OFFICIAL REPORT
AITHISG OIFIGEIL

Rural Economy and Connectivity Committee

Wednesday 20 January 2021

Session 5

The Scottish Parliament
Pàrlamaid na h-Alba

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RURAL ECONOMY AND CONNECTIVITY COMMITTEE

2nd Meeting 2021, Session 5

CONVENER

*Edward Mountain (Highlands and Islands) (Con)

DEPUTY CONVENER

*Maureen Watt (Aberdeen South and North Kincardine) (SNP)

COMMITTEE MEMBERS

*Peter Chapman (North East Scotland) (Con)
*John Finnie (Highlands and Islands) (Green)
Jamie Halcro Johnston (Highlands and Islands) (Con)
*Emma Harper (South Scotland) (SNP)
Richard Lyle (Uddingston and Bellshill) (SNP)
*Angus MacDonald (Falkirk East) (SNP)
*Mike Rumbles (North East Scotland) (LD)
*Colin Smyth (South Scotland) (Lab)
*Stewart Stevenson (Banffshire and Buchan Coast) (SNP)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Professor Keith Bell (Climate Change Committee)
Finlay Carson (Galloway and West Dumfries) (Con) (Committee Substitute)
Christine Grahame (Midlothian South, Tweeddale and Lauderdale) (SNP) (Committee Substitute)
Chris Stark (Climate Change Committee)

CLERK TO THE COMMITTEE

Steve Farrell

LOCATION

Virtual Meeting

Scottish Parliament

Rural Economy and Connectivity Committee

Wednesday 20 January 2021

[The Convener opened the meeting at 09:30]

Climate Change Plan

The Convener (Edward Mountain): Good morning everyone, and welcome to the committee's second meeting in 2021. I ask everyone to make sure that their mobile phones are on silent. The meeting will be conducted in a virtual format. We have received apologies from Richard Lyle and Jamie Halcro Johnston. Christine Grahame and Finlay Carson are attending as their substitutes.

Finlay Carson has not attended the committee before, so I ask him to declare any relevant interests.

Finlay Carson (Galloway and West Dumfries) (Con): I declare an interest as a member of NFU Scotland and as the owner of a small piece of land.

The Convener: Thank you. Other members also wish to declare interests. I am a member of a farming partnership in Moray.

Stewart Stevenson (Banffshire and Buchan Coast) (SNP): I am the joint owner of a small registered agricultural holding, from which I derive no income.

Peter Chapman (North East Scotland) (Con): I am a member of a farming partnership in the north-east of Scotland.

The Convener: Our first agenda item is an evidence session on the climate change plan update, with witnesses from the United Kingdom Climate Change Committee. The session is part of a series of sessions that the committee is undertaking to inform our response to the update.

I welcome the chief executive of the Climate Change Committee, Chris Stark, and Professor Keith Bell, a member of the Climate Change Committee and its Scotland champion. Chris Stark has a brief opening statement.

Chris Stark (Climate Change Committee): It is a real pleasure to be with you. Keith Bell and I represent the CCC, for which we both work. The CCC has looked extensively at the opportunities for cutting emissions in Scotland, and we are pleased to see an update to the climate change plan from the Scottish ministers.

This morning, we will be dealing with agriculture, forestry and transport, I hope, and it is fair to say that the plan is a bit of a mixed bag when it comes to those topics. There has been really good progress on the plans for forestry; the transport plans look very much like they are coming together; and there is probably less progress on agriculture. I hope this morning to be able to get into that stuff.

Overall, the plan's ambition is now moving up towards what we will need for Scotland to reach net zero by 2045. In the Climate Change Committee, we have made recommendations on how Scotland can achieve that outcome. My main point is that, although we are confident about a path for Scotland to get to net zero by 2045 that meets the interim target for 2040, the 2030 target is particularly difficult. That target, which has been set by Parliament, is to cut emissions in Scotland by 75 per cent from their 1990 level by 2030. That is a very difficult target to meet. In our most recent advice, looking at the UK as a whole, we have said that we do not have in our scenarios a path that meets that target without departing from some of the key principles of our own work—for example, not stranding assets and not moving too far away from the UK path as a whole.

It is worth saying at the outset that many of the issues that we might discuss this morning are made difficult by how stringent the target for 2030 is. It looks as though some of the ambitions in the Scottish Government's climate change plan update are heavily influenced by the need to meet that target over the next 10 years.

The Convener: Thank you. I hope that those will, indeed, be the topics that we will tackle today.

The first questions are from Colin Smyth.

Colin Smyth (South Scotland) (Lab): I will kick off on transport emissions, which is one of the topics that Chris Stark mentioned. We know that transport is Scotland's largest source of greenhouse gas emissions. The CCC's report to the Parliament highlights:

> "The current trend on transport emissions is off-track for meeting Scotland's interim emissions reduction targets and net zero".

Why is that the case? What immediate action is needed to bring transport emissions back on track?

The Convener: I think that those questions are for Chris Stark. To clarify, I ask members to indicate whom they would like to answer their question. If one of the witnesses does not want to answer the question, they should pass it to their colleague. I will try to minimise my input.

Chris Stark: Lovely.

I have a few opening points, and I am sure that Keith Bell will want to contribute, too. I very much agree with the premise of Colin Smyth's question. Transport is the biggest sector for Scottish emissions, accounting for nearly a third of total Scottish emissions. That is a bigger proportion than the figure for transport sector emissions in the UK as a whole, so transport is a big and important issue in relation to Scottish emissions and tackling climate change.

Progress in cutting transport emissions has been very slow. There has been hardly any change at all recently. That is mainly because of the extent of road travel in Scotland, particularly through use of cars. It is important to say that there is a lot that we can do to tackle that, and the overall policy outcomes that are spelled out in the climate change plan update look right to me.

In particular, the phase-out of the need for petrol and diesel cars and vans by 2030 now matches the new UK ambition, which the Prime Minister announced just last year. Bringing forward the date by which we will stop the sale of petrol and diesel cars to 2030 will have a big impact on transport emissions over time.

Of course, we expect there to be an impact before 2030. We will have stopped 100 per cent of sales of petrol and diesel cars and switched to, probably, electric cars by 2030 or thereabouts, and we will see progress towards that over the next decade. In our assessment, there will be quite rapid progress towards the second half of the decade, which will have an impact in Scotland.

There are some key conditions to allow that progress to take place—not least, the need for charging infrastructure to allow vehicles to be charged on Scottish roads. There are lots of challenges in that regard in Scottish towns and cities.

An outcome that goes with that is the need to address our general reliance on cars. The new policy target in the climate change plan update to reduce car kilometres by 20 per cent by 2030 is important and testing. That is, of course, not just a climate policy; it will deal with a set of other issues. It is encouraging to see such a target, and I have lots to say about how we could achieve it.

Those are the right kinds of targets to drive progress over time. The question in my mind is whether we have the policies in place to meet the new objectives in the climate change plan.

Professor Keith Bell (Climate Change Committee): I second what Chris Stark has said. As we have noted, it has been a challenge to get emissions down over the past few years. Emissions from the transport sector have pretty much gone up since about 2013, although there was a slight reduction in the last year for which we have data. The number of vehicle kilometres is still high. There is an increased use of SUVs—sport utility vehicles—which means that the emissions per kilometre tend to be a bit higher than they would otherwise be, although SUVs are still only a proportion of the vehicle fleet.

I second Chris Stark's comment on the ambition to reduce the number of vehicle kilometres by 20 per cent. It remains to be seen what the package of policies is that would allow that to happen and whether we could be confident that it would really deliver, but it is the right kind of ambition. How many of those kilometres are going to be driven by ultra-low emission vehicles, and how many will be driven by petrol and diesel vehicles of the sort that are still on the road?

Cars are only part of the picture. The other part of transport emissions comes from light and heavy goods vehicles, ferries and air travel. There is some uncertainty about exactly how people will engage with the need to travel as we come out of the pandemic. Confidence in public transport needs to be re-established. There are lots of measures in the climate change plan update to do with public transport, including bus prioritisation. It remains to be seen how successful those measures will be in attracting people to use those means of travel.

The idea of the 20-minute neighbourhood is really attractive. Again, what is the package of policies that will enable that? It is about reducing the need for travel, so that those who must travel for work or other reasons can do so. Unnecessary travel would be reduced because people could access services locally. However, long-distance travel for leisure is still a large part of the picture, so what is the whole package around that aspect? On a UK level, there is silence on that.

Chris Stark also touched on electric vehicles and creating a situation where there is no need for new petrol and diesel cars. People need to be encouraged on that front. I suppose that there is only a certain amount that the Scottish Government can do with regard to the charging structure. The facilitation of that depends on the regulated electricity network companies, which are subject to regulation by the Office of Gas and Electricity Markets, whose remit is set by the UK Government.

Colin Smyth: There is lots of discussion of electric vehicles but, leaving that aside, why has there been no modal shift in transport in recent years, on the basis of the current policies? I am talking about a shift away from the car to walking, cycling and public transport. What have we failed to do in the past decade to get that modal shift? Are we not investing enough in active travel, or are we investing in the wrong type of cycling infrastructure? What has the Government been

doing wrong in the past decade to get to the point where transport is the biggest emitter of carbon dioxide? I am particularly looking at walking, cycling and public transport, rather than car use.

Professor Bell: I have not done a systematic assessment of that; I would depend on colleagues who have researched that area specifically. My personal, anecdotal experience, as someone who lives in Glasgow, is that it is just not joined up. We see cycle lanes developed that run for a few hundred yards and then fizzle out. The encouragement of people to cycle and to feel safe in doing so is just not there. Of course, the weather is not good all year round, but people will do it if they feel safe. That is a really important factor.

We have touched on public transport already. People do not to feel confident about it. Even before the pandemic, there were lots of criticisms of public transport to do with the quality of service, particularly reliability. Based on my personal experience, I am not sure that things have added up to something in which people can have confidence.

There are other factors, such as where people work and what sort of neighbourhood they live in. It is a complex picture that is connected with other aspects of urban and suburban planning. There is a different set of issues in rural areas, but to deal with the biggest emitting aspects of travel, we are looking at urban areas and the modal shifts that you have been talking about.

The Convener: Does Chris Stark want to come in briefly? We will then need to move on to another set of questions.

Chris Stark: Yes, I will add to that. The issue just has not been a priority in the way that other aspects of transport have been. We have talked about the idea of a modal shift to active travel and public transport for a long time, notably in climate change plans. However, I struggle to see that as a central objective of the Scottish transport strategy.

09:45

I get the sense that the position is shifting, which is all to the good. I think that our experience of the various lockdowns that have been imposed over the past 12 months—gosh, it is nearly a year now—will drive further progress towards active travel in the long term. I am less sure that it will drive progress towards public transport provision.

Cutting car miles—and the big target of cutting them by a fifth by 2030, which is a really important overall target—will not happen just by making the alternatives look a bit nicer. We in this country love private car travel for all sorts of obvious and perfectly good reasons, so moving people away from that and increasing car occupancy will be a big challenge.

A set of societal and technological shifts are taking place, especially the move to home working, that might present an opportunity for more of that move towards active travel, in particular. I was pleased to see that much more embedded in the objectives in the transport section of the plan. I love the idea of 20-minute neighbourhoods—like Keith Bell, I think that that is great—and also free bus travel for under-19s.

The active freeway policy is the other thing that I would highlight. Although I am disappointed to see an American term creeping into transport policy in Scotland, it is a good policy overall. At heart, that modal shift was never a primary objective for transport policy as a whole but I think that the shift is happening.

Maureen Watt (Aberdeen South and North Kincardine) (SNP): Good morning, panel. You have already mentioned the target date for ending the sale of combustion engine vehicles—the rest of the UK has come into line with Scotland on that. In your view, should the ban also apply to hybrid vehicles from 2030?

Chris Stark: The short answer is yes, I think that it should. By 2030, I think that hybrid vehicles will be a rather unappealing proposition in any case. The UK-wide proposal, which is now policy, is for a ban on the sale of petrol and diesel cars from 2030, but there is an extra five years for hybrid vehicles. Hybrid vehicles will need to be quite a niche thing, in our assessment, if we are to meet the targets for the whole UK and for Scotland. That is an unnecessary delay and, as I said, hybrid vehicles will be unappealing. In general, a hybrid vehicle has two means of propulsion, which makes it a heavier vehicle. Therefore, it tends to have much poorer fuel efficiency when it uses fossil fuels—petrol or diesel—to propel itself. I think that we should move straight towards 100 per cent battery electric vehicles from 2030 onwards. That is a better outcome for all sorts of reasons. It is better for air quality, as well as for the climate.

Maureen Watt: As a farmer's daughter, I find it difficult to believe that we will be able to persuade farmers that an electric vehicle will pull their trailer, for example. There is a lot still to be done on that.

Coupled with that is the issue of the roll-out of electric vehicle charging infrastructure. I understand that Scotland is quite far ahead on that, but it is clear that the public are not yet convinced of it. For example, we do not see large numbers of electrical vehicle charging points—if, indeed, we see any—at petrol stations. What can we learn from countries—Norway, for example—

that have a far higher uptake of electrical vehicles? Who wants to take that question?

The Convener: Let us try Keith Bell to start with.

Professor Bell: Maureen Watt raises important points. Of course, different vehicles have different characteristics and are used for different purposes. Challenges remain for those that are used for heavier loads. We need to better understand and then develop the right technologies for those vehicles. That category includes various off-road vehicles, which I guess might include tractors. Electric vehicles actually have extremely good torque, so they are not without their advantages. However, the level of energy that people might try to carry in a battery is another issue, depending on journey times and the opportunities for recharging.

That ties in with the other main issue that Maureen Watt raised, which is that we must be able to have confidence in the charging network. People who have electric vehicles change their attitudes if they have good experiences with them and have confidence in being able to access charging facilities, of which there are faster and slower forms available. Sometimes people will need fast charging, such as when they are out on longer journeys or are using more energy within a shorter duration. More options in that area will arrive, provided that we create the right regulatory and commercial framework to incentivise provision and identify the right parties to deliver it.

There are lessons to be learned from the experience of Norway, where, as Maureen Watt mentioned, the uptake of electric vehicles has been excellent. That is largely because of the tax policy there. However, it still has issues around the provision of charging facilities and ensuring that they are well maintained.

The sector is still relatively new, but I am confident that lessons will be learned and that uptake here will improve, which, in turn, will enhance confidence across the rest of the population. However, if we do not get on and learn by doing, we will never get to that position. Therefore we really must grasp the fact that we need to have confidence in our approach and just get on and do it. Not everything will be done perfectly at the beginning, but we must just learn as quickly as possible from the points at which snags arise.

Chris Stark might wish to add to what I have said.

The Convener: Before I go back to Maureen Watt, we have a few supplementary questions, and Chris Stark also wants to come in.

Mike Rumbles (North East Scotland) (LD): My question is for Professor Bell. We know that tackling climate change is all about international co-operation, and Maureen Watt has mentioned Norway's experience with electric vehicles. I have a lot of experience of travelling in Italy, where they have gone for gas instead of electricity. Whenever I fly and drive to Italy I always ask for a gas-powered vehicle, because they have tremendous infrastructure for that throughout the country and the fuel is much cheaper. I have always wanted to know why countries such as Italy have gone down the gas route, which appeals to drivers because it is cheap and there is huge infrastructure for it, yet we have gone for electric vehicles, for which the infrastructure is still not there, despite marvellous attempts, and there are problems with the range of vehicles that are available.

Professor Bell: It is a couple of years since I was last in Italy, but from what I can recall they started going for liquefied petroleum gas a few years ago. I do not recall what their motivation for that was—whether they happened to have access to appropriate facilities, or whether the price that they were paying for conventional petroleum or diesel was high. However, gas is still a fossil fuel. In the short term, using it might be cheaper for an individual car user, depending on the taxation regime that applies. However, such infrastructure is likely to become stranded, because the country will have to go to zero emissions rather than low emissions. Therefore we might be in a better position. We will skip that stage and go straight for electricity with a decarbonised source, whereas Italy might have to go through two stages before still getting to where we will end up.

The Convener: Does Chris Stark want to come in on that?

Chris Stark: Yes, I have a few points. Keith Bell made the central point that ultimately we need to fully decarbonise the transport system. Italy has made a transition step, but it will have to go all the way in the end. Looking at global trends in the automotive sector, everything points towards battery electric. Every major automotive firm now is moving its production lines towards that outcome. It is amazing to say that, because we were not talking that way just a few years ago.

The reason that that is happening is because an enormous disruption is taking place in the energy sector, with increasingly cheaper power coming from renewables and increasingly cheaper batteries. Bringing those two aspects together creates an enormous new pricing incentive to move to battery electric vehicles. Those vehicles have been around for a long time, but the technology has also been developing. There is therefore now big disruption globally in the energy sector and the automotive sector.

The battery electric cars being produced today have a very long range of hundreds of miles. They can go up to 300 miles, but some vehicles can do even more. That is the kind of range that we would easily get from a petrol car. It is right to say that we do not have all the charging infrastructure in place for rapid charging across the country, but Scotland is in a better position on rapid charging than other parts of the UK.

There is also the issue of convenience. We all have power in our own homes, so charging a vehicle at home is more convenient in many ways than taking it to the petrol station. I am not suggesting that the change to battery electric vehicles will be easy, but the move to those vehicles is, in principle, a better thing all round. Although it is a change to how we use cars and the lifestyles that go with them, it is not a huge change and it also comes with lots of benefits.

A point that I wanted to make earlier is that although 2030 is the date for the phase-out of sales of petrol and diesel vehicles, I would expect them to still be on the roads for some time after that. That date is the point by which new sales of those vehicles will have stopped. In our modelling, the average time for a petrol or diesel car to be on the road is something like 15 years, so we can expect those vehicles to still be on the road for another 14 or 15 years after 2030 and probably longer than that.

We are talking about a gradual move towards a fully decarbonised transport system. To my mind, the changes that Italy has made will add extra time to the transition period and probably inconvenience motorists in Italy in the end.

Peter Chapman: We have been discussing battery electric for most of the meeting, but we have not mentioned hydrogen power, which I think has a role to play, particularly for heavier vehicles. How will battery electric work for a 40-tonne lorry going from here to the Channel ports, for example? I think that hydrogen has a huge role to play in that regard. I am just throwing that into the mix and asking for a comment on where the experts see hydrogen playing a role.

Chris Stark: I tend to agree with that view. We have come to the same conclusion in our modelling. That is not to say that battery electric vehicles for heavy goods will not work. There is certainly lots of interest in producing them. For example, Tesla and others are considering how they might construct a battery electric heavy goods vehicle. However, hydrogen has lots of advantages for larger vehicles because, in principle, they can be filled up much more quickly than vehicles with a large battery can.

The other point to make about heavy goods vehicles is around the hydrogen refuelling infrastructure. If we used that for light vehicles, it would be an enormous challenge to have that refuelling infrastructure right across the country. It is much less of a challenge for heavy goods vehicles, because the hydrogen refuelling infrastructure would be at the depots where the vehicles are stocked up and sent out on the road.

Hydrogen is potentially the right option for heavy goods vehicles, but I suspect that we will not be able to take the decision about that alone. We might well have an outlook in Scotland or the UK on what needs to happen to HGVs, but it ultimately needs to be attached to the strategy on the continent because trucks make long journeys across Europe, and that will continue post Brexit. The European plan for decarbonising heavy goods transport therefore needs to be unified. The plan might be for hydrogen or battery electric, but there are alternatives in the middle. Power lines running over motorways, for example, is an alternative.

We will have to start resolving those issues in the next few years, but there is much less of an issue for battery electric light vehicles. The market is now pointing us towards that as the right outcome.

10:00

Maureen Watt: Hydrogen was one of the subjects that I wanted to raise but, on the back of what Peter Chapman said, I note that AREG, the Aberdeen Renewable Energy Group, is looking to roll out hydrogen stations throughout the north-east and the Highlands. Hydrogen is one of the possibilities for rail where there is no electrification, although ScotRail might think that battery-operated trains are more of a possibility on those routes. Hydrogen is certainly being considered for rural areas.

We are the rural economy committee and, with the best will in the world, there is not a large public transport infrastructure, so it will be more difficult to have the 20-minute neighbourhood in rural areas. As you know, the Scottish Government is committed to linking up all the cities with dualled roads, particularly the A9 and A96. It is important that more rural areas do not feel left out. We are still going to have cars and lorries on the road, although they might be battery operated. Is the ambition or commitment to dual the A9 and the A96 compatible with meeting emissions reduction targets, in your view?

Professor Bell: Funnily enough, Chris Stark and I were just discussing that particular policy point. That encompasses policy issues beyond climate change. I know that there have been safety issues on the A9 in particular.

The issue is not just one of enabling goods, services and people getting in and out of the areas

concerned. Many areas depend on tourism and easy access. There is a multiplicity of issues.

As I understand it, this has been a really important step forward in Scottish Government thinking in the past couple of years, and it was not always there before. Transport policy is not seen on its own, in isolation; it is joined up with considerations about energy access, climate change, health, housing, access to education and so on. Transport policy must be seen in the round.

There might well be strong arguments for particular road developments but, when it comes to road development as a whole, it must be understood that, in general, past experience across different types of location has been that new roads generate more traffic. Road developments must be well targeted. Specific schemes such as the ones that you have mentioned might well be fully justified for a totality of reasons but, in my personal opinion, there should not be carte blanche for road development as a whole; it must be considered in the round.

Maureen Watt: One of the parties is considering having three lanes on the road between Glasgow and Edinburgh. Surely that is not in the spirit of meeting climate change targets when there is frequent electrified rail connectivity. It is a matter of considering the economy in the round in relation to climate change, and I am not sure that it is all joined up yet.

The Convener: I am not sure that there was a question there, but Chris Stark can come in briefly on joined-up policies.

Chris Stark: Essentially, I agree with everything that Keith Bell said, and with Maureen Watt's final comment that we need a set of joined-up policies when it comes to transport. It is not a set of policies that can be fixed in aspic for ever. Lots of shifts are happening. We have not really talked about the societal and technological changes that are happening. This is not just about moving to electric vehicles.

A bigger set of changes—especially the change to home working—will, I think, be emphasised as a result of the experience that we have had during the pandemic. Currently, 25 per cent of car use is for commuting and just over 10 per cent is for business. Those changes might well have a big impact on what happens next with transport policy. Of course it makes more sense to give better alternatives to using roads if that can be done with the rail service or the bus service. There is the idea of a much more integrated approach.

A good thing that we can see in the report is that we are now firmly moving away from the idea that economic growth is tied to an increase in traffic. That is a really good thing. We are now looking at a much more complex and interesting multiplicity of approaches to improving transport provision across Scotland in line with our climate targets.

The Convener: That is an almost perfect lead-in to Stewart Stevenson.

Stewart Stevenson: Thank you, convener. I have just realised that I need to make some further declarations. I am honorary president of the Scottish Association for Public Transport and honorary vice-president of Railfuture UK, and I have a very small shareholding in SSE.

I have an observation. This week, I saw the first advert that I have seen for an electric tractor, albeit that it was a small tractor designed for use on crofts perhaps rather than large farms. However, there may be things coming.

Chris Stark made some preliminary remarks about the beneficial impact for the climate change agenda, if not for any other agenda, of the change in working patterns that has come with coronavirus. I suppose that the real question is how we lock that in. It is clear that we could tweak taxation systems to make it less attractive for people to travel to work when they can work at home. Indeed, we could do a whole variety of things. What sort of policies will help us to lock in the reduced travel that has come with coronavirus? I have not seen numbers that I can rely on, but we all know from experience and by instinct that travel has dramatically dropped with coronavirus. Perhaps we can start with Chris Stark.

Chris Stark: That is the question of the age for me. We have had an unexpected and unprecedented experience over the past 12 months that will have implications for behaviour in the long term. However, it would be a fool who would say that they could confidently predict what will happen.

To stray into foolish territory, my view is that we have had a change in working practices that will last. I think that we will talk about hybrid working in the long term and that an element of the style of work of speaking at home to members will be lodged for ever more in the way that I work. However, I am also looking forward to returning to the office. From my perspective, that is an opportunity when it comes to miles travelled.

Before we go on to some of the things that could perhaps lead to embedding and enshrining that way of working, I give a note of caution. It is not clear that we have cut car miles during the pandemic or during this period of home working. This is anecdotal, but we have seen that many people who are no longer commuting are using up that time by getting into their car and doing something else. That is a natural part of human behaviour when time can be allocated to leisure.

The interaction between work and leisure is right at the heart of the question of what happens next.

If we want to see that kind of work embedded, a reduction in the number of miles travelled and, with that, a reduction in the greenhouse gases that are associated with travel, we have to make home working really appealing. That is about the provision of broadband in particular. We are all struggling on this call this morning. We should not be doing that in the future, and we must have better infrastructure to deliver that. Scotland has good ambitions for that. To my mind, investing in broadband infrastructure is better than investing in roads. Employers also have to make that part of the offer for their employees.

To go back to the idea of neighbourhoods, it is really appealing to be in a neighbourhood. I am in a lovely bit of Glasgow, in its west end. I have come to love my neighbourhood in the past year. I have always loved the west end, but now I really love it, because of its amenities and green spaces.

Those things will make a big difference in the long run. I expect to commute less at the end of this, although I will still use public transport. Policy needs to be framed around a hybrid approach to work, so that we get the good outcomes that can come with it.

Stewart Stevenson: That answer is useful, but the key thing that I take from it is that you have rebutted my suggestion that car mileage has come down. Perhaps that should make it clear to us that we do not have numbers that support either my argument or yours; we just have personal experience. I am in a very rural area, so that experience will be quite different from the experience in central Glasgow. I will also say that I have walked nearly 1,000 miles since the start of lockdown, which was a personal choice that also has health benefits.

What sort of things should we be doing right now so that we can have this debate in a quantitative and truly informed way? We are both giving anecdotes that are based on our differing personal experiences.

Chris Stark: You are quite right that we do not have the numbers. The major issue is that, given the current conditions, we are being encouraged not to use public transport too much. That is the big uncertain condition that, I hope, will resolve itself this year. From our perspective, we should gather the numbers, because I think that a change will come out of it. At the moment, however, it is highly uncertain, because public transport provision numbers are thin, as you would expect. I suspect that we have an over-inflated private car use number at the moment. I hope that it will settle down later this year, when we can start to compile the data. We have a kind of lost year that we will have to write off. Let us look at the numbers pre and post-pandemic.

Encouraging people toward public transport needs to be big part of the strategy, and not just moving people to a—[*Inaudible*.]—channel but moving to better public transport provision. Again, the climate change plan update is good on that. The objectives that we see in it are—[*Inaudible*.]—in the right way.

The Convener: I would like to bring Keith Bell in, if I may, Stewart.

Stewart Stevenson: That is fine.

Professor Bell: I have a couple of quick responses. First, we do need the numbers. Let us see how we can get those numbers broken down, as Stewart Stevenson said, by different areas. My colleagues in the UK Energy Research Centre at the University of Leeds are looking into that and have published one or two things during the past few months.

Secondly, on policies that deal with or encourage changed working patterns, Chris Stark has mentioned making sure that broadband works for everybody. I agree with him, because I think that a mixed form of working is the way that we are going to go. That will present challenges to employers. How will people who rent space in town or city centres manage that space? What will it mean for how much floor space they own or rent? What will it mean for things such as rates? With regard to the public transport infrastructure, how will the cost be recovered? For example, if average rail use is down by some percentage because people are working from home, how will fixed costs be recovered? There are challenges for the financial models around properties and public transport infrastructure that need to be thought about.

However, they need to be thought about in a way that is not narrow and does not present disincentives, either to home working or to the provision of public transport and easy access to it. The overall picture must be that the impact on climate change and people's ability to work in the right kind of ways are the primary drivers.

The Convener: We go back to Stewart Stevenson for one more question, and then to John Finnie.

Stewart Stevenson: To be candid, I think that I have covered my area.

The Convener: You are kind—thank you for helping me.

John Finnie (Highlands and Islands) (Green): Good morning. Before I start on my questions, I take issue with Professor Bell's comments about safety on the A9 in the area that is to be dualled. If

Professor Bell is aware of any locations where safety is an issue and he could share those with me, I will raise them with Transport Scotland. It was my very clear understanding that all such issues were engineered out many years ago.

10:15

I will now ask about the draft climate change plan update. As you know, there is a wealth of statistics. I will mention just a few points by way of background, because a lot of this has already been covered. The draft climate change plan update predicts a 41 per cent fall in transport emissions between 2020 and 2032, and the 2032 target is 25.3 per cent lower than in the 2018 climate change plan.

Mention was made a little while ago of joined-up policies. The target of a 28 per cent reduction in emissions for each tonne kilometre of road freight carried by 2032 has been replaced by a commitment for the Scottish Government to work with the freight industry to remove the need for new petrol and diesel vehicles by 2035. That seems extremely woolly to me. I would have thought that rail is an option for modal shift there.

Do members of the panel think that the policies set out in the plan are likely to produce the 41 per cent reduction in transport emissions claimed by the Scottish Government? If not, what more needs to be done?

Chris Stark: I will keep this short. Bluntly, no, I do not think that the policies will deliver that kind of outcome. However, that kind of ambition is implied in the plan. The 2030 target that I talked about in my opening comments is what is driving a lot of the short-term need to cut emissions at that kind of scale.

The ambition in this plan has been increased since the first climate change plan, which is of course a good thing from my perspective. In fact, the emissions reductions in this update to the plan go beyond what we recommended in the work that we recently published in December. As we have talked about, that probably reflects a particular ambition to cut car miles.

Achieving a cut in transport emissions in line with what is in the plan would be unprecedented in Scotland. We have not seen that kind of cut in emissions over time; as Keith Bell said at the start, we have been going in the opposite direction. It is therefore quite a thing to see that set out as an ambition. Although I am very supportive of the eight policy outcomes in the plan, I do not think that I can say with confidence that they will amount to that kind of emissions reduction over time.

We will need to see more detail. We are promised some of that, and there has been a shift not only in the policy outcomes but in the metrics that go with that. John Finnie mentioned one of them in relation to freight, for example, and there is a lot of that shift, which is heading in the right direction.

The key thing is that we do not see some of the tougher measures that might drive that change. I will pull out one example around car miles. The option is to use the carrot or the stick approach. The Scottish Government has notably moved towards the carrot approach as its major way of encouraging people out of cars. However, all the evidence suggests that some sticks are needed too.

It is not enough simply to say that the UK Government is going to look at fuel duty and it is not enough to say that there is the vexed issue of workplace parking levies. If that is to be the ambition, there needs to be more there. When it comes to transport, there is a need for tough policy right across the piece if that is the ambition that the Scottish Government wants to deliver.

The Convener: Keith, do you want to come in? You are muted, so we did not hear a word of that. Please start again.

Professor Bell: I do not have much to add to what Chris Stark has said. Nonetheless, it is particularly ironic in relation to some of these areas of transport policy in that, ideally, you would not start from here. However, we are where are, and we need to gather quantified evidence on the effectiveness of different policy interventions—carrots and sticks—in order to be confident of what will deliver on that target.

As we have said, from a climate change perspective, the target is fantastic, but we hope that the policies to deliver it will be proposed in the near future. We have to look to evidence from other places, because the experiments and trials here have not been going on to an extent that gives confidence that the policies will be effective.

John Finnie: Thank you for that. We understand that progress towards meeting the policy outcomes will be measured using nine indicators, but there are no interim annual figures to mark progress towards the eight policy outcomes as set out in the CCPU. Progress is defined simply as year-to-year change or progress towards the target. When we are dealing with very specific, measurable figures, do the witnesses think that an acceptable approach has been adopted in relation to that issue?

The Convener: We will go to Chris Stark and Keith Bell. In the chat box, I have been saying quietly to my committee members that short questions and answers are helpful, because we

are trying to get through 26 questions and, although we are almost halfway through our time, we are only on question number 6. If the committee members do not get a chance to ask their questions by the end of the session, I will get slaughtered, so I would appreciate it if you can help me by keeping your answers short.

Chris Stark: I will do that.

Better metrics are always a good thing. I confess that I have not made a full assessment of the metrics, so it is probably better that I do not pretend to have done so. However, I am pleased with the way that the policy outcomes have moved. The focus of the outcomes has rightly shifted, so metrics that are meaningful—and not just greenhouse gas emission reductions—now need to be attached to those policy outcomes. In the end, that is what will drive progress and meaningful policy.

The Convener: Keith Bell, do you want to answer briefly?

Professor Bell: In the interests of time, I have nothing to add.

The Convener: John Finnie, on that basis, do you have a brief follow-up question?

John Finnie: It has already been touched on that the CCPU commits the Scottish Government to a 20 per cent reduction in the distance travelled by car by 2030. Do the panel members wish to add anything to what they have already said on that? If not, I am happy to move on.

Chris Stark: We have looked at that in the Climate Change Committee. For me, the 20 per cent reduction in car miles by 2030 is the biggest new element of the transport plan. In our work, we have said that reducing car demand by that amount offers significant potential to cut emissions but it is interesting that, even in our very ambitious assessment, we do not get to that 20 per cent figure.

We have listed four important factors. We have talked about all of them but I will list them again briefly: first, societal and technological changes, especially home working; secondly, increasing car occupancy, which we have not talked about, via the shared car use that currently accounts for only about 3 per cent of journeys; thirdly, modal shift to active travel, such as walking and cycling; and fourthly, modal shift to public transport. We have ambitious policies to push those things and, in our analysis, their combined effect is to reduce demand in car kilometres by between 7 to 16 per cent by 2030.

The key thing for me is my earlier point that that will not happen unless there is a combined carrot-and-stick approach. The kind of policies that are being proposed in the plan are mainly carrots; the 17 proposed policies to reduce car miles are almost all carrots, with the exception of the workplace car parking levy and fuel duty considerations from the chancellor in London. The balance of that does not seem right to me.

The Convener: I will go to Emma Harper now, because that was a full answer.

Emma Harper (South Scotland) (SNP): Thank you, convener, and good morning, everybody. It is interesting to hear Chris Stark talk about sharing cars. When I worked in California, we were incentivised to car pool; we got points and rewards. I am interested to hear whether we should promote car sharing further.

I also have a quick question about decarbonising freight. We have heard a little about batteries, electric and hydrogen, and I know that there are companies out there that make electric freight vehicles. Is the climate change plan sufficiently ambitious on freight and transport? Should we be getting freight off the roads and on to rail?

Professor Bell: Yes, obviously, we need to decarbonise freight and get it on to rail, where rail is decarbonised. Even before rail is decarbonised, it promises to be more efficient. However, there is always the challenge of the last mile—the start and finish of the journey—and that needs good co-ordination. In principle, we have the information technology tools that should allow it to be managed. There should be relatively few obstacles, provided that we have sufficient rail capacity on the key routes. I totally agree that that is the direction that we should move in.

We have touched on heavy goods vehicles and the need for access to hydrogen infrastructure to support them. That looks like the most likely way of facilitating low-carbon HGVs, provided of course that we get the hydrogen from low-carbon sources. That links into a bunch of other questions.

The issue has to be addressed, but the climate change plan update is pretty light on it, to be honest. We will therefore be looking for further proposals and moves in that direction in the near future.

Chris Stark: Car-sharing policies do not get enough attention. As Emma Harper says, other countries are really focused on the issue, for reasons of congestion on roads rather than addressing emissions and climate change. Car sharing accounts for a remarkably small proportion of journeys. I do not have the number for Scotland, but I imagine that it will be even less than the UK average figure, a lot of which I am sure will be propped up by journeys in the south-east. In the UK, 3 to 4 per cent of journeys are currently done

through shared car use, and I suspect that it will be even less in Scotland.

It is an easy policy and therefore quite a cheap one to push, so I suggest that we could see a stronger focus on it in future iterations of the transport strategy.

Emma Harper: More people are buying SUVs, which seems to be offsetting emissions reductions. I know that electric SUVs are available. What can be done to reduce vehicle emissions further? Should we encourage people to buy electric SUVs if they are going to continue to want to drive those bigger cars?

Professor Bell: In a word, yes. If people insist on using SUVs, they should be ultra-low emitting. One wonders why SUVs are quite so popular, anyway. Even electric SUVs are heavier, and they require more energy, so they will put bigger demands on the charging infrastructure. They are not ideal but, as you suggest, if someone insists on an SUV, it is better if it is electric rather than petrol or diesel.

The Convener: That probably answers Emma Harper's question sufficiently. If she is happy with that, I will move on to Finlay Carson, if we can raise him. Are you there, Finlay?

Finlay Carson: Thank you, convener. This is not some sort of stunt to show how bad my broadband is.

The updated climate change plan highlights the importance of improved digital connectivity, particularly in relation to the proposed 20 per cent reduction in the distance travelled by cars or the reduction in the need for air travel. In rural areas, we have issues with transport. There was a service called ring and ride in Dumfries and Galloway. The situation could be improved by having seamless door-to-door transport services using an app, or perhaps taxi services and car clubs. However, that all needs to be done through a robust digital platform and robust digital infrastructure.

As I said, the updated plan highlights the importance of the development of digital connectivity. I will caveat my question by reminding everybody that broadband legislation is reserved to the UK Government, but the practical delivery of broadband roll-out is the Scottish Government's responsibility. On that basis, are the Scottish Government's digital infrastructure plan and associated budgets sufficient to achieve the emissions reductions that are attributed to the use of digital connectivity? If not, what else needs to be done to support the development of that infrastructure?

The Convener: We will start with Keith Bell on that.

10:30

Professor Bell: I was going to say that I would be happy to leave it to Chris Stark. I am sorry; I am not familiar with the details of that plan. As we have already discussed, it is difficult to be confident about exactly what kind of impact a certain element of policy will have on another without having some evidence from trials or demonstrations—not quite a controlled experiment—so as to understand, at the very least, the before-and-after impacts of rolling out much better broadband access, for example. I do not have to hand the details that would allow me to answer Finlay Carson's question.

The Convener: We will go to Chris Stark. Broadband is on the whole pretty topical, because we are all having to work from home.

Chris Stark: Other countries have much better broadband provision. It is clearly a good thing for the Governments north and south of the border to prioritise investment in better IT infrastructure across the country—it is decrepit in many places, in rural communities in particular. The Scottish Government's objectives to improve rural broadband provision are clearly the right ones.

I am not familiar with the programme. However, I observe that we have a whole set of infrastructure requirements in achieving net zero across Scotland over the next 25 years. Many of the costs in that programme of reinforcing the infrastructure across our communities will come from digging up the roads. Arguably, the big question that lurks behind all of this is whether we might be able better to co-ordinate some of the big network investments that need to happen in order to deliver net zero overall. That could include bringing the broadband plan in with the energy plans. I say that without knowing whether that is on the agenda. It would be nice to have a better co-ordinated plan for investing in those critical infrastructure networks over the next 25 years, at the end of which we would have much better broadband provision, much better transport, and much better energy provision in a net zero world. That kind of integrated view is certainly not in the climate change update that is before us.

Finlay Carson: I understand that you may not be aware of the plans, but certainly your responses suggest that we need to have a far better joined-up approach to digital connectivity in order for that to deliver on the climate change targets as we need it to do. Thank you.

The Convener: The next questions are mine, and I will start by directing them to Chris Stark. The CCC's 2020 progress report states:

"there has been no meaningful progress on tackling agricultural emissions in Scotland".

Will you briefly explain why that is and what should be done by the Scottish Government to tackle it? I will bring Keith Bell in afterwards.

Chris Stark: That is a critical issue for the transition that is ahead for Scotland. Emissions from Scottish agriculture have remained largely unchanged—they have fallen slightly over the past decade, but not to an extent that is anything to write home about. Agriculture has been a stubborn sector when it comes to emissions. The reason for that is that most of those come from livestock. We have not seen a policy that really tackles emissions from livestock or from the farm, which would include waste products. That has been a long-running theme of the discussion on agriculture and climate change, not just in Scotland but across the UK. However, there are now efforts south of the border to tackle that.

In the updated plan, we see an increase in the ambition to cut emissions. It has more than doubled the previously promised reductions in emissions to 2032. The last plan had a cut of 9 per cent; we are now talking about 24 per cent, which is nearly a quarter. That is in line with the CCC's assessment—we have recommended that fall of a quarter as well—but there is no detail on how that will be delivered.

There is a list of policy outcomes, but they are mainly proposals—there are a few policies in there, but I would say that the meaning of the word "policy" is being stretched. We are promised lots of things. It is worth saying that that is a good thing. We are promised a new rural policy, for example, but that is not until next year. There are lots of commitments and lots of things being promised, but there is little detail on how they will be delivered.

We are given an interesting statement about what is coming next with rural policy. It says that we will see something soon on how best to incentivise and reward high-value nature farming—including, as promised, peatland restoration and agroforestry—and that those points will be included in a future policy that will also consider sustainable food production, emissions reduction, reduction of biofuel crops and appropriate land use change.

Those issues are big ones, but the plan is not clear about any of the tools for the delivery of the big change in land use that we think is necessary for Scotland to get to net zero, or about the tools to deliver what we call a just transition, from which multiple benefits will come, and the change in employment that goes with it.

I think that 2022 is a long time to wait for that big change. The storage of carbon in the natural world, which is after all the central idea that we need to embed, takes time. Every month that we delay a policy to incentivise and encourage that change is a month that we will not get back—the clock is going tick-tock on this stuff. Although some progress has been made on policy development, I am still critical of it, because it is far too slow if our agriculture sector is to be properly wired up to the goal of net zero by 2045.

Professor Bell: I second what Chris Stark has said. There are good things in the plan, such as the provision of support for knowledge sharing and the upping of skills, and a promise to reflect on the effectiveness of various capital grant schemes and to talk about carbon audits. We need to get better data so that we can get a better understanding of how effective different measures are, as we have talked about in relation to other areas of the plan.

This area needs to move much quicker. It has such a big impact on the whole rural economy, so what are the ways in which that economy will be shaped beyond just agriculture, although agriculture is a key part of it? Other big issues that play into this space as well are things such as diet, the provenance of food products and consumer preferences.

The Convener: Maureen, would you like to come in with a question?

Maureen Watt: My question might be on the back of your second question, convener. It is about the shift in agriculture. I do not want to pre-empt you.

The Convener: You do not want to tread on the convener's toes.

My second question is simple. I have been farming for 40 years and have seen massive changes, including a huge drive towards increased productivity from farmers, whether through proper use of lime to increase fertiliser take-up or through reduction in cattle infertility and in waste.

My problem is that parts of Scotland that are classed as grade 3 or 4 land are suitable only for livestock production and not really for crops or forestry. There is a drive to reduce meat and dairy production, but in some cases meat production is the only way forward and also gives us food security. How do we balance that problem?

Professor Bell: The issue is about consumer preferences and the understanding of the provenance and quality of food, which is part of what I said in my previous comment. It is, again, difficult to get the data on meat consumption and on how much of that meat comes from well-farmed, efficient, low-emitting sources in Scotland or elsewhere in the UK, and how much of it is imported. The data suggests for example that beef production in Brazil is highly emitting—much more so than in the UK.

The question is whether consumers have an understanding of where the meat comes from. There needs to be a reduction of the total amount of meat in the diet—we are not at all suggesting its elimination—and there needs to be a better understanding of where it comes from. That may have price implications, but it is all in the space of consumer choice and what we get for it.

I would be interested in your view, convener, if I am allowed to turn the question back. The point that you made about the increase in productivity was well made. It has been suggested to me anecdotally that there are some quite big differences between the best and the less good across the farming sector, so to what extent is one of the challenges getting everybody up to the level of the best, alongside those consumer challenges?

The Convener: You would never expect a politician or a farmer to criticise other farmers or—[*Inaudible*.]—politicians. Chris Stark, do you have any answers to that question?

Chris Stark: The first thing that I will say is that no one on the Climate Change Committee is proposing that we stop grazing livestock on Scottish farmland, but there is an overall need to change the way in which we use land. That is not only from a climate perspective; there is a need for a better strategy for all the ways in which we use our agricultural land.

Ultimately, farmers are the ones who lose out by not having that; we see the opportunity to change land use as an economic gain for the farmer or landowner. We need to embed the idea that professional change is good and, when it comes to climate policies, developing new land management skills so that we are storing more carbon in that land is adding to the skill set that the farmer will have. I would like to see the idea embedded that carbon is a crop and that farmers should be rewarded for storing carbon in the right way. I eat red meat and I do not think that anyone is saying that we should all become vegan—this is not a recipe for that kind of change. It is more about balancing the services that we get from the land in a different way so that we get environmental benefits along with the high-quality food production that Scotland should be known for.

The frustration is that we are not seeing a harder-edged policy to push towards that; there are no regulations or new incentives to drive emissions reduction in the climate change plan. They may come, but we have not seen them here. It is mainly a policy approach of providing advice to farmers to deliver these enormous emissions reductions. The scale and change in ambition is striking, but I am doubtful that it will be delivered without tougher policies. That is not a new message—we have been saying it for a long time. We have been clear that the current approach to policy does not work; it has not been delivering the emissions reductions that have been promised in the past, so why would we think that it would in the future?

The only thing that I will add to that is that there is nothing about diet change at all in the document, which is a disappointment, because diet change is a real thing that is happening. In our advice, we have said that there is already a trend away from meat consumption in this country and we have not proposed any punitive policies to change that for the whole of the UK. With better advice and healthier diets, that is something that will happen along the way. That will be a factor for farming in Scotland, too, so we should work with that to preserve the high-quality production of meat in Scotland alongside growing trees, restoring peatland and improving the environmental services that are offered from the land.

Farmers should be rewarded for all that, so the absence of a policy to deliver that more holistic outcome is striking. That is the kind of thing that the Department for Environment, Food and Rural Affairs has been thinking about down in Westminster.

The Convener: I will go to Maureen Watt, but I have a bit of a throwaway line to make: if farmers were properly rewarded for what they produce, it would be a win not only for the climate but for farmers and the new policy.

Maureen Watt: This is a very interesting conversation about key changes in agriculture. What you are saying, if I read it correctly, is that consumers are changing their dietary habits, but if people are still going to eat meat products, those should come from Scotland rather than be imported from the Americas. However, it is clear that trade policy is going in the opposite direction. Cattle grazing, as far as I understand it, helps with emissions because grass stores carbon, the cattle graze it and the soil can then store more carbon. Apart from different methods of ploughing, I have not heard any other ways that farmers are encouraged to change their practices; have you heard any other ideas apart from different methods of ploughing?

The Convener: I might roll that question in with Emma Harper's supplementary and ask the witnesses to roll up their answers to both questions.

10:45

Emma Harper: This is indeed just a quick supplementary. I am aware of biological products, including yeast-based products, that reduce

emissions in sheep and in beef cattle, and improve efficiency. There are also products that can digest slurry, reducing emissions. Should we be incentivising, educating and rewarding farmers, so that they take up those various products?

Chris Stark: There are lots of things to say about that. Ms Harper's points are well made. There are changes that can be made on the farm to reduce emissions from cattle and sheep, including the use of feed additives. There can also be changes on the farm, including in how the soil is managed, that will help.

Ultimately, we have a problem with the emissions from the animals themselves, and we have to tackle that one way or the other. Either we accept that those emissions will be there in perpetuity and we work harder somewhere else in the economy in order to get to net zero, or we accept, on the basis of our advice, that we must reduce those emissions, and we probably have to reduce the number of cattle slightly in order to achieve that. That is ultimately tied to the diet change issue.

I will make a final point on this—I am trying to be brief. It is absolutely right that, if we are going to consume meat—I am perfectly pleased to see that happen—it should be meat that is produced here in Scotland and in the UK, because it has the lowest greenhouse gas emissions associated with it. Nonetheless, there is a large source of emissions there that must be tackled. We are talking about reducing it, not ending it or getting rid of it altogether. Every sector has to contribute to the challenge of getting to net zero. The agriculture sector has not been contributing to that reduction in emissions to date, but the plan commits to reducing emissions from the sector by a quarter over the next decade or so.

The policies to deliver that will be tough, and the Scottish ministers will have to work hard to deliver the outcome because, historically, that has not been what has happened in the sector. To imagine that it can happen without considering the livestock themselves and what we do about those emissions is magical thinking.

Professor Bell: I reiterate the point that people have an impact on the land, and we depend on the land for so many things, so the key lies in the management of the land. We are not talking about a modern society where land can be left unmanaged.

Who is responsible for that management? Farmers play a big role in that, but not on their own. What is it, as a whole, that we want from the land? We have touched on that a few times. The land helps to lock up carbon and it supports biodiversity, and that supports so many other things. Of course, it provides food. The people who are responsible for managing the land and for providing a range of ecosystem services need to be incentivised or rewarded for doing so. It is a package of measures, not agriculture alone, that needs to be thought through, developed and delivered.

As for the impacts of different measures, we need to rely on credible, independent scientific evidence to inform them. That will produce some uncertainty—science is a very uncertain thing, as we have heard a lot over the past year. There needs to be reasonable judgment about sources of information and how well the science is being conducted in informing that package of measures.

Finlay Carson: Chris Stark, you have said that we need to reduce meat consumption, but have any estimates been done on what the reduction in emissions that could be achieved by encouraging people to eat less meat would be, as opposed to encouraging people to eat locally produced meat and other food? I wonder whether there is a big difference. If you are looking for bang for your buck, are we better encouraging healthy eating and locally produced food, rather than telling people to reduce the amount of meat that they eat?

Chris Stark: [*Inaudible*.]—easy way to answer that question. In our modelling, we have looked at a reduction of 20 per cent in meat consumption in the round. We did two reports in quick succession, looking at red meat consumption falling by 20 per cent and then at all meat consumption falling by 20 per cent over the next decade. However, what is crucial is that we do not increase imports, because that is bad for the environment generally, so trade policy must be aligned with that. The other thing that we are now modelling is a situation where we keep producing the same amount of food per head of the population as we do today, so that it is about a change in agriculture rather than a reduction in the size of the agriculture sector overall.

We are also squeezing in new services from the land—the environmental benefits that come from sequestering more carbon in the soils and growing more trees, as well as the natural protection against flooding that we get when some of those things are done. We are squeezing in a whole load of new objectives. Diet is one of the critical components of that strategy overall, which is why it is disappointing not to see more on that in the strategy.

There is a set of services that the land can deliver. In our assessment, we can do more with land—we have been pretty conservative about those things. Ultimately, the farmer will benefit if we can reward the farmer for delivering more than just food and meat production. What we are missing here is the idea that farmers should be

rewarded for a broader range of services. That seems to be the way in which DEFRA policy is heading. I fear that there is an element of King Canute in the way in which the Scottish ministers have approached that so far. We are still very focused on traditional food production, when farmers would benefit from broadening the options for their—[*Inaudible*.]—opportunities to use the land in different ways. Diet is at the heart of that, but it is not a prescription just for diet change—it is a whole set of changes that go with changing land use in the round.

Peter Chapman: We have just heard our experts agree that, when it comes to the ambition to meet our targets, the Scottish Government's policies for agriculture are woefully inadequate. However, there is one area in which we can say that it is doing quite well—the targets for planting more trees in Scotland, which seem to be on track. The targets that are in place will mean an increased acreage of trees being planted. What key factors have contributed to that success? What are the next steps to ensure that the targets are delivered? It is fine to have targets, but we need to hit them.

The Convener: Would Chris Stark or Keith Bell like to come in on that?

Professor Bell: Chris.

The Convener: Usually in the committee, the witness who does not look away quickly enough will be the one who gets hit with the question, but Keith has nominated Chris to answer.

Chris Stark: I am happy to answer that. Although I realise that the committee is not considering the issue of peatland, forestry and peatland sit closely together. The Scottish Government has done really good things on upping the ambition on new forestry, woodland creation and peatland restoration. We made an assessment that the Scottish Government met its 2018-19 target for planting 10,000 hectares of new forestry—in fact, it exceeded it—and, in recent programmes for government, it has increased that ambition.

It is interesting that we are now promised all sorts of things that go alongside that. There is a nice story about this. The approach to forestry in particular is great. We are seeing a steady ramping up of woodland creation over the 2020s to 18,000 hectares a year by 2025, which is very much in line with our recommendation for a minimum of 15,000 hectares a year to be planted by that point. That is where we should be, and there are opportunities to do even more. We think that 24,000 hectares a year is feasible.

However, it is really important to say that that strategy rests on a firm commitment and public spending—that is the recipe, I suppose. The Scottish Government made the decision that that was the basis of the policy that it wanted to pursue, but it now needs to be rolled out and delivered.

Although I speak from the perspective of the Climate Change Committee and my interest is in carbon and how much can be stored in woodland in the future through such commitments, it is really important that we do not forget about nature and biodiversity along the way. The woodland that we are creating should be in tune with nature and the environmental conditions in Scotland as much as possible. That means that we need to grow some species other than the fast-growing trees that are typically used for timber and rapid carbon storage. Those things tend to take longer, which means that getting a strategy in place early is a good thing. The Scottish ministers ought to be congratulated for getting that right; they get a lot of praise from me on the forestry stuff.

We could go even further. I would love to see a successful roll-out throughout the 2030s alongside all of that.

Peter Chapman: I was interested to hear you say that we need a mix of trees, not all of which should be fast-growing conifers. I absolutely accept that, but—there is a "but"—the UK is the second-biggest importer of timber in the world, so there is a need to fill some of that gap. We should remember that we have a milling industry that supports many jobs, which transforms timber into planks and things that we can build houses with. A mix is fine, but we should not forget that we have an industry that meets a huge need for timber products.

The Convener: That sounded like a statement rather than a question.

Peter Chapman: A comment in return would be useful.

Chris Stark: I firmly agree with that, and it is refreshing to hear, because often in the green community, the discussion is about the dangers of growing such trees. However, there is a market for timber and, from a climate change perspective, the timber that we use in construction acts as a brilliant store of carbon for a very long time. It is a good way of removing it from the air and storing it somewhere safely. I agree that we should do as much of that as we can through indigenous production in the domestic industry, and there is a huge opportunity to do that. We have been able to ramp up the woodland creation strategies and targets partly because the capacity to do it is there in Scotland, and as well as having the people working in the sector, there is a willingness to do it and the land to do it with.

I add—because I should not be overly optimistic about absolutely everything when it comes to

forestry—that the success of the approach ultimately rests on a strategy of straightforward public spending. There is an interesting question about whether we might encourage new woodland and timber creation on what is presently agricultural land through more market-based mechanisms. Some of those things do not need to be paid for directly through public spending. For example, we can imagine a world in the future in which farmers are rewarded for growing forestry through taxes on high carbon use, particularly in a sector such as aviation. We do not have all the components for that in place yet, but we can imagine that happening in the future. A more market-based approach to creating new woodland could be there if the conditions were right. That is another clue that the story on agriculture and land use change is not quite right yet.

John Finnie: The issues that I wanted to cover have already been touched on, so I will roll my questions together. We have spoken repeatedly about targets. At 24 per cent, the anticipated emissions reduction for agriculture in the CCPU is significantly greater than the nine per cent that was set out in the 2018 plan. Is that level of ambition sufficient? Is it achievable?

Chris Stark: It is certainly sufficient, but whether it is achievable is much more debatable. Now might be the time to make some general criticism of the climate change plan, and not only on those issues.

What we see in the plan is partially a modelling exercise. Using its model, the Scottish Government has failed to achieve the 2030 target that was set by Parliament. Therefore, off model, a pro rata allocation of further emissions reductions that the model could not generate has been applied to the various sectors to enable them to get to the 2030 targets that the Parliament has set for them. To use a modelling term, that is suboptimal. It demonstrates clearly how hard it is to achieve the targets that the Parliament has set.

I have a related point, which is that the modelling exercise is almost completely removed from the policy exercise in the document. Therefore, I am not at all clear about whether the policies and proposals in the document are there to deliver the emissions envelope that is contained in the final annex of the climate change plan, or whether those two things are actually very separate. There is nothing in the report that tells me the answer to the question that you asked me about whether the policies are sufficient; I cannot tell you what the emissions reductions associated with those policies and proposals are.

11:00

There are all sorts of things that lead me to be dubious about whether the objectives—especially those for agriculture—will be achieved. The pro rata allocation of extra emissions reductions was not applied to the agriculture sector. I do not know why that was—perhaps there was a ministerial discussion about what the minister was prepared to accept in that regard. For agriculture in particular, we do not have a set of proper policies developed and implemented that would allow me to say with confidence that we can achieve the ambition that we see in the emissions reductions that seem to have been allocated to the sector. All in all, it appears to me to be quite a loose plan, which does not give me great confidence that we are going to achieve a fall of a quarter in emissions from agriculture over the next 12 years.

John Finnie: Ambitions and targets are never sufficient in themselves; I may well have the ambition to compete in the Olympics, but that is not realistic.

I want to drill down a bit further. The direction of travel for forestry is good, but—as you may be aware—a production slump, which nothing can be done about, is heading our way. You mentioned the 2030s. Do you believe that the ambition is achievable in terms of resources? I do not know whether you are aware of this, but the age profile of harvesting operators is a challenge and, as has been touched on, there are issues with supply chains, markets for wood and land availability. Can you comment on those factors and how they might impact on the target for an increase in forestry?

The Convener: I will bring in Chris Stark first. Professor Bell, if you want to come in at any stage, you should let me know—just give me a wave, and I will bring you in.

Chris Stark: You should not do down your Olympic ambitions, Mr Finnie—we can all aspire to greatness.

The plan for forestry is entirely achievable and entirely in line with the current situation. What tells me that it has been thought through is the steady increase over time. The capacity in the sector can be there. You are absolutely right that there is a deficit of skills, but that is an employment opportunity that we can grow over time. Ultimately, that rests on the targets enduring beyond the duration of the plan.

We have good targets out to 2025—[*Inaudible*.]—understand what they look like out to 2032 and beyond. That will give us a solid basis for recruiting into the sector and growing the skills base. I have every confidence that Scotland can grow the sector, because we have achieved those

kinds of planting rates before, in the late 1970s and the 1980s.

Again, it comes down to whether we have a long-term plan with credible policies that is put into action. Forestry and peatland restoration are among the few areas where we can see that that is the case, so I am confident that the target will be achieved overall.

The Convener: I see that Professor Bell wants to come in.

Professor Bell: We have made the point about time on a few occasions during this session. One of the things that the Climate Change Committee is concerned about when it gives advice on particular targets, carbon budgets and so on is achievability. Given the capital stock that we have and the supply chains, we can make some assumptions—informed assumptions, I would hope—about behavioural change at an institutional and an individual level and whether the targets are achievable.

As we have said a few times, the 2030 target in particular, which was strongly supported by MSPs—I warmly welcome that support; you represent me as a constituent in Scotland—is a commitment that has been made; the question is whether it can be delivered on, which is highly challenging. The policies have to back up the ambition, and we are a bit behind the curve on some of the issues. There is a lot of work to be done and, as Chris Stark said, there are many opportunities, such as employment opportunities. Yes, there are challenges, but there are opportunities for people coming into the sector. We have a massive opportunity this year: I hope that we will all look towards the 26th conference of the parties—COP26—when the eyes of the world will be on Scotland. That will be an opportunity for those of us who care about these issues and work in this space to enthuse people as a whole.

Part of that is about highlighting the opportunities for jobs in climate change mitigation and adaptation. Outside of my CCC role, I am involved with a group of academics across the UK that has spontaneously formed in order to support that broad vision. One of the things that we are doing is looking at education and skills across multiple sectors, and at maybe organising a green careers fair. Some of the issues around management of land are very much a part of that. Let us try to embrace those opportunities, especially in the coming months.

Christine Grahame (Midlothian South, Tweeddale and Lauderdale) (SNP): I am sorry, but I have to dash away soon to other duties.

I have been listening carefully and I remember, as we all do, the way in which the common agricultural policy changed the landscape of Scotland. We suddenly saw fields of oilseed rape everywhere, when we had never seen them before. It was not always the best thing for farming and consumers. When I look at the environmental conditionality policy that is committed to in the draft CCPU, I hope that I am looking at something that will be better than the common agricultural policy. I hope that it will be a framework that will change our landscape and our eating habits, and what our farmers produce. I take it that the policy means that farmers will get support if what they do helps the environment. Have I got that right? How would that look?

Chris Stark: I hope that you have got that right, because it is the kind of policy that we need. However, there is not enough information in the draft CCPU to tell me that that is the case. The rhetoric on that—the idea that that is the world that we are moving towards—is good, but the details of how the agricultural transformation programme will develop are not there; in fact, there is no detail about how future rural policy funding will develop to replace the common agricultural policy. Surely that is a major priority, as we need to understand that.

I have given a lot of criticism so far during the meeting, so I am pleased to see that the environmental benefits that can come from a change in practice on the land, and a change in the way in which land managers approach agriculture and the environment, are being acknowledged. I just wish that we could see more on what those policies will be and how they will be framed.

Some of those policies need to be regulatory—that is the other thing that I would say that I have not yet had the opportunity to say. We have been very clear that emissions reductions on the farm are mostly cost saving for the farmer. Therefore, regulation is a good approach, because it drives emissions down and improves agricultural productivity and the environment. It is going to be really important to see some of that tough regulatory stuff in the policies that we do not yet have before us. Of course, I would love to be wrong on this—I would love to see a fully-fledged policy emerge that gives incentives to farmers and landowners to deliver what we would call environmental services.

Christine Grahame: I have a couple of supplementary questions. First, is there an example anywhere else in the world of that kind of environmental conditionality in the agriculture sector, which we could beg and borrow from to get some ideas?

Secondly, now that farmers will not receive CAP funding—that money will be retained—should the same amount of money come directly to Scotland for the Scottish Government to administer, with

environmental conditionality taking over from the CAP?

Chris Stark: The discussion about how much money should come to Scotland is above my pay grade, but I would certainly like to see some of that money being tied to environmental objectives.

If you are looking for an example of a regime that is in development to deliver that, you need only look south of the border at DEFRA's environmental land management scheme. ELMS has many issues, too, but at the heart of it is the idea that the public money that goes to the sector should deliver a set of public goods, including environmental outcomes and a saving from carbon. That idea is there. I know that officials in the Scottish Government have looked extensively at that; Fergus Ewing has looked at it, too, so I hope that something similar to ELMS emerges that has the same motivation at the heart of it.

I am afraid that I cannot speak about the quantum of funding that is required to deliver that, but I reiterate my earlier point that most of the things that we in the CCC have been recommending and proposing on agriculture and land use change are cost saving or deliver new revenue streams for the farmer.

Referring back to my point about King Canute, let us not try to hold back the tide; let us get ahead of it and have policies that deliver a better commercial offering for farmers in Scotland, and which also happen to deliver a better environmental outcome.

Christine Grahame: Does Professor Bell wish to say anything on that?

Professor Bell: I fully support what Chris Stark has said; I have nothing to add.

Christine Grahame: Okay.

There is another point that I am interested in; I am on the side of the Scottish farmer here. If we move towards a reduction in meat production, say, I would be very concerned about imports coming in. Indeed, they will come in anyway. Should we go down the route of having tariffs for imported meat?

Chris Stark: That is one of the suite of tools that we could consider. Not just in this sector but in many sectors and industries in Scotland there is the idea that we could have what is called a carbon border adjustment, which is basically a carbon tax at the border. The EU is thinking about that now, which would involve high-carbon products being taxed more highly if they were imported. That would include some meat that is produced in other countries. The question whether such a tariff should be applied is more than just a climate policy question, but I can tell you that it would certainly have an impact. I think that it should be in the toolbox when we come to think about the changes ahead.

I do not think that such a measure is necessary, however. We can imagine a world in which we make it clear, through the policy that we put in place and the advice that we offer to consumers, that they should consume home-grown food and meat because of the low greenhouse gas emissions associated with that. A trade policy alongside that would definitely help.

Christine Grahame: I think that such a measure is essential. Some of us can afford to change but, for other people on very low incomes, if cheap mince, beef, bacon or whatever comes in, they will buy it, and I do not blame them. If we are going to go down the route of making ours a better product and boosting the production of it on an environmental basis, I cannot see how we can escape a carbon tax or tariff that would give farmers in Scotland a fair chance.

The Convener: Chris, is that—

Christine Grahame: That was really a comment rather than a question.

Chris Stark: That is among the suite of things that we have recommended so, basically, I agree with the premise of your point.

Christine Grahame: I thank both the witnesses.

I must now take my leave of the committee, convener—I thank you for your indulgence.

The Convener: Thank you, Christine.

Before we move on with a supplementary from Peter Chapman, I have a quick question for Chris Stark. According to what was agreed in the Agriculture (Retained EU Law and Data) (Scotland) Act 2020, the new farming policy must be laid before the Scottish Parliament by 2024. Is three years not quite a long time to wait for a plan, given that we have an urgent climate issue to deal with?

Chris Stark: Yes—it is as simple as that. There has been some progress in policy development, but progress on the plan has mainly involved consultation with advisory groups. The farming and food production future policy group has been tasked with considering the best policy recommendations, but that is just kicking things out for longer.

Some interesting work has been done on suckler beef, and some good recommendations have come out of that. The report on that work was published last year, but it will not be implemented for some time. We are really just standing time on a set of issues on which, for more than a decade, we have been saying that voluntary approaches have not delivered the impacts that we need.

There is now an upping of the ambition to cut emissions, but there is no real sense of which policies will deliver on that. I am very dubious as to what will deliver the changes in emissions that are being proposed in the plan. In my view, it does not yet represent a meaningful strategy for cutting agricultural emissions. Waiting until 2024 is a little late, in my book.

11:15

Peter Chapman: Speaking more as a farmer than an MSP, I recognise the frustration that Chris Stark has just expressed at the lack of a policy for agriculture going forward. In my opinion, 2024 is far too late—I have been saying that for many years, as the committee is well aware. Many of the issues that are good for the environment are good for agriculture as well. Farmers are ready for change, but they need the lead, which is sadly lacking.

That was more of a statement than a question, but I recognise the frustration in the industry, and as expressed by the two experts who are here today. I will leave it there.

The Convener: There is frustration with statements as well.

Professor Bell: I simply repeat what we have said about frustration with delays. Questions need to be asked about why some of those things are so slow.

I warmly welcome the committee's scrutiny of the Government, and its holding it to account on the issue, which is one area that needed to be uncovered. The CCP update represents increases in ambition, which have to happen to comply with what has been legislated for. In various areas, there are policies set out that we can be pretty confident about delivering. However, as we have said, in many areas, there are not. The diligence has to increase, and we are looking for answers to some of those questions.

Finlay Carson: Chris Stark touched on how peatland, agriculture and land use are very much integrated. This committee is focused more on the agriculture and land use sector. It is important to try to appreciate what is achievable. As John Finnie said, I might have an ambition to compete in the Olympics, but it would not be achievable.

We have seen that with peatland to some extent—the target is 20,000 hectares a year, but we have hit only 6,000. Yesterday, we heard that there may be moves to look at how we can get more from fewer hectares. That might also be the case for forestry. We have a target that, at present, relates mostly to softwoods; that helps to deliver for the timber industry, which is currently calling out for timber. However, despite the fact that we know that the forestry sector can capture something like 9.5 megatonnes of carbon dioxide—[*Inaudible*.]—broadleaf native species, but it appears that there is still an emphasis on—[*Inaudible*.]—timber. Do you think—[*Inaudible*.]

The Convener: Mr Carson, I do not know whether it is just me or everyone else, but I am struggling to hear your question. There seems to be an issue with your broadband. I got part of your statement at the beginning. Perhaps you can try again, with a brief question.

Finlay Carson: Has the updated plan—[*Inaudible*.]

The Convener: I do not think that we will get Finlay Carson's question, as his broadband is failing him, unless everyone else is hearing him. I think that he was asking about how we need to integrate the policies in the two areas of forestry and agriculture to make sure that we get the right balance; whether there are areas of ambition in which we are lacking; and what other steps we should be taking. I think that that is a brief synopsis of the question. Chris Stark, if that makes sense to you, do you want to answer?

Chris Stark: You mentioned the need to integrate, which is absolutely right. A regional land use partnership is promised in the climate change plan update, which is intriguing. We do not know what is planned for that, except that it will bring together Government, landowners, local communities and, intriguingly, stakeholders, which could be anyone.

That sounds really worth while and we need that kind of thing, but, again, there is a delay. A regional land use framework will not be developed until 2023—I think that that is the date that is given in the plan. A central question that I have as I read the plan update is how we will come together to understand how land use will change. The key point is that we need a shift in land use. In our assessment, a change in land use should be a policy objective, not just an implication of the policies that are set.

I do not see that reflected in the plan, although I am excited by the idea of a better land use strategy and a regional land use partnership with a framework. That might be a good way of opening up the discussion, because agricultural land will have to be used for the creation of new woodland and for restoring peatlands. I would like to be able to eyeball the plan to do that, but it seems, again, that we will have to wait for a few years to see it. However, the idea of co-ordinating through a framework is a good one.

Professor Bell: I see an analogy for that level of co-ordination in what has been talked about in the energy sector, with local energy plans to take account of the diversity of uses and the building

stock, and access to different forms of energy. Pressure has been put on, or a request put to, local authorities to develop those plans in a credible way and to work with providers of different services—network companies and so on—to move the plans forward. Local authorities are the parties that should best understand local conditions and they are also democratically accountable to people in those areas and should represent them and consult with them, so the stakeholder aspect comes in strongly there.

I see an analogy for land use. Who are the best people to take on that co-ordination role? That is the big change from the recent past. For the past 20 or 30 years, things have been left alone to somehow emerge—it has been left to individual policies and market drivers to bring about outcomes. There is now a recognition, however, that a degree of co-ordination is needed, for example, to get the data in order to understand what the land is like, what condition it is in and what it might be used for, and to add that up and understand what the total mix would imply. The point about stakeholders is very important. The plans have to have broad support, so we need to ask who the right people to provide that support would be.

As Chris Stark said, it is an intriguing idea. Some parties may already be in a reasonable position to do that. If not, that is a huge gap that needs to be filled.

The Convener: Finlay Carson has another question that he would like me to ask; I will see if I can get it right. Basically, he wonders whether there is a weakness in the forestry proposal, which is the difference between the approach of maximising carbon capture through encouraging planting of more broadleaves, and the industry's need for more softwoods, which would probably not achieve carbon capture so well. I ask Chris Stark to answer that briefly.

Chris Stark: I confess that I have not looked at the detail, but I can say that our assessments do not assume that it is all softwood and rapid-growth trees that will deliver the carbon sequestration that we think we need across the UK. We have allowed for native species that take quickly in our assessments. Hardwoods typically take longer to grow, but it is good to have them in there because they typically bring greater biodiversity benefits, greater benefits to nature and greater amenity to people who use forests as they are created and grown. I would like to see that, but I cannot make a critical appraisal of whether the current plans for forestry deliver it.

The Convener: I think that the concern is that we are going more towards softwood, having planted a lot of hardwoods in previous years, which means that the industry is facing a lack of available trees in 2035. I think that that was the point of the question—I apologise to Finlay Carson if I got it wrong.

Stewart Stevenson: I have two questions, on subjects that are only slightly connected, but to save time I will ask them together.

First, there is a mention of bioenergy in the updated plan. How important is that? The UK's biggest thermal power station at Drax is now using a lot of wood to burn as a bioenergy source, but I understand that almost all of it travels from the other side of the world. Is that a huge risk? Is that worth doing, or is what is going on at Drax just greenwashing?

My second and slightly related question is on the role for blue carbon. In my constituency, there is a pilot operation at St Fergus, just north of Peterhead, which basically uses gas from the North Sea to produce hydrogen, which gets pumped into the gas network. That is one example.

What value is there on those two things? I am not sure which of you would wish to start, so it might be hands-up time.

The Convener: Or look-the-other-way time. Keith Bell's hand went up quickly, however, so we will go to him.

Professor Bell: I am conscious that I have been leaving a lot to Chris Stark although, to be honest, he is better informed on many of these things than I am. Energy ought to be something that I am informed on, however.

Bioenergy seems to be an important part of the overall picture. The idea that we can get negative emissions by growing energy crops, burning them, capturing the CO_2 and storing it in a geological formation for many millennia is a part of the climate change plan update. I have pointed towards significant negative emissions partly as a modelling artefact or a way of getting the models to converge and giving some sort of solution, maybe. It is very ambitious, however.

The big challenge with bioenergy is that it is competing with many other things when it comes to land use, as we have discussed. We have to prioritise bioenergy for the things that need it most. That means not depending on bioenergy for heating buildings, for example. It is really important to get it across that bioenergy is part of the mix, but that there is a question of scale and ensuring that it does not interfere with some of the other uses of land that we have discussed.

Stewart Stevenson: Is there actually land that is suitable only for bioenergy? Are we seriously going to plant for bioenergy and stop planting for other purposes?

Professor Bell: I do not honestly know the answer to that in any detail. I have heard about schemes and proposals to try to make use of land that is not used for very much else. I do not know what happened to it, but I remember reading about a proposal to plant loads of bioenergy crops in the spaces between some of the facilities at Manchester airport. That covers a very large area and, we hope, it will not interfere with access for things that we need access to. I guess that there are ideas out there. I do not know how much they add up to, but there is some potential. I do not know any detail, however.

Chris Stark: I have a few things to say on that. First, there are some crops that show potential to be grown on what would otherwise be barren land. That is an interesting development. In our assessments, we are in no way constraining the supply of food by suggesting that we should be increasing biomass for bioenergy purposes.

Going back to a point that I made earlier, there is enough room to deliver a whole set of services that are not presently being delivered from the land, and that includes the growth of energy crops. That is a new revenue stream for farmers, for which they may well be thankful.

We use bioresources sparingly across the economy in our assessments. Biomass becomes a very valuable resource. It is a substitute for fossil fuel use in many sectors—we can think of it as a way of producing jet fuel or being used in power production, for example. It becomes very valuable, so we should therefore expect it to carry quite a high price into the future, and we want to use it sparingly in the right sectors.

In our assessments, we try to use biomass where we can get the biggest bang for our buck, which is usually in coupling it with carbon capture. Growing bioresources and having the capacity to capture the carbon from them and store it in the North Sea is an appealing service when it comes to reducing greenhouse gas concentrations in the air, and our emissions. So why not do it? Those are really useful things. They are markets that have not yet developed from which Scotland stands to benefit a lot. That is the big message.

11:30

The Scottish Government refers to that new sector as negative emissions technologies, or NETs. They have crept into the plan, and they rapidly increase in it, so that negative emissions are achieved using bioresources with carbon capture and storage. It seems that most of that will happen in the power sector in Scotland. What is being proposed is that we grow bioresources in Scotland, use them in a power station in Scotland, capture the carbon and store it. That gives those negative emissions to quite a substantial degree by the end of this decade.

The challenge of developing a power station for BECCS, as we call it—bioenergy with carbon capture and storage—is pretty significant, and it would need to be supplied with indigenous resources in order to get negative emissions credits for the Scottish emissions profile. That is a very big step that the Government is taking, which, I suspect, is again being driven by the 2030 target that I have talked about a few times.

The 2030 target is really difficult to achieve. The models try to achieve it by having lots of negative emissions in there—lots of bioenergy with CCS—and we can see that in the line in the plan's target for negative emissions, and in the extra ambition in some other sectors, notably in how we decarbonise in buildings.

A lot of that is an artefact that arises from having a target that, to my mind, is too stringent, that cannot easily be modelled and for which it is not easy to make policy.

Stewart Stevenson: When I talked about blue carbon, I was actually talking about blue hydrogen, which I should not have been. Chris Stark has answered the question that I should have asked.

The Convener: Peter Chapman can ask a brief supplementary question before I go to Angus MacDonald, who has sat quietly during the entire meeting but who has a question for the end.

Peter Chapman: Given that, in this country we are only 60 per cent self-sufficient in growing food to feed our population, and that there is a huge expansion in population across the world, what do panel members think about using the best arable land for bioenergy rather than for feeding people?

The Convener: We must not be controversial. Keith Bell, would you like to answer first, before I go to Chris Stark?

Professor Bell: The first thing that we have to do is to feed people. A consideration of the most efficient way of doing that points to not having a huge dependency on meat, among other things. We have talked about bioenergy and the approach that the climate change plan update seems to point towards in Scotland.

On a global scale, we can be quite sceptical about the competition for land between biocrops and agriculture. My understanding is that agriculture is the priority. However, that needs to be done in an efficient and effective way. Bioenergy is almost a last resort in using land that, as Chris Stark said, has limited potential for other uses and for energy sectors that are difficult to decarbonise in other ways.

Peter Chapman: However, realistically, you have to recognise that, basically, in the UK, the best arable land is growing those biocrops.

The Convener: I ask Chris Stark to answer that briefly.

Chris Stark: It is not just about planting energy crops. We talk a lot about things such as miscanthus and short-rotation coppice. The forestry sector produces a lot of the bioresource that might be used in the energy sector. We call that the thinnings—the forestry is thinned out so that the best trees can grow more effectively. That is a useful resource. It does not have many other uses, so it is sensible to use it in the energy process to capture carbon.

We do not see that planting energy crops would compromise our ability to deliver the food that we need to supply to people living in this country. There is room to do both, and I agree that the best arable land should not be turned over for that purpose, because it is not necessary to do so.

The Convener: I will come to Angus MacDonald, who has been very quiet. Angus, now is your chance.

Angus MacDonald (Falkirk East) (SNP): Thank you. I may have been quiet, but I have been listening intently to our fascinating and useful session. Thank you for your indulgence, convener, given the time constraints.

The witnesses may be aware that the Parliament's Environment, Climate Change and Land Reform Committee, on which I also sit, recently published its report on the green recovery from Covid-19. We made a number of recommendations, including, as part of our route map to a green recovery, the need for detailed long-terms plans for agricultural policies, which has been touched on today. We also recommended that

"additional resources be provided for enhancing advisory services ... including the provision of free advice for farmers, crofters and other land managers",

which, as you know, convener, goes back to the good old days.

The report also recommended that

"the work under the Strategic Research Programme should better align directly to"

the advice given to farmers and crofters, and that

"regional land use partnerships and frameworks be developed into regional delivery mechanisms for new land use policies",

as Chris Stark has touched on.

Those are just a few of the recommendations in the report, and some of those matters have already been discussed this morning. Does the current Scottish Government action, including the policies and proposals in the draft CCPU, maximise the potential of the agriculture and land use, land use change and forestry sectors to play a role in a green recovery from Covid-19?

Chris Stark: Given the tone of my comments so far, it will probably not be a surprise that I do not think that it does. We are certainly not anywhere close to an optimal set of policies or an optimal plan for the future, in particular on the issue of the improvement of management practices on farms, and the need for better—[*Inaudible*.]—support for that. We have lots of evidence of a large gap between, in particular, the best and worst performing farms. There is a big distribution in yield rates from those farms. That is not a climate issue—we need to tackle it irrespective of soils and climate. Therefore, the policy could focus on better management practices generally.

A lot is promised in the plan, but we do not have the details of how it will be rolled out. There are promising suggestions about what could come next, but it seems that we will have to wait a few years to see the policies that will deliver those things. It feels a bit as though we have kicked the can down the road in that regard; therefore, we will lose the opportunity to do some of the skills retraining and employment support during the pandemic as we come out into economic recovery. We should be thinking about upskilling that sector so that we are not waiting until 2023 or 2024 for a new policy to come along but are thinking of it now as firmly part of the package of support for the Scottish economy as we emerge from the economic impacts of the pandemic.

Professor Bell: I would not disagree with any of those recommendations, but it is a question of the time and impetus to get moving on those things. The reskilling and upskilling agenda to, we hope, recover from the economic impacts of the pandemic on individuals is important, but it is not a quick win. It takes time to get college capacity in place. If students are to be encouraged to come along, we have to understand where they are coming from and the financial impact on them, and we have to give them confidence that the jobs will be there to make use of their new skills. The policy has to be developed in a strategic way. It is absolutely essential, but it is not necessarily a very quick win. However, we have to facilitate such longer-terms changes to the economy.

The other thing in the recommendations that Angus MacDonald touched on was research, which is part of my day job as a university academic and researcher. Improvements could definitely be made to the way in which the Scottish Government procures research to inform its decisions and to support different sectors of activity in Scotland. In my experience, the

approach seems to be quite short-termist. I do not always get the impression that the people who are procuring research projects see the bigger picture or the value of research in the longer term, so improvements could be made. Again, that touches on many of the things that we have talked about with regard to having better information and data.

Angus MacDonald: Taking on board what has been said, the enhanced advisory services that were part of the recommendation will go some way towards enabling upskilling and reskilling. The salient point is that it must be free so that nobody in the farming and crofting community is disadvantaged in any way.

The Convener: Keith Bell, do you want to comment on your services being free?

Professor Bell: We have to ensure that the budgets are correct to give access to educational services. The financial implications in the short term of the provision of grants must be considered. There is an impact on the Scottish Government's budget, and the issue is competing with other things.

On investment for the longer term, education is fundamental. It is about not just university-level education but further education colleges, agricultural colleges and so on. None of those things can be forgotten about. Investing in education for future skills and for people's ability to determine things for themselves is essential.

The Convener: That brings us to the end of our questions. I thank Chris Stark and Keith Bell for their input. I have thoroughly enjoyed listening to all the points that you raised. I found it incredibly informative and quite a call to arms across many industries on all the things that we need to do. I am sure that the rest of the committee members think the same. Thank you—it was very useful.

European Union (Withdrawal) Act 2018

Fertilisers and Ammonium Nitrate Material (Amendment) (EU Exit) (No 2) Regulations 2020

Official Controls (Temporary Measures) (Covid-19) (Amendment) Regulations 2021

11:42

The Convener: Item 2 is consent notifications in relation to two UK statutory instruments. The instruments are being laid in the UK Parliament in relation to the European Union (Withdrawal) Act 2018. Some issues are brought to the committee's attention in our papers.

In relation to the Official Controls (Temporary Measures) (Covid-19) (Amendment) Regulations 2021, the Scottish Parliament is being given only three working days to consider the notification. The reason given by the Scottish Government for the urgency is that it received a draft of the instrument from the UK Government only in recent days and that the UK Government intends to lay the instrument on 21 January 2021.

The instrument is being made in response to the Covid-19 pandemic, to allow certain relaxations of the rules, referred to as "easements", to continue until 1 July 2021. The easements would otherwise have expired on 1 February 2021. Other than providing that context, the Scottish Government has not explained why it is not possible to give the Scottish Parliament more time to consider the matter.

I see that there are no comments. Therefore, does the committee agree to write to the Scottish Government to confirm that it is content for consent to be given in relation to the UK statutory instruments referred to in the notification?

I do not see any dissent—I see nods of agreement, so that is agreed.

Seed, Plant Propagating Material and Forest Reproductive Material (EU Exit) (Scotland) (Amendment etc) Regulations 2020 (SSI 2020/445)

The Convener: Item 3 is the sift of one Brexit-related Scottish statutory instrument. The Government has allocated the negative procedure to the SSI. Is the committee agreed that it is content with the parliamentary procedure that the Scottish Government has allocated to the instrument?

Again, I am seeing nods rather than shakes of the head, so that is agreed.

Subordinate Legislation

Seed, Plant Propagating Material and Forest Reproductive Material (EU Exit) (Scotland) (Amendment etc) Regulations 2020 (SSI 2020/445)

Fish Farming Businesses (Reporting) (Scotland) Order 2020 (SSI 2020/447)

11:45

The Convener: Item 4 is consideration of two negative instruments. The Delegated Powers and Law Reform Committee has considered the instruments and has reported the Seed, Plant Propagating Material and Forest Reproductive Material (EU Exit) (Scotland) (Amendment etc) Regulations 2020 for failure to lay the instrument in accordance with the laying requirements. The DPLR Committee nevertheless notes that it is satisfied with the explanation that the Scottish Government has given to that committee for the failure to comply with the rule.

One representation has been received on the Fish Farming Businesses (Reporting) (Scotland) Order 2020 from Salmon and Trout Conservation Scotland, which is included with the papers.

No motions to annul have been received in relation to the instruments. I do not see any comments from members, so I propose that the committee does not make any recommendations in relation to the instruments. Is that agreed?

It appears that it is agreed.

The committee's meeting next week, on 27 January, will be another evidence session on the climate change plan and will cover the parts of the plan that relate to transport. We also have three SSIs and two SIs on the agenda.

Meeting closed at 11:46.

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