in the areas that do not have deer management groups so that we get a better picture, if we could get the DMGs to do what Jenny Gilruth suggested. That is not a criticism of your approach; it is just an observation.

Andrew Bachell: Our current approach is a reflection of a fairly long-standing good relationship with the deer management groups, which the Deer Commission and then SNH have supported. Whether it is the best use of a public resource to count in those are is open to question, given that we have now opened up the issue of deer across the whole of Scotland; there are probably bigger unknowns in relation to deer numbers and impacts in the lowlands. It is a very good question that we will need to address.

Now is maybe not the moment to put this point on the record but SNH resource is obviously finite, so, given the current resource base, we may have to tackle all those issues sequentially, because dealing with them all at the same time would stretch us very severely.

The Convener: Alexander Burnett wants to come in with a question, but I first want to develop the resource theme. A number of witnesses have commented on SNH's ability, from financial and staffing points of view, to meet its responsibilities. Let us pretend that the meeting is not being filmed and that there is no *Official Report*—although I realise that that is stretching the imagination. I accept that you are funded by the Scottish Government, but are you sufficiently well resourced to oversee the kind of deer management that we need?

Claudia Rowse: I apologise if this is a bit of a circular answer, but that will depend on what the

Scottish Government wants us to do. The Government will set out what we need to do, and we will do it. We are currently being asked to support the deer management groups with their plans, which is what we have done. We are setting out the counts. If, as a result of the review, the feeling is that the pace of change needs to be speeded up—which is what some of the questions have been about—and that requires us to do more work, there will be greater demand on our resources.

The Convener: I want to bring in Dave Stewart, but let me develop something that came out in evidence. What you are saying is what we have been told before—basically, that you have the resource to do what you are doing, but it would be challenging if there were more policy demands. I absolutely get that, but some evidence suggested that SNH went to the DMGs and said that work was coming down the track that you could not afford to do because of cuts, so the DMGs must put their hands in their pockets, to the tune of £65,000. That suggests to me that you are not sufficiently well resourced to do what you are doing now.

Andrew Bachell: Donald Fraser might want to get into specifics on that in a moment.

You ask me to assume that there is no *Official Report*. I am sorry, but I cannot do that—I can say only what I am happy to say on the record. SNH is asked to do an enormous range of things. Today, we are talking about deer, but we could be talking about other species that are, one way or another, an issue, even within the uplands. We could be looking at the marine environment and monitoring, access and recreation and so on.

Our remit is extremely broad, but our budget has gone down by 30 per cent in the past six years. It is therefore impossible for us to do everything that we used to do—or that we and the Deer Commission for Scotland used to do—so we have had to cut our cloth accordingly. As a result, we no longer do as much monitoring; our monitoring programme is more spaced out than it used to be, and we cannot be on the ground to support every action that people are taking or to give advice as we used to because we do not have as many people to do that.

I am therefore bound to say that if more is being asked of SNH, it will be a case of making choices, as Claudia Rowse was saying. If we are given clear priorities, we will make our choices accordingly. I think that my chief executive and chairman were in front of the committee not long ago, and they probably made the point that we can do only so much and we have to look to Government to give us advice—or, in fact, instruction—on what is most important.

David Stewart: The convener has touched on some of the areas that I was going to go into, but going back into history, I think that you mentioned the amalgamation of the Deer Commission for Scotland and SNH, which happened six years ago. Of course, an extra objective was added, on sustainable deer management, so you have more to do. I do not think that you will necessarily have these figures in your head, but how do your current staffing figures compare with those of the Red Deer Commission and the Deer Commission for Scotland? Partly to answer my own question, I note that, as you will know, we received evidence from Alex Hogg, who said that out of 500 staff,

"only 12 ... deal"

exclusively

"with deer ... Staff who work with deer are underrepresented."—[*Official Report*, *Environment, Climate Change and Land Reform Committee*, 13 December 2016; c 38.]

We have done another check, through DCS, and we make the figure to be around 17 staff, if we take out administration and information technology. That does not seem to me to be a lot. Roughly, how do staff numbers compare with the numbers in the Red Deer Commission and the Deer Commission for Scotland? I believe that Donald Fraser worked for both organisations, but he might not have the figures in his head.

Andrew Bachell: If Donald Fraser has the figures, we will give them to you, otherwise we might have to supply them separately.

Donald Fraser: I do not have the figures with me, but part of the reason for merging the DCS and SNH was to make efficiencies. That needs to be taken into account, so as far as some of the senior staff and certainly some of the support staff are concerned, there will not be a straight read-across. However, with regard to technical staff, the staff complement in the Deer Commission for Scotland transferred to SNH, and we have lost a number of those staff through wastage—retirements and the rest of it—with some people not being replaced.

We have looked to deliver our approach to deer management through the seven SNH areas, which means that the staff resource for dealing with deer management has increased substantially as a result of the merger. Over the past five years, there has been an on-going programme to transfer skills and knowledge in that regard. As a result, the potential staff resource is significantly greater than it was with the Deer Commission for Scotland.

David Stewart: I wonder whether, with the convener's agreement, you can send us the figures from the days of the Red Deer Commission and the Deer Commission for Scotland. It would

be useful to compare and contrast them, bearing in mind that you now have extra objectives to deal with.

Another question that it would be useful for you to answer is whether you require not just extra staff but extra powers to meet your objectives.

Claudia Rowse: That brings us to some of the next steps. Again, we did not look in our review at how the existing powers are operating. We are talking about quite a complex suite of powers, some of which, as you know, we have not used. We will probably have been emboldened by the process that we have gone through here to use some of our powers in future. As far as this issue is concerned, it would benefit from a further careful look at the existing suite of powers and the new powers that have been given to us through the Land Reform (Scotland) Act 2016, and from a bit more analysis of how all that might be streamlined and whether the powers are sufficient. We have not yet done that piece of work.

David Stewart: So it is a case of use them or lose them.

Claudia Rowse: I cannot answer the question whether we need additional powers until we have had a proper look at the issue and spoken to different practitioners about what the impact might be and how that might be approached.

David Stewart: Finally, it is useful to look at best practice in other countries, and Norway is often quoted in that respect. Is the funding method for deer management in that country attractive to SNH? Do you think that it represents best practice that we can look at and incorporate in Scotland?

Des Thompson: Yes, to a certain extent. For example, we heard from Duncan Halley about the centralising of record keeping in relation to the weights of culled stags and some other information. A number of us have worked with people in the Norwegian Institute for Nature Research and the other Norwegian authorities. There is a lot that we can learn from them, and we have a good working relationship with Duncan Halley and other colleagues. We are always open to suggestions about how we can improve things, and we try to do that.

12:45

The Convener: That raises a question around an issue that you touched on earlier. The report is a review of where we are at, but I am interested in the work that you do on a daily basis to develop possible future policy to draw to the attention of the Scottish Government. As you have just noted, it is possible that other countries are doing things better. What work is going on, away from what we are discussing today, to inform the approach to deer management?

Des Thompson: We have been out to Norway to share the work on habitat impact assessments that we are doing in Scotland and help people to develop techniques. Through such visits, we pick up a lot of important additional information about the approaches that are being used elsewhere. For example, we have learned a lot about remote sensing for assessing vegetation cover, as well as information about counting deer.

The Convener: Earlier, in response to Emma Harper's question, you mentioned some other work that you doing. What is the process around deer management? Do you instigate pieces of work and pull the ideas together and then take that to the Government? How are we going to progress the deer management regime?

Donald Fraser: The question goes back to the deer strategy and the action plan that comes from it, which is the driver for the work that we undertake in partnership with other organisations. That sets the basis for the work programmes that we are engaged in. There is on-going work that has been done over the past number of years, but the work programme also looks at the more innovative work that we need to do in the uplands and, more importantly, in the lowlands. The action plan is a clear driver in that regard.

Alexander Burnett: I refer to my entry about deer management in the register of members' interests.

Based on previous discussions that we have had, there appears to be a consensus that the impact of grazing is more important that the densities of deer. How would you respond to criticism that the report associates environmental impact too much with deer and too little with other herbivores?

Claudia Rowse: I picked up on some misunderstandings and misinterpretation of the data sets, which we acknowledge are complex. Some of the issues relate to the impacts of woodlands—I touched on that earlier, so I will not repeat what I said.

We also acknowledge that it is difficult, on the ground, to distinguish between the impact of sheep and the impact of deer, without recourse to other evidence. However, when I was preparing for today's evidence session, I spoke to Donald Fraser about the experiences at places such as Caenlochan. We know that there are 200 sheep there and many thousands of deer. There are ways of distinguishing herbivore impacts when we know what the counts or stocking levels are. SRUC noted that there are research gaps in that area and said that surveyors might need further information to help them to assess the difference

between types of herbivore impact. However, in the case of the native woodland survey, the surveyors managed to make that distinction in most cases—as I said, they attributed 73 per cent of the impact to deer and 15 per cent to livestock, which is quite a significant difference.

Des Thompson: We are very careful about that matter. If we are not sure or there is any doubt, we say so. However, if we find deer pellets and other evidence of deer grazing and browsing, we attribute the damage to deer.

The Convener: Is there a suspicion that some of the criticism around that might relate to the section 8 issue, whereby you have to be able to prove beyond any and all reasonable doubt that the impacts are caused only by deer before you can pursue a section 8 solution? Is there any element of muddying the waters around the issue?

Andrew Bachell: I was going to come to that point to link the evidence to the powers. In the past—SNH will have to take this criticism on the chin—we perhaps have not used those powers or pushed the use of those powers as quickly as we might have done. However, our hand has sometimes been stayed by threats that our evidence base is not good enough and that therefore there would be a challenge. Using the powers would be very expensive to follow through on. They are not a one-off fix; if we go into a section 8 we are probably in for the long haul; we are not in today and out tomorrow. For all those reasons, particularly the issue of the firmness of the evidence, we have been less willing to take a risk with the use of the legislation than perhaps we will be tomorrow.

Alexander Burnett: To return to scrutiny of the report, you said that SRUC will pick up on some of the impact on herbivores. Is one of the reasons that that has not been picked up on that the expert who reviewed the report does not have previous experience of deer or other herbivores?

Des Thompson: No, because other experts were involved in producing the report. There has been no shortage of experts advising on it. Indeed, we have been in dialogue with SRUC while it has been producing its report. Davy McCracken, who was at a previous meeting of yours, is on the expert panel of our scientific advisory committee. That is not an issue.

Angus MacDonald (Falkirk East) (SNP): We have spoken about the situation in Norway and we have covered issues relating to deer management. Dr Duncan Halley said in his submission that the Norwegian system

"has been effective in managing the resource at sustainable levels"

and

"is uncontroversial and has broad public support".

You said that you have picked up some ideas from visiting Norway. Is it fair to say that Norway has got it right and we have not? What other aspects can we take on board?

Des Thompson: I would not want to say that we have not got it right. From what we can see on the ground in Norway, and from talking to the experts out there, Norway has a system that works extremely well. I heard what Duncan Halley said and it absolutely mirrored my own understanding. However, perhaps Norway has a less complex situation, in terms of land ownership and management, than we have in Scotland.

Andrew Bachell: I make the same point. We cannot look for a single solution that will work in Sutherland and Galloway, let alone one that will also work in the central belt. The Norwegian model might work for part of Scotland but not other parts. We also have to acknowledge that not only is Norway's land ownership model very different but, in the previous century, Norway experienced much more extreme see-sawing in its rural economy, in terms of agriculture, than we did. Both things played a part in the evolution of its system. In Scotland, we need to evolve our own system, which learns from the best experience across Europe.

Angus MacDonald: To be fair, Dr Halley stressed that in his evidence last week.

Maurice Golden: There has obviously been a lot of criticism of the report from stakeholders, and we have covered a lot of that today. Looking to the future, what is the way forward in linking with stakeholders to achieve the Scottish Government's objectives?

Andrew Bachell: We have a number of next steps in mind. This is probably a good moment for Claudia Rowse to say one or two things about them.

Claudia Rowse: The committee has highlighted the criticisms, as have we, but I would like to add that quite a few commentators—not just us—have said that the review was comprehensive and robust.

During this discussion we have touched on many of the next steps. The review stimulated discussion about where next steps might lead, and there is an obvious area around on-going progress, monitoring of the deer management groups' plans and the implementation of those plans.

Something needs doing in relation to taking forward work in the Lowlands—we have discussed some of the issues in that regard. There is no obvious and agreed solution, and further work is

needed to ensure that we do the most effective thing for the situation in Scotland.

The other area that has attracted quite a lot of debate and suggestion from various commentators is the need to do more on setting cull targets. However, it is not clear—and it is certainly not agreed—that such an approach is needed. What would it achieve? If it is needed, what would be the most effective way of doing it?

It would be useful to have more time, to ensure that we make the right decisions, rather than rush into things. Those are three areas that have cropped up in the discussions that you have heard, and you are welcome to give us your own thoughts.

Convener, you mentioned that other deer management work is going on outside the scope of the review. We very much want to reiterate today that the wild deer national approach is in place. It sets out the priorities and challenges for this five-year period, it is a 20-year vision and there is an annual action plan with indicators on which we are currently reporting. That is on-going work, which has not been stimulated as a result of the review.

The Convener: I thank the panel for your attendance and evidence, which has been most useful.

At its next meeting, which will take place on 31 January, the committee will take evidence from stakeholders on the Scottish Government's draft climate change plan. It will also consider petition PE1615, on state-regulated licensing of game bird hunting in Scotland, and a review of PE1601, on European beavers in Scotland.

12:56

Meeting continued in private until 13:05.

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