OFFICIAL REPORT
AITHISG OIFIGEIL

# Net Zero, Energy and Transport Committee

**Tuesday 23 April 2024**

Session 6

The Scottish Parliament
Pàrlamaid na h-Alba

# Tuesday 23 April 2024

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## NET ZERO, ENERGY AND TRANSPORT COMMITTEE
**14th Meeting 2024, Session 6**

**CONVENER**

*Edward Mountain (Highlands and Islands) (Con)

**DEPUTY CONVENER**

*Ben Macpherson (Edinburgh Northern and Leith) (SNP)

**COMMITTEE MEMBERS**

*Bob Doris (Glasgow Maryhill and Springburn) (SNP)
*Jackie Dunbar (Aberdeen Donside) (SNP)
*Monica Lennon (Central Scotland) (Lab)
*Douglas Lumsden (North East Scotland) (Con)
*Mark Ruskell (Mid Scotland and Fife) (Green)

*attended

**THE FOLLOWING ALSO PARTICIPATED:**

Professor Keith Bell (Climate Change Committee)
Chris Stark (Climate Change Committee)

**CLERK TO THE COMMITTEE**

Peter McGrath

**LOCATION**

The Mary Fairfax Somerville Room (CR2)

# Scottish Parliament

## Net Zero, Energy and Transport Committee

*Tuesday 23 April 2024*

*[The Convener opened the meeting at 09:17]*

## Decision on Taking Business in Private

**The Convener (Edward Mountain):** Good morning, everyone, and welcome to the 14th meeting in 2024 of the Net Zero, Energy and Transport Committee. The first item on the agenda is a decision on whether to take items 3 and 4 in private. Item 3 is consideration of the evidence that we will hear from the Climate Change Committee today, and item 4 is consideration of our work programme, including the initial approach to our scrutiny of the Land Reform (Scotland) Bill at stage 1. Do members agree to take those items in private?

**Members** *indicated agreement.*

## Climate Change Committee's Review of Scottish Emissions Targets and Progress Report 2023

09:18

**The Convener:** Item 2 is an evidence session with the Climate Change Committee to discuss its annual report for 2023, "Progress in reducing emissions in Scotland—2023 Report to Parliament", on progress towards meeting Scotland's emissions reduction targets. The session is also an opportunity to explore with our witnesses last week's announcement by the Scottish Government on Scotland's climate change targets, which was made in response to the report.

I am pleased to welcome from the Climate Change Committee Chris Stark, the chief executive, and Professor Keith Bell, Scotland's champion. Thank you for joining us. I think that you are going to make some brief opening remarks. Chris, I guess that, as this is your last opportunity, you will go first.

**Chris Stark (Climate Change Committee):** I am happy to go first, convener. Thank you once again for the invitation to speak to the committee. I am glad to have one more go on the waltzer before I head off from the job later this week.

I will be brief. We published our annual Scottish progress report late this year. We did so because we had hoped to review the Scottish Government's new update to its climate change plan, and we do not have a climate change plan to review.

My central concern, which I have always had in this job, is that, in this area, policy really matters. If we want to reduce emissions, we need policy to steer what happens in the private sector and to steer the incentives for decarbonising the Scottish economy. That is extraordinarily difficult when all that we have, in the main at least, are consultations and promises.

In our progress report, we were pretty critical—well, we were damning, actually—of the Scottish Government's performance. What has happened since is a series of events that have changed the landscape for climate in Scotland quite substantially, on net zero in particular.

We said two very important things in our progress report. First, we said that the annual target for emissions reduction had been missed again, meaning that it was the eighth time in the past 12 years that the target had been missed. More importantly, we said that the 2030 interim

target that had been set to reduce emissions by 75 per cent from 1990 levels was beyond credible. We thought very carefully about whether, and how, to say that, but we felt that the time had come for us to call that target out. Hitting it would require a ninefold increase in recent rates of decarbonisation in the Scottish economy. We do not see a policy package that could deliver anything close to that, and we felt, therefore, that it was important to say that we felt that the target could not be met.

The final point that I will make in my opening statement is about what has happened since. First, the Scottish Government is due credit for acknowledging that the 2030 target cannot be met and for taking the—no doubt difficult—step of announcing that to the Parliament. Indeed, the Government is also due credit for retaining, as I understand it, the 2045 net zero target, but leaving open the idea that a new path to that target can be found on the advice of the Climate Change Committee next year.

However, these are very dangerous moments. Scotland is the first part of the United Kingdom that has felt that it has had to withdraw targets under any of the climate change legislation that we have in place. My biggest worry is that we find ourselves in a position in which we have, in a sense, empty-vessel legislation. We have a 2045 net zero target in law, but we have nothing much beyond that for the next few months. My experience, from the six or seven years in which I have done this job, and from my time in the Scottish Government prior to that, is that, when there is a vacuum around a topic or an area, it is often filled with nefarious voices on the issue. I would not wish that to happen.

Shortly, a bill will be introduced to the Scottish Parliament that will, in a sense, redraw Scottish climate change legislation fundamentally. Although it was described as a “minor” change, it is, I think, quite a fundamental change. Keeping the 2045 target is reassuring, but not having something to guide the short term concerns me. We need, therefore, to look to the strength of the policies that the Scottish Government brings to the Parliament in the next 12 months as a test of how serious the Government really is about its climate credentials. That is what I, and my institution, the CCC, will be looking for. It is policy that matters.

My final point is that policy matters more than targets, but incredible targets cannot be met. I am sure that that has been part of the problem—we have had a target for 2030 that could not be met in any practical sense, and there was a legal obligation on ministers to provide a plan for that target that could not be discharged.

We must not find ourselves in that position again. There is a credible path to net zero by 2045 that goes through ambitious targets for 2030 and 2040, but we need to be realistic about the steps that the country can take to get to that goal by 2045.

**The Convener:** Thank you very much. There were two final points there. We finally have the pleasure of your company, and I am delighted that you are back and being as pithy as you have been.

Keith, do you want to make an opening statement?

**Professor Keith Bell (Climate Change Committee):** There is very little to add to what Chris Stark has said—he expressed it very well.

I will re-emphasise the pathway part of things. The pathway to a net zero target is critical, from a global point of view, in relation to the emissions that are already happening, the climate change that is built into the system, the credibility of the end target and the pathway there. That is about showing the commitment of policy makers, but it also relates to the supply chain and the transition. There is a step change in a lot of these things; these are big changes across society. A step change is not, to use this word, incredible or incredible; it is not inconceivable.

Things have to be ramped up and, as Chris Stark said, policies must be put in place to enable that. It is not just about public sector action, as critical as that is; it is about setting the scene for private sector action. That vacuum that Chris Stark mentioned must be filled. We need to reassert the importance of reducing greenhouse gas emissions, of adapting to climate change and of putting in place and delivering on policies.

Even if there are no interim targets for 2030 and before we get to 2045, policy must be delivered as though there are targets because of the importance of that transition and pathway. That still has to be defended and argued for, and detailed policy still has to be developed and delivered.

We have been fortunate in having cross-party support for action on reducing greenhouse gas emissions. In the difficult and challenging period that Chris Stark mentioned, it is really important that that cross-party support continues, that the voices in favour of action on climate change continue to be heard and that those arguments continue to be made, because there are lots of positives with the transition, including new opportunities across the economy, good heating, cleaner transport, cleaner cities, a cleaner environment and so on.

**The Convener:** Thank you. Before we move to questions, I remind members of my entry in the register of members’ interests. I am a member of a

farming partnership that produces quality beef, which might create problems as far as methane is concerned. I want to make that clear at the beginning just in case that comes up in the conversations this morning.

The dust is still settling following the statement that the Cabinet Secretary for Wellbeing Economy, Net Zero and Energy made last week. We heard that new legislation will be introduced to replace the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019. The committee does not yet know what that legislation will be or what the timeframe for it will be. Your warnings about making sure that proper targets and a pathway with policies are included are pertinent, but we will see how things develop in the coming weeks.

My first question to Chris Stark is probably an easy one. I would guess that, by last year, a lot of politicians were hearing that it was not possible for Scotland to reach the 2030 target. When did it become clear to you that there was no way that the Government could reach its 2030 target?

**Chris Stark:** The honest answer to that is that it became clear this year. We had deep concern about the setting of the 2030 target when it was put into law. We said that we had no path to hit it, but we made suggestions to the Scottish Government and Scottish ministers about steps that could be taken to go beyond the pathways that we had for the whole of the UK.

At that point—Keith Bell might wish to chip in here—we felt that there was still a route to the target, albeit an unlikely one, but this year it felt as though it was a bridge too far. We always monitor progress towards the target. In particular, we have recently discovered quite a neat way of looking at the gap, which is by looking at the change in pace that is required to hit the 2030 target—we also did that for the UK, incidentally. A ninefold increase was required when the low-hanging fruit, in a sense, had already been picked from the power sector. We felt that that was beyond the pale. We felt that we had to say something this year, but the straws had been in the wind for a while. The 2030 target has always been on the upper edge of credibility.

**The Convener:** When the climate change plan was delayed, did that not ring all sorts of alarm bells for you?

**Chris Stark:** I am not in the Scottish Government, but I am fairly confident that I know the process that was happening in the Scottish Government, because the Climate Change (Scotland) Act 2009 is very clear about the obligations that fall on Scottish ministers. They must produce a plan that, in outline at least, shows how the targets will be hit. If we cannot produce a plan to show how the 2030 target will be hit, I am sure that there will have been the same problem internally for officials in their conversations with ministers. In such circumstances, the Lord Advocate would not allow the Scottish Government to publish a plan that was not legal. I think that, in this case, that is what has happened. In a sense, that probably means that that overambitious target has been holding up genuine action from policy makers. That is a good example of what happens when you have the wrong target.

**The Convener:** The climate change plan should have been published in late 2023, so you should have had concerns last year, rather than just this year.

09:30

**Chris Stark:** We sought and got undertakings from officials that there would be a plan for us to review and, with some correspondence with this committee, we chose to delay our annual progress report to the Parliament to allow us to review the plan. That gives a sense of how we felt things were supposed to play out. I do not mind saying that there was quite a bit of disgruntlement in the Climate Change Committee about the fact that we had delayed. We take our statutory responsibilities very seriously in the Climate Change Committee, and we had to delay publication for three whole months. That is not a good look. We did that because the undertakings could not be delivered.

**Professor Bell:** It was always challenging. It would still have been difficult even if the Scottish Government had put its foot to the floor right from the very beginning, by ramping up actions across key parts of the economy. However, if we are on a pathway that gets us to a 75 per cent reduction by 2031 or 2032, that is still worth having, even if it is not quite 2030. We were progressively more concerned as the actions were not quite coming. As Chris Stark said, it felt as though we were having consultations about consultations some of the time. In the end, there was a sort of paralysis in the face of the daunting challenge of getting everything done by 2030.

When we get to the point at which we are not going to develop engineered removals by a certain date, for example, even with the most optimistic outlook, we have very strong reason for saying that the target is just not credible.

**The Convener:** Let us go back to this point, so that I fully understand it. We were told that the climate change plan would be delayed last year. Surely that was the moment—if it was not before—when the Scottish Government understood that it was not going to meet its targets.

**Chris Stark:** I cannot speak for the Scottish Government, but I am pretty sure that it will have known about that before then.

**The Convener:** So, it misled the Climate Change Committee and this committee on the fact that a climate change plan was coming, knowing that it could not meet its targets.

**Chris Stark:** I cannot answer for the Government, but I know that the legal obligation in the 2009 act is very clear. Ministers must produce a plan that shows how the targets will be met. If it subsequently becomes obvious that it did not hit the targets, that is a different matter, but it needs to have a plan that at least shows in outline how the targets will be hit. I am sure that that was one of the difficulties in putting out the plan.

**The Convener:** I will pick up on one of your comments—that you are pretty sure that the Government knew about the situation before the delay last year. When do you think it did know?

**Chris Stark:** I genuinely do not know. Right up until the second half of last year, we thought that we would see a climate change plan that we would review in our update. I was not privy to the discussions that took place on that in the Scottish Government.

**The Convener:** I remember you saying to the committee, when we had our annual review, that you would be reviewing the plan, and that is why you were delaying.

**Chris Stark:** That is right. Believe me: for reasons of resource planning, it would have been much better for us to have produced the Scottish progress report at the tail end of last year than now. Frankly, we were annoyed, for all sorts of reasons, that we did not get that plan, and the delay was not helpful to us in any way. We are currently in the midst of an enormous programme of work for the next UK carbon budget.

**The Convener:** It sounds as though we were both misled—me and this committee, and you and your committee.

**Chris Stark:** Those are your words, not mine.

**The Convener:** Jackie Dunbar will ask the next questions.

**Jackie Dunbar (Aberdeen Donside) (SNP):** Good morning. I am interested to hear your views on what it would have taken to reach the 2030 target. You are saying that things needed to be wrapped up and the pedal needed to be put to the floor, but what does that mean in real terms?

**Professor Bell:** I will have a first go at answering that, and Chris Stark can fill in the bits that I miss out.

On the biggest emitting sectors, we are seeing a lot of continuing progress in electricity. A lot of action is needed on industrial emissions and emissions from buildings, transport, land use and agriculture.

**Jackie Dunbar:** What kind of action?

**Professor Bell:** Things such as replacing heating systems in buildings—homes and commercial buildings. As for action on land use, the rates of peatland restoration are not what they should have been, and other actions include planting new trees. There must also be some sort of plan to reduce the number of miles that are travelled by combustion-engine vehicles. Lots of nice words have been spoken about those actions, and the 20 per cent reduction in car kilometres is a great aspiration—I would love to see policies that will deliver that.

Those four big sectors, aside from electricity, have basically flatlined in the interim. However, even if we took all of the necessary actions—got the supply chains up, got the public transport systems moving and delivered a modal shift in the way that people move about—it would still be hard to meet the 2030 target. Engineered removals, such as bioenergy and carbon capture and storage, are important in that regard. There are issues in relation to where the biomass is coming from in land use and from the point of view of the engineering of the carbon capture and storage, which we are still not seeing at scale—the Acorn project is starting to be developed, and there are a couple of things down in England, but that is all taking time. The situation is very challenging.

**Chris Stark:** We sent a useful and concise letter to the then cabinet secretary, Roseanna Cunningham, in late 2020, which made several points. It is worth reviewing that, and we can send it to you after the meeting.

First, it said that the 75 per cent target goes beyond anything that we have in our modelling. Secondly, it said that, if the Government wanted to hit the target, we thought that there was a way to do it, but that we had not been able to model it perfectly, because it went beyond even our most advanced pathway. We said that the Government needed to do everything that we have in our most ambitious pathways—that includes all the things that Keith Bell has just talked about, such as decarbonising transport, the built environment, industry, farming and so on—in line with our UK-wide scenarios, and then go further. We named four or five areas where we felt that it was possible to go further, and we put those on the table as speculative options for Scottish ministers to pick up if they wanted to hit the 75 per cent target.

The first was going faster on greenhouse gas removals, which is an engineered process for

taking carbon dioxide out of the atmosphere. We felt that there were opportunities to do that through bioenergy with carbon capture, or direct air capture. The second was that there could be an early start to the decarbonisation of the Grangemouth cluster. Of course, the Grangemouth situation has moved on since we produced that letter, but we felt that there was an opportunity to go faster on the Grangemouth decarbonisation plan, albeit that that would be an expensive step. The third area involved early scrappage, which is when a high-carbon asset is taken out of use early. Good examples of that would be schemes to take boilers out of action or cars off the road early and replace them with something cleaner. Again, doing such things does not tend to be cheap. The last thing that we talked about was a technology called a hybrid heat pump, which sits alongside an existing fossil fuel system but allows people to use a heat pump for the majority of the year, which means using a smaller heat pump alongside a gas boiler, for example. That could be rolled out immediately, so you do not have to close down a gas grid to have a hybrid system in play.

All of those actions are meaty and difficult to do but, when we sent that letter, those options presented a path to the 75 per cent target. They were not picked up by Scottish ministers, I suspect because of wider events such as the situation that we found ourselves in after the pandemic, the subsequent crisis after the attack on Ukraine and, of course, the cost of living crisis. Nonetheless, those options were on the table at the time when the target was set.

**Jackie Dunbar:** You spoke about cars being taken off the road. Did you mean fossil-fuel cars or electric ones?

**Chris Stark:** I meant the high-carbon vehicles: petrol and diesel ones.

**Jackie Dunbar:** There is carbon in electric cars, too.

**Chris Stark:** There is, but it does not cause emissions.

It is important to say that, although those are options, I fully understand why they were not taken up by ministers: they are not palatable options, and they are very expensive. The situation that we are facing has come about purely because the target was too high. We did not recommend those sorts of actions for other parts of the UK, because they are so far out of kilter with the steps that we feel that the country needs to take overall.

**Professor Bell:** I want to add to the point about scrappage, which is important, and speak about a pathway and the transition.

A gas boiler might last for 10 years, at which point people will become worried about it breaking down, and they will want to replace it before it breaks down in the middle of the winter. Combustion-engine vehicles last a bit longer than they used to—somewhere between 10 and 15 years. At the point that people would be replacing something anyway, they could replace it with a low-carbon option. As the population of all those different bits of equipment changes over time, there will be a gradual transition during which everything is replaced with low-carbon stuff. Eventually, during a period of some years, all such things will be low carbon.

Early scrappage means, for example, replacing a boiler after five years rather than 10. That means that you are writing off those other five years, over which time you would have paid for it. It would mean getting a car with a combustion engine off the road after five or eight years. However, it also applies to big industrial equipment. Therefore, it is a big thing—it is an extra cost but you can do it. It is a way of going faster, albeit, as Chris Stark said, that it is an extra cost.

**Jackie Dunbar:** In order to reduce car use, are there any proven approaches already in place elsewhere that the Scottish Government could pursue in the short and longer term?

**Chris Stark:** We did a piece of work about 18 months ago. It was not a big piece of work, but we have been looking at the Scottish Government's commitment to reduce car miles travelled by 20 per cent, which, as Keith Bell said, would be a major step forward. It is very good that the cabinet secretary has committed to publishing a delivery plan for that later this year—with a date attached to it, which is also good—and we should see that by October.

However, I will say here that I am dubious about any plan being successful in delivering the 20 per cent reduction, because the actual requirements that are needed in order to pull that off are pretty big. We have some evidence of other schemes around the UK and, indeed, attempts in Scotland to do similar things. Probably the most interesting of those is the London congestion charge. You would need to see, every year between now and 2030—I think that that is the target—a scheme with the success of the first year of the London congestion charge in reducing traffic to believe that that target can be hit. Maybe the Scottish Government has a plan to do that—I would love to see it—but it took years of planning for London to introduce the congestion charge, and we have not had that kind of planning in cities across Scotland.

We have low-emission zones, which is a step towards that, but one of the other challenges in Scotland is that we travel further distances because we are more rural. Therefore, it is an

extraordinarily difficult target to hit. That does not mean that it is not worth trying, but it is a very difficult target.

If the goal is to reduce emissions from transport, the quickest way to do that is to switch vehicles that are on the road from high carbon to low carbon. Travelling less has an impact, but it is marginal in comparison to the switch from petrol or diesel to electric. Again, I give credit to the Scottish Government on that. The goal needs to be to make electric cars and vans as appealing a prospect as possible in order to deliver the emissions reduction that is necessary in the surface transport sector.

**Jackie Dunbar:** What can the Scottish Government do to enable that switch to electric vehicles to happen that bit quicker?

**Professor Bell:** Users need to have confidence, especially in the charging infrastructure: they need to have confidence that the infrastructure is available. That is especially the case for people who do not have off-street parking, so users want to know that there is on-street and destination charging—charging in car parks at shopping centres, leisure centres and places of work, for example—and that those charge points are reliable. People have range anxiety before switching to electric vehicles. As Chris Stark will know, as I think that he now has an electric vehicle, long journeys in an electric vehicle take a bit of planning. If you get to a charge point and find that it is not working, that really scuppers things, and word gets out about that. It does not take too many bad stories to mess up the public perception of the whole thing, so it has got to be done well.

A couple of years ago, an inquiry by the Competition and Markets Authority into electric vehicle charging resulted in some recommendations on reliability and the need for regulation on that and on pricing, especially of the high-power—[*Interruption*.]—rapid charging. Again for the—[*Interruption*.] Excuse me, we are both coughing away.

**Chris Stark:** It is a CCC cough.

**Professor Bell:** Yes. Therefore, especially for longer journeys, rapid charging becomes really important, but there is not proper competition driving down those prices at the moment, and the CMA pointed to some pretty uncompetitive practices with regard to the length of contracts and so on. All those things are ways in which policy makers can improve the whole outlook and the prospect of switching to electric vehicles.

The market has been moving anyway, which is good news. However, I heard some numbers on the radio on my way to the meeting this morning that showed that things have not been looking quite so good over the past year. However, for the past few years, electric vehicles have been proving popular. Once people get them, they like them, so that is the positive story that can get out. However, that does not mean that we can leave everything to the market, especially when it comes to the charge points.

09:45

**The Convener:** Bob Doris wants to come in on that, after which he has some other questions to ask.

**Bob Doris (Glasgow Maryhill and Springburn) (SNP):** Of course, the Scottish Government does not work in a policy vacuum. In January—I double checked this during Jackie Dunbar's line of questioning—*The Guardian* reported that global car manufacturers had lobbied the UK Government. Just before that, the UK Government moved its target for ending the sale of petrol and diesel cars from 2030 to 2035. Can you say a bit about the extent to which UK Government policy levers might compromise some of the ambitions that we have here in Scotland in relation to cars, given that we do not operate in a policy vacuum?

**Professor Bell:** That is true. It is not a policy vacuum; the market for the sale of cars extends across the UK. That has to be recognised. It is very difficult for Scottish policy to be set independently of that.

The zero emission vehicle mandate is potentially a really powerful policy mechanism. Essentially, it requires the manufacturers to ensure that a growing proportion of the new cars that they sell are very low emission vehicles. Given that there is a strong penalty for not meeting those targets, we would expect the manufacturers to respond to that.

It is not very good news that the target date for getting down to no new petrol and diesel cars—100 per cent low-emission vehicles and zero per cent high-carbon vehicles—has been pushed back by five years, but the market might be getting towards that anyway. There is a certain tipping point. The target is likely to be met as that proportion ramps up and all the infrastructure is provided to support it.

Some debate could be had about what material impact that five-year delay will have. Although the mood music—the perception that it gives—is not good, the jury is out on whether it will make a material difference.

**Chris Stark:** I am on record—and I am happy to go on record again—as being very critical of what the Prime Minister achieved in the speech that he made in Downing Street last year on the topic. He made a speech about net zero in which he said

that he wanted to go more slowly on that aspect of the transition, but, in fact, he did not change very much at all. Although he changed the date by which we must stop selling petrol and diesel cars, moving it from 2030 to 2035, under the prior commitment, it would still have been possible for people to have bought a hybrid until 2035. Therefore, there has not been that big a shift. The change related to pure petrol and diesel cars, which, frankly, are on the way out anyway.

However, what the Prime Minister did was give the impression to anyone who was thinking about getting an electric car that they should wait, and I think that we can see the effect of that now. We track the monthly sales, and the proportion of sales of new cars that are electric has flatlined since he made that speech. It is still big, but it had been on a much steeper upward trajectory prior to that. It is hard to know whether that speech itself had that impact, but I suspect that it did.

The other thing to say is that, as Keith Bell said, the Prime Minister did not change the zero emission vehicle mandate on manufacturers. In other words, he has created a situation in which manufacturers are having to produce more and more electric vehicles, but the purchasers and consumers of those vehicles are not being given the signal to buy them. It is quite a difficult thing to have done.

Twelve months ago, I was very optimistic about the speed at which the electric vehicle transition was happening. Sadly, I think that it has been slowed. It will track upwards very quickly when cheaper vehicles hit the market, but I rather wish that that uncertainty had not been introduced.

**Bob Doris:** The cabinet secretary has spoken about a four-nations approach. We need to work together in this area. I am conscious that the committee is here to scrutinise the Scottish Government, but does the Climate Change Committee map such policy divergence, or differences in the pace or tone of policy? Is there anything that sits in one place that we can use to analyse the interaction between UK policy and Scottish policy to see what the impact has been on Scotland meeting its targets, so that, as a committee, we can get a better idea of where we are?

**Chris Stark:** We track that, and I am afraid that Scotland was already behind prior to the Prime Minister's speech—the proportion of sales in Scotland that were of electric vehicles was lower than that in the rest of the country.

**Bob Doris:** Before you expand on that, I point out that I agree that Scotland needs to do better. That is self-evident and undeniable, but, as I am relatively new to this committee, I want to know how we can map out stuff about how Scotland and the rest of the UK interact.

**Professor Bell:** Some information gets published, and we make some comparisons in policies, but we could, arguably, be a bit clearer in making them.

However, we have certainly spoken about such issues in the past. A few years ago, we pointed to areas in which Scotland seemed to be setting a lead. In the progress report to the Scottish Parliament in March, we pointed to the draft bill and the strategy on heat in buildings that were being developed as potentially really powerful elements that could provide an example to be followed by the other UK nations. There are positive and negative stories in comparisons—they can be useful in highlighting good examples that can be taken from one place, but they can also point out that places that used to have a lead no longer have that lead.

**The Convener:** Before Bob Doris uses that answer as a segue into his next questions, I will bring in the deputy convener, who is keen to ask a question about transport.

**Ben Macpherson (Edinburgh Northern and Leith) (SNP):** Last week, on 18 April, the Cabinet Secretary for Wellbeing Economy, Net Zero and Energy wrote to this committee setting out a number of steps that the Scottish Government will take to address the Climate Change Committee's concerns. One of those steps was a plan to deliver approximately 24,000 additional electric vehicle charging points by 2030. I presume that you welcome that but are awaiting the detail. Is that a fair assessment?

**Chris Stark:** As an electric car driver, I am delighted to hear that. Providing charging points is the best tool at ministers' disposal to support the faster roll-out of electric vehicles, which we should all want in Scotland. The mandate will apply across the UK and is in line with what the Scottish Government is trying to pull off.

We need to make the consumer experience for people with electric cars as simple as possible. As a driver of an electric car, I can tell you that things are not simple and that the charging infrastructure is not as good as it should be, so extra charging points will help.

**Ben Macpherson:** If those charging points can be delivered, that will be a significantly good outcome.

**Chris Stark:** Very much so. We very much welcome the cabinet secretary's commitment.

**The Convener:** I apologise for cutting off Bob Doris in full flow.

**Bob Doris:** It is fine, convener. Thank you for allowing me the opportunity to explore the interaction between Scottish and UK policy. I might come back in later to ask about the interaction between the finances and delivering our climate change ambitions.

Professor Bell prompted me to segue—or so I had thought—into a question about the proposed heat in buildings bill, so I will put that question now. In the 2023 progress report, you say that the proposals for the Scottish heat in buildings bill were "strong" and

"could act as a template for the rest of the UK",

so nations and regions could learn from one another. What impressed you about it? What elements of the bill could make a real difference?

**Professor Bell:** I will see what I can remember of the details. When the ownership of a home changes, that is a time to ensure that low-carbon heating is in place; there were some elements that I quite liked in that respect. I am a little worried whether the proposals relating to new homes being low carbon drive the right answer. For example, electric resistance heating, with the old-style storage heaters, might be very cheap to install but is expensive to operate. The right longer-term answer will depend on how much heating a home needs.

Things like that might be a bit scary for some home owners and home buyers, depending on what part of the chain they are in, but those things could be really powerful in ensuring that the transition happens. Support for social housing and so on continues to be important, too.

**Chris Stark:** The proposals potentially provide a template for the whole of the UK and, indeed, other countries around Europe to follow, so the heat in buildings consultation that the Scottish Government is conducting is very important. The element of the consultation that we are most keen on is that it makes it clear that we will not have fossil fuel heating by 2045—it will have been completely eliminated by then. That might seem an obvious thing to say, but we have not said it before, so it is important to say it now.

As Keith Bell has said, there is the controversial idea of placing an obligation on the purchaser, at point of sale, to switch out the heating system from something dirty to something clean. That is the kind of step that, over time, delivers the kind of smooth transition that we have just talked about, rather than some incredible transition.

The reason why I particularly like that is that it might appear to put a cost on the purchaser but, in reality, it puts a cost on the seller. Over time, the cost should become factored into the sale price of a property. It is the seller whom you want to target, given the huge increase in the value of property over the past 20 or 30 years. In a sense, you would be using some of the increase in property wealth that we have seen over the past decades to help pay for the decarbonisation of the building stock. I know that it is a difficult policy to push through, but it is an incredibly sensible way to do it.

The other element that we are keen on in the Scottish Government's consultation—this is another thing on which we have provided advice—is the proposal to change the basis of energy performance certification of buildings so that we give more credit for buildings that have been decarbonised. At the moment, the EPC across the UK is based on energy costs rather than carbon. The proposal would mean that, if you put a heat pump in a building, you would get more credit for that in the building appraisal.

**Bob Doris:** That was helpful. I know that the proposed bill will also introduce obligations with regard to energy efficiency standards in the private rented sector, ahead of those in the social sector. The private rented sector obligations are to be introduced by 2028, I think, because that sector has a much longer path to travel to make properties energy efficient.

All those things will theoretically be a nuisance, at the very least, or have a financial implication for the owner or purchaser of a property, or the owner of a business who is privately renting. We are all politicians round this table, and we know that, as soon as interest groups raise concerns, politicians' commitment to net zero can sometimes melt away, for political convenience.

**Professor Bell:** Things melting away is a sign of global warming.

**Bob Doris:** Indeed. That was a nice segue.

**Professor Bell:** How this is financed is the important bit. Chris Stark, as an ex-Treasury official, can pull out the overall economic implications. Another economic implication is that, once you have a low-carbon heating system—say, a heat pump—you use much less energy, because of the efficiency benefits. There is a bit of a UK Government dependency to do with the rebalancing and reconstitution of the way in which energy is priced—energy market reform is a key part of that—and the relative costs of gas and electricity. If people start using electricity and the volume of energy that they use is a lot lower, they should see the benefits of that initial investment over time.

This is a one-off investment. There is a lot of concern—and rightly so, because the change is disruptive and complicated. I myself am on that journey of trying to reconcile what various contractors are telling me about what I need to do

in my house to install a heat pump. When I replace radiators, do I need to replace all the pipework or whatever? How much it costs depends on where you are starting from, but you will do it only once. If all the market structures are set up right, you can reap the benefits of the lower cost of energy.

**Chris Stark:** The fact that the measure is in law and that it is a regulation that sticks will make the financing cheap and allow the supply chain for the installation of the measures to grow. The biggest barrier at the moment is that, if you want a heat pump, it is very difficult to find an installer. All of those things follow the same kinds of steps.

Again, I know that it is difficult politically to introduce such a measure, for the reasons that Bob Doris has just described, but it will have a huge impact once we normalise the installation of heat pumps. We know that it is after a sale that people make renovations to a property—that is the point at which people might replace radiators. It is therefore very important that we try to grab that opportunity as much as possible.

The other very clever bit about what the Scottish Government has consulted on is that it has said that large parts of Scotland will probably not be suitable for heat pumps and, instead, should be connected to things such as low-carbon heat networks and district heating. We now know where those zones are, and we can say to people in those areas that they can wait for that to roll through. That gives a lot of certainty to the people who live in those properties about how they will heat their homes in future.

10:00

**Bob Doris:** I have one final question, but I should first of all point out that we might be repeating your comments from the *Official Report* of the meeting in a few years' time, once those matters have come to fruition and the obligations are in place for the private rented sector, property owners, purchasers and the like. We just need to do this, because it is the right thing to do. There is also a longer-term benefit for businesses and home owners.

My final question is about the cost outlay, which will be challenging for a purchaser of a property, a landlord with a small number of properties or anyone living in a property. Professor Bell has talked quite a lot about the fact that none of this is cheap. We need to consider the budget at Scotland's disposal versus a four-nations approach to working together to decarbonise heating; after all, Scotland's funding does not work in a vacuum. Would it be helpful if the rest of the UK and Scotland worked in partnership and, if you like, to Scotland's timetable? That might release some capital to Scotland and allow us to identify cash that we could use to support households and businesses to do some of this stuff; it would mean that we would be able to share the cost between the private sector or the home owner and the public sector. That is the difficult situation that politicians find themselves in.

**Professor Bell:** It is definitely worth taking a partnership approach, alongside having consistency in policy and the messaging that people receive through the media, if it is all pushing in the right direction. I would say yes to that. Chris Stark has talked about growing the market and about lenders being willing to lend at reasonable interest rates. A lot of this is about unlocking the private finance that is already there. There are people like me who want to spend the money on this and just want an easy way of doing it. We would then get a virtuous circle where the whole sector would grow, and things would become easier.

I think that there is a place for cheap lending. I am not sure about the extent to which the public sector, whether through a green bank or whatever, can step in and offer particular loans at low interest rates, because the private sector is not doing it. That is not my area of expertise, but one can imagine that being beneficial. However, there is a big difference between a grant and a loan; a loan enables those who can pay back the funds over time to do so, and that will allow any grants to be targeted at those who are in fuel poverty and most need them, and who cannot get access to cheap loans in other ways.

**Chris Stark:** When I talk publicly about net zero, I often say that lots of people think that achieving it is about not doing things, such as turning off oil and gas. Actually, though, it is about building things. A capital investment strategy is required for the whole country. Clearly, it will be more successful if the Government can put its shoulder to the wheel and put more capital into this. The more the Scottish Government is able to deploy its capital line of expenditure to support net zero, the easier this will be.

However, the point about decarbonising buildings is that you then create the opportunity for the expenditure to be put on to the mortgage at point of sale—although I realise that that is not as applicable to social housing. By doing that, you can get a very cheap lending rate for something that everyone will be doing as a matter of course.

The fact is that we have not normalised this. It is still quite an exotic thing to choose a decarbonised heat system for a property, and if it is seen as exotic, we will not get big supply chains to deliver it. That is why it is important to put this stuff into law.

**Professor Bell:** It might seem exotic in this country and across the whole of the UK, but it is not exotic across the whole of Europe. These are not novel technologies. There are new versions of heat pumps that operate at higher temperatures; there is an efficiency disbenefit to them, but they can work and get you warm enough without the need to implement really expensive insulation replacements or even to replace radiators. There are options, but it is important to make it clear that decarbonising buildings is not some exotic thing.

**Bob Doris:** That was very helpful. Thank you.

**The Convener:** Before we leave this subject—and because Bob Doris brought it up—I just want to say that, as members will be aware, I rent houses. I wanted to ensure that there was no dubiety in that regard. Mr Doris mentioned the rental targets for 2028.

I have a quick question for you, Chris Stark. I understand what you are saying about people upgrading their house after they purchase it. You are right; as a surveyor, I would say that, if someone has not upgraded their property before they sell it, they will depress its value.

Based on the information that we heard yesterday, the average price of installing a heat pump is about £15,000. If you are starting from zero—and many houses in Scotland will be in that position; my rough survey of the position across Scotland suggested that, two weeks ago, 40 per cent of houses on sale in Scotland were EPC band C or below—and you add in insulation, there will be a huge amount to do. It could cost someone £25,000 to upgrade their property when they move in. Indeed, it could be more than that; it could be up to £40,000 for a semi-detached property.

That work will depress the value of the house, because a surveyor will come along and tell the person that they will have to spend £40,000 to upgrade it, so it will be worth £40,000 less. Another surveyor might then come along and tell a potential buyer that they do not have to spend £40,000, because the work has already been done. However, they will then have to spend £40,000 more to buy the house, because they have been saved that money. That will really affect the housing market.

**Chris Stark:** That is a really important point. You are right that some of this will work itself through. Ideally, we will reach a point at which that is just something that you consider as a matter of course, in the same way that you might consider a new kitchen. You might say, “That is a nice kitchen. I’ll buy that and get more money.” That is the kind of outcome that we are looking for here.

The really important point here is that it should not cost that much to upgrade those properties. It costs that amount right now, because it is still quite an exotic technology to install and the installer community charges quite a lot for doing it. I do not believe that that will remain the case. Much cheaper installations are coming for, say, standard housing, which is still the majority of housing that we have in Scotland. Octopus Energy, for example, is dramatically decreasing the cost of installation. I think that that is what will happen.

My final comment on the issue is that we, as the people who work on climate change, are probably changing our mindset, too. The idea used to be that, in order to achieve a fully decarbonised built environment, we needed to start with the fabric of the buildings, improve their energy efficiency and then get to low-carbon heat installations later. I do not feel that that is necessary now; instead, we should be thinking about doing this once and once only. We need to accommodate the fact that most properties will not achieve really high standards of energy performance—although that is still an option—because once you get beyond EPC band C the benefits are marginal.

The latest form of heat pump—and of course, this is not all about heat pumps; there are lots of good technologies that are not heat pumps—can cope very comfortably. Essentially, they are a straight replacement for a boiler. We do not need to have those kinds of big capital costs. The more we normalise this—to use that word again—and the more there is a supply chain behind it, the cheaper it will be.

**Professor Bell:** It is worth mentioning that—

**The Convener:** I am sorry, Keith, but I just wanted to ask about that before you come in. Are you suggesting that, in order to ramp up the supply chain to provide heat pumps, we should do what France does and ensure that the heat pumps installed in France must be made in France?

**Chris Stark:** Scottish jobs for Scottish workers is not the policy of the Climate Change Committee.

**The Convener:** I am sorry—that was slightly tongue in cheek.

**Chris Stark:** It is a really good idea to have a domestic supply chain for heat pumps. There is a huge number of jobs in this work. The point about the roll-out of decarbonised heat and, with it, energy efficiency improvements is that it must happen in every village, town and city across the whole of Scotland and the UK. That will be better done through a local supply chain.

**The Convener:** And that means that the price of installation will come down, too.

I am sorry, Keith—I cut you off.

**Professor Bell:** The biggest bits of work are designing the heat pumps and then installing them in homes. As far as the manufacture of heat pumps is concerned, I do not know how many jobs are involved in each bit, but installation is already a significant bit.

I am not sure about the suggestion that the heat pumps installed in Scotland have to be made in France—I would not agree with that. However, building up the sector and tracking the manufacturers here look like good ideas.

We are, quite rightly, talking a lot about heat pumps. [*Interruption*.] Excuse me for coughing. [*Interruption*.] My coughing seems to be spreading to others now—I am sorry about that.

Heat pumps work at an industrial scale, too, so we should not forget about district heating—that is, heat networks—especially in our urban centres. A lot of Scottish cities have the benefit of access to waterways; in fact, there is an example on the Clyde of an industrial-scale water source heat pump for a district heating scheme. That is where you get your low-carbon heat from.

There is a big capital cost to heat networks, and there needs to be some way of getting enough anchor load to justify that cost and ensure that it can be paid back. However, there are a lot of tenements and so on where such an option looks like the right one.

**The Convener:** Keith, I hope that you are going to last until the end of this meeting and that you have plenty of water.

The next questions are from the deputy convener.

**Ben Macpherson:** Recently, I visited a very interesting project that Lar Housing Trust has undertaken, in which it has converted an existing tenement building and a new tenement building with a district heating system through two British companies—one of which is Scottish. Kensa is a UK level company and Sunamp is from here in Scotland. There is evidence of what can be done.

As a constituency MSP who represents a lot of people who live in tenement housing and as someone who lives in one myself, reform of the Tenements (Scotland) Act 2004 is important, as is the current consultation. Those issues need to be seen in tandem if we want to convert existing housing stock.

**Chris Stark:** I do not want to be a salesman for Kensa, but the model is an interesting example of a different way into the challenge. The traditional view of district heating is that you put big insulated pipes in the ground, which gives you a central source of heat. I live in a tenement in the west end of Glasgow, and the University of Glasgow district heating network is right next to us. I am two blocks away from it. That is a big system.

Kensa is essentially saying that we can take some heat out of the ground and install in every property a smaller heat pump, which is very efficient, because it takes the heat out of the slightly warmed water that we can circulate through boreholes. It is potentially a cheap option, and it would work for tenements. The point that I want to make is that we are not lacking options here. What we are lacking is the requirement to do it, which I think the heat in buildings consultation, if delivered, would present properly as a goal.

Secondly, we need an actual plan for—in my case—Glasgow. I believe that we need a municipal plan, because that is probably where the trust lies. People will see the Glasgow plan for heat. If we go back to the 1970s, when we switched to natural gas from the North Sea, it was pitched as a national mission and an industrial policy as much as an energy policy for the consumer. We need to do something of that scale again, and people need to feel excited about it—there has to be some reason to be excited about it. People living in Scotland will need to see that there is a benefit to the transition, not just to the climate but to them. Smarter energy systems can be cheaper energy systems. The fact that electricity is behind heat allows us to do things that we cannot do with gas, for example.

That is exciting, but I am afraid that we are having quite a miserable discussion on the issue at the moment, because it is all about cost. Looking at it as a national mission is exciting. We can do this.

**Professor Bell:** It should be quite exciting to not have to depend on your rubbish electric storage heater that never worked properly in the first place.

**Ben Macpherson:** We will need to reform the 2004 act to enable or to compel shared owners to come together, and to potentially have building bonds that achieve financial—

**Professor Bell:** That is a good example of policy action and its range. Getting the policy levers in place is not all about commitment of capital. If owners of tenement flats have a way of coming together and mobilising their shared capital, that has to be a positive thing.

**The Convener:** Ben, are you about to leave the subject of buildings? Douglas Lumsden wants to come in on buildings.

**Ben Macpherson:** I will just add that the Scottish Law Commission is looking at a bill to reform tenement law in the next parliamentary session, which I think is essential.

**Douglas Lumsden (North East Scotland) (Con):** I want to ask about hybrid heat pumps, which you mentioned, Chris. You discussed them back in 2020. For me, that does not seem consistent with the heat in buildings bill that is coming up. Do you still think that they have a place as a bridging technology, or is that now past and we should just move on?

**Chris Stark:** I have to say that I have gone full circle on that. When I started my time in the CCC, one of the first reports that we did looked actively at hybrid heat pumps, which are quite an interesting technology. We have seen them trialled at village scale and they have worked really well. Basically, you have an undersized heat pump—it is not an enormous thing, but it looks pretty much like an air-conditioning unit—sitting alongside an existing fossil fuel system or biomass system.

We found a very good project in Wales called the flexible residential energy efficiency demand optimisation and management—FREEDOM—project, which looked at a rural village. The key thing is that it did not try to upgrade any of the energy efficiency of the buildings. I have been to see some of the buildings, and you can almost see through the bricks. We found that, during a very cold year—the year in which we had the beast from the east, if you remember that very cold period—the heat pumps, even in the poorly insulated buildings, were still doing 80 to 90 per cent of all the heat that was required for the property for the year. Essentially, the fossil system tops that up.

That is a good option, for two reasons. First, it normalises heat pumps—basically, people get familiar with the fact that they have a very smart technology that they can use in different ways and actually save money with it. If you have a heat pump, you can do a thing called pre-heating, which allows you to benefit from when the wind is blowing hard and electricity is cheap. It is good for people to get used to that. You can get to the full decarbonisation later.

There is still time to do it with a hybrid approach, but only if you start now, because there comes a point where you should just jump straight to doing the full decarbonisation once and doing it well. There is still a window to do that hybrid approach, but I tend to think that it will get more difficult as we get to the really difficult stuff about how you close down a gas grid—there are costs in that. There are vested interests and owners of assets who will want to see payment for that. The great thing about hybrids is that they start you on that journey, which has a huge impact on carbon emissions, because you get very immediate reductions.

10:15

**Douglas Lumsden:** Could there be an option in the heat in buildings bill to allow hybrids for a certain period and then make the switch?

**Chris Stark:** There is a lot of controversy about that, and I do not think that there is a right answer. In work that we have done in the past, we have seen the benefits of hybrids. As long as there is a plan to fully decarbonise at the end of it, it is a good way to get going. I know that views differ on that point, but that is definitely where I have come to at the end of my time at the CCC.

**Professor Bell:** I can add to that from my emerging personal experience—I mentioned earlier that I am trying to get a heat pump. I like the idea of a hybrid, because I am hedging my bets. I still have the gas boiler. I have spoken to three different contractors, and they gave me different advice on whether the grant that is available for putting in a heat pump is still available for a hybrid. They are tending towards saying, “Probably not.”

One of them said, “I think people are using hybrids as a way of getting a grant, but they are still getting a lot of heat from the gas boiler,” which is not what I am trying to do. It is partly about having a backup in case something is not set up right. Also, on the really cold days, I can still be confident of getting enough heat into the house, as the gas boiler just adds a bit more heat to the system. The control system can be configured to do that. For example, the gas boiler can come in only if the outside air temperature goes below a certain level. I have not read the detail of the rules for qualifying for the grant to check what interpretation I might make—I need to go and do that. However, it should not be impossible to write the rules such that they allow that sort of hybrid heat configuration.

Having said that, as I mentioned a while ago, there are newer heat pumps coming on the market that have enough oomph in terms of the temperature gradient that they get from the outside and into the internal temperature that you want through the radiator system. Even on the cold days, they will not revert completely to a standard resistive heater and draw loads of electricity from the network. That would be a worry for the network as well as for the bill payer. Those newer heat pumps can still operate with a reasonable coefficient of performance. Again, I need to look into that in more detail.

It is a moving space, but we should not have rules that hinder what is a pragmatic and reasonable option.

**Ben Macpherson:** Professor Bell, you talked earlier about agriculture and land use. Do you want to say anything more on that? Your

assessment suggests that the contribution of several key actions in agriculture, forestry and peatlands is off track. What would Scotland need—and what would you need—from the next climate change plan to provide certainty that there will be delivery in those areas?

**Professor Bell:** I am not familiar with exactly what the barriers are that explain why that is not happening as quickly as intended. We are being told that there is a lack of people in the sector and a lack of skills. Perhaps the convener can tell us something more from his personal experience of that. The targets need to be appropriate. The Scottish Government is not delivering on its targets, and those targets are lower than what we suggested would be good for afforestation.

Mobilisation of capital is important. From what I hear, having talked to all sorts of different people, there is money available. People want to invest in domestic capture of carbon, and they like it via natural means. However, a friend of a colleague who is trying to get into that market is finding it very difficult to navigate the various regulations, so my impression is that, although there is a great will to mobilise and bring in private capital, there needs to be some verification that it really is doing what it is supposed to be doing—that is, planting trees in a sustainable way that protects biodiversity and so on. My understanding is that there is machinery, if you like, around it that must be organised and sorted out.

**Chris Stark:** Next year, we will produce some work on the next path for UK and Scottish emissions. I do not mind telling you that it is probably going to say some interesting things about woodland creation, because there is more to that than we had ever thought before.

The challenge is that growing a tree is not something that you can turn on, like some technology; you have to put something in the ground and grow it. We also need to grow it on ground that does not presently have trees on it, and a set of skills and ownership issues has to go along with that. It looks more and more as if we want to support woodland creation, because it will have an even bigger impact in future than we had thought, and the more that we can do in that respect, the better.

Obviously, public funding is a challenge. Another challenge might be how we bring in private funding, and we can think of other funding sources and other interesting ways of doing that. I know, though, that it is a controversial topic.

The other issue is peatland restoration, which is almost the opposite of woodland creation, because you get an immediate bang for your buck—essentially, you get a very quick carbon sequestration from rewetting peat. The combination of those two things will be of enormous benefit to the overall Scottish strategy for reducing emissions. There are costs, but they are not huge, and there will be strong support for any funding from Scottish ministers that can go that way.

**Ben Macpherson:** That was helpful, and we might follow up on some of it.

Do you want to say anything about agriculture? Campaigners have brought up that issue with me on a number of occasions. I know that there is a lot of appetite in the farming community to be part of climate action but, for producers and consumers, that might require some choices.

**Chris Stark:** It will. The first thing that I want to say about the issue—and I have definitely learned a lesson about talking about it in the right way over the six or seven years that I have been doing this job—is that this is not the fault of farmers. Farmers do something that causes greenhouse gas emissions, and they do it for all sorts of reasons, not least policy. Therefore, it is important that we bring the agricultural community—not just farmers but all the people who work around them—along with us by showing them an equally lucrative but low-carbon future.

I have said this in the past, but my main criticism to date of the Scottish Government has been that there is an element of magical thinking to how we can reduce agricultural emissions. When we look back, what we see—at least from the Scottish Government, though I am sure that this will be updated—is essentially a flat line in farming emissions; then something mysterious happens over the coming years and emissions fall, seemingly without the benefit of any policy. The vehicle for that is the current Agriculture and Rural Communities (Scotland) Bill. That, with the post-common agricultural policy support for farmers, will provide a better platform for low-carbon farming. Scottish ministers have put some good proposals into the bill, but it will not hit home until later in the decade.

My main plea, therefore, to Scottish ministers is: let us be serious about this. This is about a genuine change in practice, which takes time to roll out in the farming community and needs to have farmers' broad support. Moreover, this is all happening at a time when we have food security issues, which are driven by climate change, too.

As a result, we need something that works for farmers, that reduces emissions and which will give farmers a genuine livelihood in the future. I think that that can be done, but it will not happen next week. The need to do this properly while being genuinely cognisant of the fact that it takes time takes us back to the fact that the transition

itself is not something that we can just switch on overnight.

**Ben Macpherson:** Thank you.

**The Convener:** I call Douglas Lumsden.

**Douglas Lumsden:** I was just going to ask about the bill that Chris Stark mentioned. How can that move forward while we do not have a climate plan? Do you see any problems in that respect?

**Chris Stark:** We do not need a climate plan to do anything, really—especially now that an act is going to remove the obligation to hit a target by 2030. I suppose that this is therefore a good test of how serious the Scottish Government is about what it is trying to do on climate. Maybe we only do things because of targets, but I rather hope that we do things because, actually, every portfolio in the Scottish Government has some role in reducing emissions. When it gets to the 2040s and beyond, the area that will be the biggest problem for Scotland is farming. It will probably be the biggest emitting sector, because all the others will be close to zero. Because the issue is so fundamental, we do not need much more than the net zero target for 2045 to get going on it.

Lots of the work that we have done on farming internally in the Climate Change Committee shows that the kind of practices that we would want farmers to pursue in the net zero society that we will get to by 2045 save the farm money. To a huge degree, it is therefore about not wasting resources, and investing in a new kind of capital kit on the farm that is also low carbon. We should want those things to happen for the benefit of good and productive farming in Scotland.

**Professor Bell:** I will add to that point about whether there is, or is not, a target.

One of the unfortunate things about an overambitious target is that it leads to the perception that we either hit it or miss it; that it is digital—on or off, yes or no. However, although, from the previous climate change plan update, it did not look as if we were going to hit the target, and that update had some magical thinking in it, that does not mean that it was all rubbish. There was lots of stuff in there that made a lot of sense and that should be pursued; the transition in agriculture is one example of that. It does not mean that we do not get on and do it.

I agree with Chris Stark that still doing the things that should be done anyway to get on the pathway to reduce emissions across the whole economy would be a sign of commitment on the part of ministers.

**Douglas Lumsden:** I will move on to carbon capture and storage. We would all like to be further on, especially with the Acorn project. If we were further on with that, would the Government be on course for the targets that it set? Has the carbon capture and storage delay made a significant difference to meeting the targets?

**Chris Stark:** I do not think that we have done the analysis—at least formally—of whether we would be on track for the targets that the Scottish Government previously set for carbon capture. However, let me say that they were punchy, to use that technical term. It is highly unlikely that we would have hit the CCS targets and, in turn, the greenhouse gas removal targets that are linked to them by 2030.

One of the benefits of at least removing the pressure to hit the 2030 target is that we can probably have a more sensible discussion about the pace of deployment of CCS. The Acorn project is a great project. We need to have CCS in the mix, because it allows us to reduce emissions in the short term and then opens up this new industry that we do not have anything at all of, which is the greenhouse gas removal industry.

We should do that as quickly as we can, but not to achieve fantastical targets by 2030. The majority of emissions saved will probably come after 2030, when we will get to a point at which we have built the infrastructure; then, in the 2030s, we will see the benefit.

**Douglas Lumsden:** Would it be correct to say that not being further forward with the Acorn project does not really have an impact in relation to the announcement that we had last week?

**Chris Stark:** I think that it is possible for us to do carbon capture before 2030, but the scale of it is unlikely to be big. It is quite simply an infrastructure task, and it takes time to build that. We still have time, and I would love to see us go quickly on this. It would be a really good answer to the question that I am often asked, which is, “Why are we doing CCS?”, because the answer would be, “It works.” I would like to see Scotland take a lead on it, because it is such a good place to do CCS.

Another reason why the Acorn project is good is because it is a pan-Scotland project. It has operations in Peterhead and there are also things happening at Grangemouth. There is a pipeline there, and I can see how that would work. It also opens up the new industry of greenhouse gas removals that we definitely need.

I do not know what can be achieved by 2030, because we have not done the numbers on that, but I think that it will probably still be quite small scale by the time that we get to the end of the decade.

**Professor Bell:** That comes back to some of the danger of the 2030 target and all the debate and coverage around that. It is almost as if we are

saying that, in abandoning the 2030 target, we have abandoned everything and that all bets are off. However, that is absolutely not the case. Chris Stark spoke earlier about the political vacuum, or the vacuum in terms of public discourse. We still have to get on and do these things. Even if Acorn does not quite get the volume of removals by 2030 that we would like to have, we should still do what we can to get the thing moving. If it comes in 2031 or 2032, it is still worth having.

10:30

**Douglas Lumsden:** The Scottish Government had committed £80 million to that project. Can that money be spent on anything now, or does it really depend on how the UK Government moves forward with the Acorn project?

**Chris Stark:** It largely depends on the funding that is available from the UK Government, because Acorn is one of the pilot projects. There is a cautionary tale in the story that we heard this week that one of the SSE offshore wind projects did not get consented on time. I do not know which consents are involved in carbon capture and storage projects in Scotland, because I have not had a chance to look at that in detail, but we must not get into a position where the planning regime or the consenting regime holds us up. We have a proud—or not proud—history of that happening in Scotland.

**Douglas Lumsden:** I will move to the subject of oil and gas licences. There is a lot of debate about whether granting new licences would have any impact on us meeting our emissions targets. Do you have a view on that? The Climate Change Committee has had mixed views in the past.

**Chris Stark:** I have a view. It is not a personal view but an informed one, and I feel more able to give it as I head out of the door at the CCC.

Collectively, politics both north and south of the border has been wasting time on the issue and it is quite astonishing how much time it has absorbed. Yes, we have oil and gas reserves. They are important energy reserves that the country has benefited from for many decades, but they are running out. The North Sea Transition Authority makes projections for gas and oil. If we look at the gas projection, because we know that we will need gas until 2045, we see that, without new licences, there will be a 97 per cent reduction in North Sea gas production by 2050. With new licences, that reduction will be 95 per cent.

That difference between 95 and 97 is not the issue, but those two percentage points have dominated the political discussion of climate for two whole years. My biggest concern is that that has crowded out the discussion about how to get off the stuff in the first place. That is the main issue. If we do not decarbonise our demand for fossil fuels and switch to electricity, or to hydrogen, which is something that we want to use in the Scottish economy, we will just be importing that stuff, which is as much an energy security concern as it is a climate issue.

The oddity in Scotland and the UK is that we are unique, in that our geology means that our transition from oil and gas matches the climate transition that the world must make. We should be making more of that. We will have to deal with that, because the geology of the country will not permit us to keep producing after that point. I slightly despair that we are having an endless discussion about oil and gas licences when the discussion about heat pumps is much, much more important overall.

**Douglas Lumsden:** The key message is about demand, not supply.

**Chris Stark:** It is.

**Douglas Lumsden:** Supply will come from the North Sea or wherever.

**Chris Stark:** It is also important to acknowledge that the world supply of oil and gas is already too much for the carbon targets set out in the 2015 Paris agreement.

We all have to go on a journey of constraining supply in some way or we will blow those temperature targets out of the water. That speaks to the need to act more on demand, but we have to keep an eye on the supply side too because, if we get to a point where the global oil and gas supply is so cheap that it becomes uneconomic to make the switch to low-carbon fuel, that will be just as much of a problem. We must keep an eye on both. We are slightly less concerned about domestic supply, for the reasons that I have just described, because we will run out of the stuff over that period.

**Douglas Lumsden:** I guess that the UK can play a part, but not a significant one, in global supply.

**Chris Stark:** I am afraid that UK politicians rather overstate their importance in that discussion. There is not much that we can do to affect global oil and gas prices. The lesson of the crisis that followed Russia’s invasion of Ukraine is that we are price takers. The extraordinary intervention that was made by the Liz Truss Government to prop up energy bills was necessary only because we are so dependent on gas. It was a fossil fuel crisis.

Looking back over the past few years, it is remarkable to me that that was regularly described to me as a net zero-inspired crisis. It was absolutely nothing to do with net zero—it was to do with the fact that we are too dependent on

fossil fuels. We should be moving as quickly as possible to remove that particular dependency, and the best way to do that is to develop, particularly, a domestic supply of low-carbon electricity but, more broadly, a supply of low-carbon energy that we can use domestically as well.

**The Convener:** Monica Lennon has been waiting patiently for her time.

**Monica Lennon (Central Scotland) (Lab):** I have, but it has been worth it, because the evidence has been fascinating. Thank you to Chris Stark and Professor Bell for your really clear evidence and answers today.

I refer members to my entry in the register of members' interests—I am a member of two trade unions, Unite the union and GMB—because I am going to ask about a just transition and the green economy.

I am keen to get your views on the efforts and progress that the Government has made towards its commitment on a just transition. We have heard a lot today about the energy sector and agriculture, so it might be good to start with those sectors.

It is important that workers and communities have confidence that climate action and net zero will benefit them and not punish them, but the announcement last week will perhaps leave people feeling more anxious. I am keen to get the Climate Change Committee's view.

**Professor Bell:** You are absolutely right that people need to feel confident and feel that it is an opportunity rather than a threat. We have talked quite a bit about consumers, users of energy and buyers of agricultural products. It is important that they get a reasonable price for whatever they are buying, so that is a very important part of a just transition.

Jobs are another big part of it. Who is producing all that stuff and what stuff are they producing? We are trying to transition the economy away from high-carbon to low-carbon stuff, but it is a difficult transition. A lot of the skills can be transferred. For example, in the oil and gas sector, people with technical skills can apply those skills in another area, but they need the training and the opportunity to do so. Investment and support for training, not just by Government but by the industries that want to attract people, are really important.

That comes back to the confidence point—everyone is really serious about it. I hear lots of companies in the energy sector saying that they cannot find enough people because there are not enough people out there. It is a serious problem. Some of the companies are starting to step up the training that they offer and the number of graduates that they are recruiting, but it is all a bit slow and there needs to be more of it.

There is also a challenge in relation to higher education courses. Again, we have constrained budgets. Are people being attracted into the sectors? Wage inflation is already going on in the energy sector because there is competition for people. From the point of view of the individuals who can benefit from it, that is great. Finally, the renewables sector is starting to pay better wages and compete with the oil and gas sector. However, the jobs are not necessarily in the same physical locations, so there is still a challenge there, because people's families are established in other locations.

We are starting to see the opportunities, such as green jobs, that have been talked about for a long time, but more action needs to be taken to support that. The location and place-based aspects are still a bit of a challenge.

**Monica Lennon:** You said that the change has been slow. Earlier, we heard about the letter that Lord Deben sent to Roseanna Cunningham, when she was Cabinet Secretary for Environment, Climate Change and Land Reform in 2020, in the previous parliamentary session. One of the recommendations was about the early decarbonisation of the Grangemouth industrial complex, which is in my region, but is of national strategic importance. Was that advice not taken by the Scottish Government? Do you think that it is listening to advice when it gets it?

**Chris Stark:** I can draw on some experience from being in the Scottish Government. It was a long time ago but, prior to doing this job, I was the director for energy and climate change.

We have always worried about Grangemouth, because it is one of the oldest refinery complexes in Europe and perhaps the world, which obviously means that, without investment, it will not be competitive. Jim Ratcliffe and Ineos have taken a cold-hearted view of what to do with Grangemouth—knowing a little about how Jim Ratcliffe operates, that is not a huge surprise to me.

I do not have too much criticism for the Scottish Government in this regard because quite a lot of things have to be lined up to make this work. My concern is that, with regard to the issue of a just transition, it clearly did not work in Grangemouth. The announcement came with minimal participation on the part of the workers. If that is the template for how we go about this in the future, it will be a very difficult transition. The challenge is that Scotland has marched ahead by making a just transition a more core part of the overall strategy for climate than other parts of the UK have done.

That is a hugely beneficial thing to do, and I think that the Scottish Government deserves credit for that. However, that only works if we have got the approach functioning and, at least from the outside, it did not seem to work at Grangemouth.

I think that there is still a future for Grangemouth as a petrochemical plant, and that is very much something that we can see in a net zero future, but it still needs that investment and the participation of workers in the discussion.

The last thing that I will say is that there are difficult discussions to have in what is still an oil and gas industry. What we typically see with all the fossil fuel sectors is that employment is often highly localised around facilities. Overall, the transition from fossil fuels to something cleaner does not look like a major employment issue for the country as a whole, but there are employment impacts, and they tend to be located extremely close to particular geographies. That means that we have to get in there early and start talking about that future and investing in it, otherwise there is not an easy discussion at all about the jobs in that area.

**Monica Lennon:** So, big lessons to be learned there.

Your report mentions that the just transition commission has raised concerns about the minimal engagement of workers, the community and Government that took place around the Petroineos announcement. The commission has also emphasised the difference between investment in net zero and investment in a just transition. Do you think that the Scottish Government sufficiently understands that distinction?

**Chris Stark:** I think that it understands it. If I might make a general point, my belief is that the most important issues in relation to net zero are the fairness issues, if I can call them that, rather than the just transition issues. Just transition is more closely linked with the employment story, and we could go into lots of depth about what it means.

If you stand back and take a broad view, there is no doubt that, as a country, we can hit net zero, and all the work that I have done shows that there is a big economic return for that. However, in the short term, there are costs relating to the investments that we talked about, and there are shifts required in employment, and we have to be prepared to look in a clear-sighted way at what those things are in order to see the benefits in the future. Whether you call that a just transition or not, you almost need to start from the fairness questions if you want to see a successful transition take place.

It is important to stress that we still have time to do what needs to be done. Grangemouth is perhaps the first clue that the events are going to overlap and may run ahead of where we need to be on all this, but the transition in buildings, transport, farming and other industries has not yet started—not on any scale, anyway—and we have time to plan properly. If we do not take the view at the start that fairness needs to be one of the driving factors in that, it will not stick. I worry a lot about that.

**Professor Bell:** I will just add to that. Throughout the discussion this morning, we have touched on the fairness point—what different things cost, what the benefits might be and so on. We start from particular actions and then start talking about the fairness, but, to reinforce Chris Stark's point, fairness is going to be part of the whole debate. It is fundamental to the whole of Government policy. These things have got to come all together—there must be action across the whole economy.

10:45

Emissions reduction is an essential project for every Government on the planet, and it is up to Governments to do that in the right way and make sure that it happens. Doing it in the right way means addressing those fairness issues and everything else across all the different sectors. We should not see net zero policy as a silo policy; it affects everything that Government does, and the fundamentals of what Government does come back to fairness and the need to represent the interests of citizens and each individual in the right sort of way. Those interests are served by addressing climate change. We do not want to leave to our children and grandchildren a planet that is unliveable or incredibly costly to live in. That is another part of the fairness issue; there is an aspect around fairness across generations as well, even if it means that the present generation—some of us lot—might have to put our hands in our pockets and pay for something. We, as a political class and as a set of advisers, have to be willing to address that as a holistic thing.

**Monica Lennon:** You made an important comment about the fact that net zero should not be siloed. With regard to the Scottish Government, has that been part of the problem?

**Chris Stark:** Drawing on my experience of the Scottish Government in the past and looking at where it is now, I think that it has done more than any other Government in the UK to drive net zero through as an agenda that sits in many different portfolios, but it has still not come to a finished position. I am on the record today, in an interview *The Guardian*, saying that one of the challenges that we face is that the tag of net zero has become

a slogan rather than a scientific goal. I sometimes worry about that because, basically, we need lots of things to happen at a pretty consistent pace across all of those portfolios and, if we get to the point where some portfolios do net zero and some do not, it will be very difficult to make the necessary changes.

I am increasingly of the view that, if we are going to get to net zero by 2045, we probably will not do so by making the arguments solely on a climate basis. For example, it is jobs in Falkirk that should drive the investments to decarbonise Grangemouth, and the fact that that also helps the climate should be a secondary reinforcing concern. Similarly, the fact that we are making homes warmer and reducing energy bills is the reason why we want to make the investment in buildings, and the fact that it helps the climate is a reinforcing aspect.

I am happy for net zero to step into that reinforcing secondary role. We still have to get to net zero—it is very important that we do that—but we have been through quite an odd period, frankly, where the primary reason for a lot of what was being done was net zero alone, and that is a strategy that probably does not have that much longer to run. There are big costs involved in some of the things that need to be done, and we need to be doing them for reasons of jobs, energy security and warmer homes first and foremost, because, in those portfolios, such issues are typically the driving factors for ministers. That is absolutely fine because, if we view net zero as more of a background condition for all policy, it is far more likely that we will have a successful transition overall.

**Monica Lennon:** I agree that, if we get that, it is win-win-win across the board.

On a more specific point, you will be aware that the Scottish Government announced around £100 million for the green hydrogen sector and then some of that money was shifted towards the offshore wind supply chain, and the former Cabinet Secretary for Wellbeing Economy, Fair Work and Energy, Neil Gray, gave his reasons for that. Is it right for the Scottish Government to prioritise support for the offshore wind sector ahead of the potential development of a green hydrogen sector, and where do you think are the best opportunities for economic growth in green industries in Scotland?

**Professor Bell:** The first thing to say is that green hydrogen depends on wind energy; you cannot disentangle them. Where is that low-carbon electricity going to come from? With regard to the question of whether to prioritise one or the other, I would say that they are co-dependent.

For a long time, there has been a lot of talk about trying to build up the supply chains for offshore wind. That somehow has not quite happened yet, but we can see examples of investment happening in other parts of the UK. Things start to get a bit complicated because the approach is dependent on UK Government policy such as the contracts for difference auction rounds. Last year's round did not come up with anything for offshore wind, but it looks more promising in terms of the reserve price for the next auction, so that is hopefully all moving again. That pathway gives us confidence.

With regard to the locations, a bit of uncertainty has been injected into the situation in terms of where to build offshore wind. Obviously a lot of work has already been done on scouting the sites, acquiring the sea-bed licences and putting in place the leasing arrangements. However, in light of some of the questions that are coming up about electricity market reform, things potentially look quite penal for locations in the north, because there is not enough electricity transmission network capacity to make use of all of them.

There are lots of different pieces here, all of which need to be well aligned to get everything unlocked. If you can be confident that your investment in offshore wind in Scottish waters will be financially viable, which means that you can sell the energy, you can go ahead and start placing contracts. If you have a long pathway with a whole set of developments that you can put in place over a number of years, you can start investing in the supply chain in Scotland and providing opportunities for people to bid for, say, the steel manufacturing or the fabrication of the blades or whatever.

That was a long way of saying that, as I see it, it is all kind of complicated. There are dependencies from outwith the Scottish Government, too, but of course, these are the outcomes that we want, which brings us back to the question that you started with, regarding jobs in Scotland.

Chris, did you want to add anything?

**Chris Stark:** It is a really good idea for the country to have a strategy for green hydrogen production. It will be an important part of the energy system as we move forward, particularly as you can use it in the power system itself. In fact, it is a very useful way of balancing that system, and it is something that we will need as a way of generating electricity from low-carbon means.

The one thing that I would say relates to the Scottish Government's plans to be a big export industry for hydrogen. I am rather more dubious about that, and I would not want us to hitch our wagon to that particular horse—that is probably the wrong analogy to use—without some serious

thought being given to it. An energy strategy is due this year. I do not think it likely that we will be exporting lots and lots of hydrogen, because it is quite a hard thing to export. It is probably easier to string a length of cable from a wind farm to, say, Germany, than it is to put hydrogen on a boat in order to sell it. Germany might well produce its own hydrogen at the end of such a cable; it is easier to do that sort of thing domestically.

The more that we focus on electricity in the system, the better. For Scotland, that will definitely mean having an offshore wind strategy. It is an amazing resource that we have in Scotland and we should be using it.

**Monica Lennon:** That was helpful; thank you.

I need to move on to a question on governance. I am keen to hear how well you think the Government is set up to deliver on its climate policy goals and whether there is anything that should be done differently.

I am mindful of the Auditor General's report of April last year, "How the Scottish Government is set up to deliver climate change goals", which is all about governance and risk management arrangements. Chris Stark, in particular, will know the Scottish Government well from his previous roles. Is it a matter of concern that there was no permanent director general for net zero until January last year? We came back to Parliament after the election in May 2021, but no permanent DG for net zero was put in place at the time, and we have had a few years in which that portfolio area has not had a workforce plan. Have some time and some important opportunities been wasted in that period?

**Chris Stark:** I know Roy Brannen, the director general, pretty well, and he had been doing the job on an interim basis before he was made permanent. In a sense, then, there has not really been a change of leadership on this in the Scottish Government. There has been some shift in the ministerial portfolios alongside that, but I do not know whether there has been a gap—that has not really been my experience. Actually, the Scottish Government has been pretty good on the broader question of governance, particularly in, for example, stepping in to address the governance challenge of local authorities more explicitly than we have seen down south.

The overall challenge is that we do not have a plan. It is hard to lead something when you do not have a plan to lead. I realise that I have said this a few times this morning, but without such a plan, Roy Brannen faces a very difficult job as the senior responsible owner. After all, he needs to have something to deploy, and that will involve putting serious thought into what we are going to spend money on in this country and what the minister wants to happen. All of that has been held up by the fact that we have not seen the plan from the Scottish Government, so I go back to my irritation in that respect.

My main irritation is that everything is getting gummed up by the fact that the plan has not been written down. The quicker that we move to something that looks more like that, the better. I know that Roy Brannen, particularly given his previous history of working in the transport sector, will find it a lot easier to get his big Gantt charts out, because he is good at that stuff. He will be a great DG when we get to that point.

**Monica Lennon:** I make it clear that I was not picking out one individual. I would just note that in the two key messages in its report, Audit Scotland says:

> "The lack of frequent and consistent reporting, alongside gaps in performance monitoring, make it difficult to gain assurance of overall progress."

It also highlights the lack of a workforce plan and points out that

> "Systematic risk management is needed so the Scottish Government can identify the key risks to meeting its climate change goals and take effective action to address them."

Given what happened last week, people might think that that factor contributed to the situation. Just to give a more balanced view, though, I should say that Audit Scotland told the committee fairly recently that it is happier now.

However, do we need to look back at that period? Is a lesson that we need to learn that we must ensure that local government, other public bodies and everyone else gets their house in order, so that we can have the proper governance that we need?

**Professor Bell:** I go back to one of this morning's main themes, which is about having a climate change plan and why we do not have one. Part of the explanation for that is that it is very difficult to come up with a plan that meets the 2030 target, certainly as it looks now, but should we be in a position where a failure of a plan to do everything means that you have no plan to do anything? We should not.

I know that it makes it easier for Government officials to work to a plan, if they have one, and there should be a plan for a big part of what we should be doing, but another question is: to what extent do they already have a plan to do the things that we can do? Does that exist—and does it exist in sufficient detail? Arguably, we can see that in the policies that have been rolled out, and there are some positive things; we have talked, for example, about the heat in buildings strategy and so on. Those are clearly the fruits of officials' labour, to a very large extent, and they have been

guided and approved by ministers. There should be more of that kind of thing—that is, evident policies that are developed.

It is a bit of a circular argument to say, "We do not have a plan, because we are not meeting the target." We should have a plan. Who is supposed to be producing it, anyway? It will largely be the same people who will be acting on it. In short, I do not think that the 2030 target should be seen as an excuse.

**Monica Lennon:** Thank you. I will hand back to the convener, for the purposes of time.

**The Convener:** I give fair warning that I am going to change the order slightly. I know that Mark Ruskell is at home, so I will bring in Douglas Lumsden, Mark, and then Ben Macpherson. Mark has been struggling a wee bit with a bug; we are delighted that he is at home, but also delighted that he can contribute.

**Douglas Lumsden:** Did the Scottish Government, ahead of its announcement last week, come to you for advice or to warn you that it was going to make the announcement?

**Chris Stark:** Yes, we had some contact with the officials. We were not privy to the details of the announcement before it was made, but we had some sense that the Government was going to look at the targets, because we had said that it should do so.

The other aspect—and I am very happy to give the Government the praise that it deserves for this—is that it told us that it would be moving away from annual targets towards something that looks more like a carbon budget. That is a very important step. On the face of it, annual targets have the appeal of clarity, because you have a percentage number to hit each year, but they are at the mercy of events. We have consistently missed the targets under the Climate Change (Scotland) Act 2009, which I think renders them pretty unimportant. Indeed, we have all sat through various ministers coming to the chamber to apologise for missing a target.

It is much better to look over a cycle at what needs to be done. The UK has five-year carbon budgets. Five years is quite a good term to look at, as there will usually be some sort of economic cycle over that period; you will be able to even out changes in temperature—after all, there will be cold and hot years, when you might use more or less fossil fuel—and you will also have a political cycle. The Scottish Government came to tell us that it was planning to look at that, and we will be able to provide advice on the best way of approaching target setting in the future.

**Douglas Lumsden:** I think that other colleagues are going to ask about legislation, convener.

**The Convener:** We will see. If they do not, I am sure that I can bring you back in.

I said that I would go to Mark Ruskell next. Mark, it is your turn.

11:00

**Mark Ruskell (Mid Scotland and Fife) (Green):** Thanks very much, convener. Sadly, I have the Climate Change Committee lurgy here at home.

I want to ask about the advice around the five-year carbon budgets and go back to the point that you made at the beginning of the session, Chris. What is the Climate Change Committee's view on that? We have heard some criticism from Piers Forster about dropping the interim targets—2030 and 2040—but you have just said that moving towards a five-year carbon budget and away from the annual targets makes sense if the action is batched together into climate change plans and is backed up with strong advice from the Climate Change Committee.

Will you offer a bit of clarity as to your view on the interim targets, what happens to them and how they relate to the five-year budget?

**Chris Stark:** My organisation will provide advice on that formally in the coming months, but I am happy to give you my view on it. If you are looking for evidence of the CCC's view on that, we gave a similar piece of advice to the Welsh Government when it was conceiving of a different approach to climate change a few years back. What we said to the Welsh Government is what I think we will end up saying to the Scottish Government, which is that carbon budgets—looking at the carbon that is emitted over a longer period than a year—are a sensible step.

If we have an idea of a carbon budget every five years, or maybe even a shorter period, which steps down over time towards the long-term goal of net zero, that tends to give us more certainty about the actions that need to be taken within each of those periods to deliver the target. That allows you to ride through the problem that we have seen in Scotland, which is that there are big fluctuations year to year, most notably in how cold it is. One of the biggest sources of emissions in Scotland is the fossil fuels that we burn to keep our homes and buildings warm. If you have a cold year, they go up. We adjust for that in some of the stats, but you get fluctuations that, over five years, even themselves out.

The economic cycle also evens out over the five-year period. Typically, you get a dip in the

economy and then some increase in economic output, and those are often linked to greenhouse gas emissions. Having a target that looks across that is easier to manage. I suspect—although I will not be in charge when we produce this advice—that we will come in strongly behind the idea of a carbon budget approach as opposed to annual targets. Whether that means that we need to abandon the decadal interim targets that we have for 2030, 2040 and 2045 will be for the CCC to decide. I see the value in having them.

It is worth saying that, at UK level, with a model that works pretty well, we have the carbon budgets for the UK and we have the net zero goal for 2050. I will say again that the 2050 goal is exactly the same as the 2045 goal for Scotland. Scotland will get to net zero sooner if the UK is on its path to 2050, so there is not an expression of more ambition for Scotland in having 2045 in law. At UK level, we also have what is known as the 2030 nationally determined contribution to the Paris process. It is a percentage reduction to be achieved by 2030, and it is tremendously useful to have it. We do a lot of work around what that would require, and having those milestones alongside the carbon budget can also work.

The carbon budgets alone are one way into this, but there is still room for us to have a 2030 target and a 2040 target. It will be for the CCC to decide whether it agrees with that.

**Mark Ruskell:** When will you be able to issue that advice to both the Scottish Government and the Scottish Parliament? When we were setting targets in the 2019 act, we were perhaps not getting such formal, solid advice. If the Scottish Parliament were to legislate again on climate targets, we would need to have that cast-iron advice coming from the UK CCC in time to deal with that legislation.

**Chris Stark:** My main regret is that I will not be around to see the publication of the seventh carbon budget advice from the CCC. It is still the most exciting piece of work that we do. Every five years, we give a piece of advice on the path ahead for the whole of the UK to what is now the long-term goal of net zero. We did that most recently in 2020, with the sixth carbon budget advice. It was tremendous to be involved in that work.

As part of that work, we will define a pragmatic, achievable but ambitious path for reducing emissions for the whole of the United Kingdom and we will have a pathway for emissions that is aligned with that for Scotland alone. We will do lots of work to illustrate what that requires in Scotland, alongside the path itself. That will be ready early next year.

We have brought that work forward. We would typically do it by the end of the calendar year but we decided to do it early next year because we expect that to be early in the next Westminster parliamentary term, and we want it to be something that a new set of ministers of whatever colour receives and can chew over. That means that, for Scotland, we will have a brand-new pathway that has all those hallmarks of pragmatism and ambition ready for February or March next year.

Therefore, we are in quite an interesting moment in that the cabinet secretary has told the Scottish Parliament that she wishes to remove those interim targets. My desire—strangely, given my earlier point about the vacuum—and my strong advice is that we hold open that space for the numbers to be set until the CCC has done its work next year. Otherwise, we will end up in the position that we ended up in before, where we saw Scottish politics, if I can put it that way, name a target that was ahead of anything that we could illustrate with analysis.

However, that does not mean that we cannot make progress on the target framework itself before then. We can offer a piece of advice—before we do the pathway with the numbers—that would also set out why we feel that carbon budgets are a good approach and something that could be usefully added in to the Scottish climate change legislation. Therefore, you could see that as a two-stage process, whereby we give you some advice on the right institutional and legislative arrangement and then fill in the right targets, the right carbon budgets and the right numbers when the pathway analysis is available early next year.

**Professor Bell:** I like that framing of it: have the framework defined and fill in the numbers—properly scrutinised and properly developed numbers, which is what we are doing—when they arrive and keep that positive debate going in the meantime, so we are not committing to something that is not deliverable but ensuring, as we have repeatedly talked about this morning, that action is still going on and remains really important.

My term with the Climate Change Committee was a five-year term—everything is built around five-year terms, is it not?

**Chris Stark:** It is, yes.

**Professor Bell:** That term ended at the end of last month but, given that nothing has been done to recruit my replacement, I was offered another year. I am very glad to do that. It is tremendously interesting, rewarding and challenging work—it is challenging now because there is a huge amount to be done in order to prepare the seventh carbon budget more quickly than would otherwise have

been the case. Therefore, bear with us while we get that very deliberate advice formed.

**Mark Ruskell:** I appreciate that and your points about needing to learn from the 2019 act and the process around setting targets in that regard.

You offered quite a few reflections on the early climate package that was announced last week around the intent to legislate and you have spoken at length about heat and the positivity around the heat in buildings programme and how that will get us on the right trajectory—not to meet the 2030 targets but certainly to meet the 2045 targets. Do you want to comment on any other elements of that package? You have already spoken about Grangemouth, for example. There is a commitment in the package to see a just transition plan for Mossmorran that will be early and involve workers. There has also been a commitment to finally roll out air departure tax. Do you want to reflect on anything else in that package as potentially signalling a change in Government policy or a welcome acceleration?

**Chris Stark:** There is also something in there on the land and rural questions, which is very welcome. There is quite an intriguing commitment to doing something on a new carbon land tax, which we have not seen before. There is lots to be excited about and, if you throw in the consultation on heat in buildings, that is potentially quite a meaty package. The challenge is to actually deliver against all those things.

What we have at the moment is an annexe to a letter, and we have some sense of what would be in that package. All of it looks good, but I am leading up to the point that I really want to make on this, which is that, once again, I am afraid, we have a set of commitments with no numbers next to them, and I just do not think that it is good enough any longer to produce that. We have to know what kind of impact is expected from these policies. I do not know how much impact this thing will have because I do not understand what kind of greenhouse gas emissions reductions are expected to be associated with those policies.

Let us hope, when we see the policies, that there is more by way of analysis alongside them. The mistake in the past was having a load of open-ended commitments with no numbers next to them and where it was not clear how they would be delivered, and then, at the back of a publication, completely divorced from the policies, an annex that had some different numbers in it that you could add up to hit the target. I do not think that cuts the mustard any longer.

We need to know what is actually going to be delivered through these proposals. We can then do the job of assessing that independently, which I am sure that we will do well.

**Mark Ruskell:** We would expect that to come within the next climate plan. One of the criticisms that you made a number of years ago was that the previous climate plan did not have the numbers in it, so do you expect the next climate plan to have hard figures as to what each and every policy programme will deliver in the years to come?

**Chris Stark:** It is great that the minister is promising it, but I want to see it. I am sure that I am not the only one who feels that way about it. Until we see it and understand the numbers behind it, I will not be able to say whether it is an impactful package or not.

**The Convener:** I think that Ben Macpherson has a question, then I have a question.

**Ben Macpherson:** I have two questions, convener.

**The Convener:** Well, there you go—two questions.

**Ben Macpherson:** Thank you.

I will first go back to the topic of having a five-yearly carbon budget approach, rather than annual targets. I appreciate that you have clarified that you will make proposals, having considered the Welsh situation. Do you want to add anything more at this stage about the challenges, practicalities and process for setting five-yearly carbon budgets and how you envisage that working through the Government and Parliament?

**Chris Stark:** We can draw on some experience, because carbon budgeting is happening at a UK and a Welsh level, and I hope that it will shortly happen at a Scottish level, too. Northern Ireland has a slightly different approach, but it is similarly based on the idea of periods of carbon reduction.

The experience of the UK, and Wales in particular, is that you first need to go through a process of establishing how this approach is going to work, so that the idea that there is a five-year cycle becomes established as part of the rhythm of Government. You can introduce it, but you have to go through that process for it to become well established.

The success of the UK carbon budgets has come, I think, because the initial budgets were challenging but achievable. We need that in Scotland, too. We will almost certainly see that the short-term ambition will not be so great for the people who stood behind the 75 per cent target for 2030 in this Parliament. However, you have to warm up supply chains and delivery in a host of areas, as well as have in place the policy and the people who are confident to do it, and that takes time. You then get the pay-off after 2030.

The path ahead for Scotland will, I hope, be determined by the carbon budgets, but they might

not show the effort involved in them, if you see what I mean. The policy that we put in place in Scotland over the next five years is probably not going to have a huge impact on emissions; that will come later.

I would not be surprised if, in those budgets, the pathway for Scotland looks like quite a shallow reduction in emissions initially with quite a deep reduction later. That is the key point that I am trying to make to the committee: if we look at emissions only in the short term, we are unlikely to put the right policy package in place. We need policy makers in the Scottish Government—and beyond that, in other parts of Government, too—to take the long-term view that we are going to deliver big emissions reductions after 2030 and even into the 2040s. To do that, we have to put in place the structural elements now, despite the fact that they do not deliver huge emissions savings in the short term.

The beauty of carbon budgeting is that you should know where you are heading and be able to follow a trajectory to that, but everyone in the system has to understand that. We are more or less there with UK policy making on that, but the Scottish Government will have to get up to speed on how that works. That has been the experience in Wales as well.

**Ben Macpherson:** Considering the politics, the fact that the Scottish Parliament has five-yearly parliamentary terms might be quite helpful in that regard.

**Chris Stark:** That is the beauty of it, though. Whether it is in a UK or a Scottish climate change act, the point is that there is the idea that something that goes beyond the parliamentary cycle must be done, and that it is the responsibility of Government in each of those parliamentary cycles to keep the show on the road. That is easier with carbon budgets, because you are pointing towards a thing that will go into the next session of Parliament, the one after that, and the one after that. There is then a duty on Government to do the right things in that session.

The key point that I am trying to make is that although it may be that the Scottish Government does not achieve huge emissions reductions in the next political cycle, it still needs to put in place a lot of the big elements that will achieve that. Think about the discussion that we just had about decarbonising buildings, for example: that will not deliver big emissions savings in the next five to 10 years, but it will over the next 20 years.

11:15

That idea—that, essentially, the carbon budgets keep the show on the road—needs to be built in. There is lots of room for politics to determine different ways through the issue but, overall, the emissions shape is where we are heading.

**Professor Bell:** To chip in on carbon budgets, there has not yet been controversy at a UK level around those because, in the time that has passed, they have been met. That is good. We do not want to get into a position of there being lots of argument about why they have not been met.

However, that will get harder, because the initial budgets were set on an 80 per cent reduction in greenhouse gases, and the sixth carbon budget was set on a 100 per cent reduction—getting to net zero by 2050. That is more stretching. We will have to see how that pans out, but we do not want to have to wait and argue about why we missed that target—we want to put the pieces in place to make sure that we hit it.

**Ben Macpherson:** On that sense of collective challenge and purpose in the political discourse, Chris Stark made some powerful points on the BBC at the weekend. As this is your last time at the committee in your current role, I give you the chance to say anything further on the collective challenge in our discourse and how we need to work collaboratively—not just to all of us around the table but to every politician in this building, every researcher and press officer behind the scenes, every journalist, and every campaigner and researcher for the many stakeholders who are involved in those considerations. How do we get our collective discourse and position to a better place?

**The Convener:** Chris, you do not have to make a separate address to each of those people or groups of people.

**Chris Stark:** It would be a very long address if I did so.

**The Convener:** It is just that we are quite short of time and I want to bring in Monica Lennon.

**Chris Stark:** Of course.

I have worked in climate policy for 13 years. This is my final week, so I have been saying goodbye to lots of people and thinking a lot about that. If you will indulge me, I will talk about climate politics, despite being a technocrat—we are in that political system, and the privilege of this job is to observe it and be part of it. That is what I talked about on the BBC, on Laura Kuenssberg's show.

Climate politics is a bit like a sawtooth. We make progress but, inevitably, it falls back a little. It never falls back to where we started, and we keep making that progress. That is part of the political cycle on climate politics. We have been through one of those cycles in the six to seven years that I have been doing this job.

You can think of it as two halves. The first half is all about raising the ambition. I am very proud that we did the piece of work that led to the setting of a net zero target for Scotland and the UK. I like to think that that was in large part because of the quality of the analysis that we produced, but I know that it was also due to the fact that there was pressure from civil society for that target to be implemented. We had a very progressive and positive discussion about the benefits of acting more ambitiously on climate change.

The second half of my job has been a little harder, naturally. As we have seen—I will say it—there has been a backlash. However, the show has more or less stayed on the road, to use the term that I used earlier.

From that, I have learned that we make most progress when there is a positive discussion. My biggest concern in what you might call the backlash era is that we have left the vacuum that I spoke about at the start of my appearance, and the usual voices against climate action have filled it.

In *The Guardian* today, I talk about one of those issues. One of the ways in which it has manifested is that the term "net zero" has been captured by culture warriors as something that we should be afraid of. It is projected in some quarters as a threat to livelihoods and society. That is rubbish. We no longer have the positive discussion on net zero that we used to have, and we have to recapture it. It is important for our political leaders to step in to fill the vacuum with a more positive discourse on the benefits of climate action. I know how hard that is, because you have to face down some of those voices, as I have experienced in this job.

The benefits to this country of achieving net zero are immense—not just to the climate but in the form of jobs, to the landscape around us, to trade and to a host of social issues. Those reasons, alongside the climate benefits, are why you should want to pursue net zero.

However, we will not see those benefits unless we have a brand of political leadership such that, no matter what party you represent, you are willing to step up and talk about them, and to talk about the impacts that we are now seeing from climate change as a threat. As I said to Laura Kuenssberg at the weekend, I feel that that is the biggest issue. There is a collective fear of talking about climate, because of those voices that are speaking out against it—the voices of populism. I wish we could get back to the positive discourse that we had a few years ago, when it felt like we were really motoring. Scotland is part of that.

As you have given me the platform, my message to you all is: please feel emboldened to do that. It will be good for us all if you do.

**Monica Lennon:** I do not want to lower the mood, as you were trying to take us to quite a positive place—you will be missed in your role. You opened the evidence session by describing the dangerous moment in which we find ourselves. Last week, we heard reactions from charities and veteran climate campaigners about scrapping the 2030 climate targets. We heard from Oxfam that it is a "global embarrassment." We heard from Friends of the Earth Scotland that it was

"the worst environmental decision in the history of the Scottish Parliament".

People who know the climate science, the importance of getting things right, the opportunities and the prize that awaits us are not taking it well, and they are certainly not exaggerating.

You have spoken about a climate act that is in danger of being an empty vessel. There are blank pages where we should have good, bold policies. The Scottish Government has had 15 years to deliver transformative action. How do we get things back on track if it looks like there has been a real lack of political courage? There will be a lot of debate and discussion during the rest of the parliamentary session, there is a motion of no confidence and the Bute house agreement is in jeopardy. How do politicians find the courage here? What advice can you give to Government and Parliament?

**Chris Stark:** I think it is for politicians to decide where they find their courage. I think you're all nuts. I know, as someone who has worked with them throughout my career, that being a politician is an incredibly difficult job.

There is such a weight of evidence about the benefits of the transition. As an institution, we are quite conservative in our outlook about the benefits, but we could be far more positive—and I believe that that is where we will end up. It is good that we have a conservative Climate Change Committee in terms of how we view the transition, but everything tells you that the transition is now really taking hold, and you want to be part of that. If I can give you any encouragement, it is to own that story. The transition is good for the climate, good for the economy and good for people living in this country.

On the point about the empty vessel, the reason I think that is dangerous is that, if there is not real progress on policy over the next 12 months—with the Bute house agreement potentially under threat, as you say—a whole host of things could happen between now and our advice on the pathway that could leave us in a very difficult position, where there is not the same consensus

across the chamber to act on climate change. That would be a disaster.

All eyes are on the Scottish Government, and there is all encouragement on the Scottish Government to produce good policy here over the next period and to demonstrate that there is genuine commitment to act on climate change. If that has broad consensus and political support across the party divide, we will be all right, and this will be a decent period of progress.

Yesterday I retweeted something that Màiri McAllan said: that she feels that the 2030 target has been a block to producing the climate change plan. Okay: we have removed that target now, so let us get the plan out and actually have good, strong policy on this stuff, which has broad support. I will just be an observer of the work that we produce, but we can then come back to the targets and to what I hope will be a really important piece of work from the Climate Change Committee that has the right numbers in it this time for the path that we are on. We will not make the mistake of overheating those targets again. It is such an important year to do that.

**Professor Bell:** I would second all that, and I would echo the call that Chris Stark has made about politicians feeling like they can really own the debate, getting involved in it and making the case. As a technocrat, I want to see those numbers that we spoke about earlier. The policies should have been going on anyway, and they were always going to be part of the transition. We should be doing those now. Let us see the detail and the numbers, and let us see the policy delivered.

**The Convener:** I am going to ask the last question, if I may, but I am not sure how I am going to phrase it, having just been told that I am nuts—or, indeed, all politicians are.

This is what I am trying to see from the committee's point of view: we are going to get new legislation to amend the 2019 act, and you are suggesting that it will be based on carbon budgets rather than climate change plan targets. In other words, one approach will be scrapped, to be replaced by the other. However, when the people's panel reported back to us just last week, I think, they said that we are not hearing enough information or detail from the Government. Should we as a committee expect the amendment legislation to set out the first carbon budget figures? After all, if we have to scrutinise legislation, knowing that there will be changes and that something is going to be brought forward in future, that is going to be a really hard sell to all of those people who have written to us—and, let me tell you, there are lots and lots and lots of them, Chris.

**Chris Stark:** They write to me, too, and if my mail box is anything to go by, I am sure that there are lots of them.

It is difficult, but I really do feel that it is important not to fill in the numbers on that pathway until we have done our work. I am repeating what we talked about earlier, but a mistake was made in setting that 75 per cent target, and it happened because we did not have the benefit of the pathway analysis. It is really hard to get on to these pathways, and I hope that we are able to hold open the space to allow the numbers to get filled in early next year.

I think that two or three things prior to that will help, though. First of all, we can provide advice on the appropriate carbon budgeting arrangements. You do not need the numbers for that; you can set up the legislation in the right way, and you can have a debate about how that will work. That will be useful.

The cabinet secretary also promised to continue the annual update; that is really important, as it will allow us to know from ministers and the Scottish Government what they are achieving in policy terms. We will also have the plan itself. Moreover, if you are looking for a guide to the kinds of reductions that will be necessary, we have also provided that for you in the last piece of work that we did. That was based on our 2020 analysis, which we updated 18 months ago with some extra information to make it more appropriate to Scotland.

There is at least a loose guide from the CCC about the trajectory that Scotland will need to follow. Given that it will all be updated in early 2025, I would not follow it to the letter, but I think that it will give you some sense of the emissions reductions that we need to achieve with the policies promised from the Scottish Government over the next year.

I realise that that is not ideal but I think that, by the start of next year, we will be in a much better place if we have carbon budgeting in place, a pathway that has been advised by the CCC and a committed policy programme with numbers in it—which brings me back to Keith Bell's point. The numbers have to be in it, otherwise we will not know where we are.

**The Convener:** I just think that it is going to be quite difficult for us to take evidence on a bill that makes changes to a system that at least had some certainty—even if you considered it unachievable—with the promise of jam in the future, if we do not know what those figures are. You have already told us today that carbon budgets will have a fairly soft landing in the first couple of years. That might well be a real concern,

and I guess that it will be interesting to see how the Parliament deals with it.

I cannot comment on that, and I am sad to say that Chris Stark will not be able to do so here, either, as this is his last week. Chris, I think that you said that you finish on Friday and start a new job on Monday. I do not know whether that is a case of no peace for the wicked or whether you are just keeping your options open as far as work is concerned, but we wish you the best of luck. You have always been a candid friend to the committee, telling us things that we might not have liked to hear. I am very grateful for that, and I am grateful that we have had this extra opportunity to speak to you.

As for Keith Bell, having heard that your appointment has been extended until April next year, Keith, I am not going to say goodbye to you, as I think that there is a very good chance that we will see you in future. It might be for the year-end assessment—or maybe before that, depending on what happens.

**Professor Bell:** I hope that I will have got over this cough by the time that I see you again.

**Chris Stark:** You might not make it.

**The Convener:** He might well follow your line, Chris, and decide that he wants out, because all politicians are nuts.

I thank the witnesses very much. We will now move into private session.

11:30

*Meeting continued in private until 12:48.*

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