OFFICIAL REPORT
AITHISG OIFIGEIL

Net Zero, Energy and Transport Committee

Tuesday 31 August 2021

Session 6

The Scottish Parliament
Pàrlamaid na h-Alba

Tuesday 31 August 2021

CONTENTS

NET ZERO, ENERGY AND TRANSPORT COMMITTEE
2nd Meeting 2021, Session 6

CONVENER

*Dean Lockhart (Mid Scotland and Fife) (Con)

DEPUTY CONVENER

*Fiona Hyslop (Linlithgow) (SNP)

COMMITTEE MEMBERS

Natalie Don (Renfrewshire North and West) (SNP)
*Jackie Dunbar (Aberdeen Donside) (SNP)
*Liam Kerr (North East Scotland) (Con)
*Monica Lennon (Central Scotland) (Lab)
*Mark Ruskell (Mid Scotland and Fife) (Green)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Keith Bell (Climate Change Committee)
Lord Deben (Climate Change Committee)
Chris Stark (Climate Change Committee)
Collette Stevenson (East Kilbride) (SNP) (Committee Substitute)

CLERK TO THE COMMITTEE

Peter McGrath

LOCATION

The Mary Fairfax Somerville Room (CR2)

Scottish Parliament

Net Zero, Energy and Transport Committee

Tuesday 31 August 2021

[The Convener opened the meeting at 10:31]

Decision on Taking Business in Private

The Convener (Dean Lockhart): Good morning and welcome to the second meeting in 2021 of the Net Zero, Energy and Transport Committee. I remind members and other staff that social distancing measures are in place in committee rooms and across the Holyrood campus.

Natalie Don has sent her apologies. On behalf of the committee, I congratulate her on the birth of her baby boy. I welcome Collette Stevenson, who is attending the public part of the committee meeting as an individual MSP.

Item 1 on the agenda is to take a decision on whether to take in private item 3, which will be consideration of this morning's evidence from the United Kingdom Climate Change Committee. Do members agree to take item 3 in private?

Members *indicated agreement.*

Climate Change Committee

10:32

The Convener: Item 2 is evidence from the United Kingdom Climate Change Committee. I welcome the Rt Hon Lord Deben, who is its chairman; Chris Stark, who is its chief executive; and Professor Keith Bell, who is a Scottish representative on the committee.

Ahead of us, in this session, our committee has the very important task of scrutinising matters that are within the wide-ranging remit of the Cabinet Secretary for Net Zero, Energy and Transport. To help us to determine priorities for our first work programme, we will spend the opening weeks' committee meetings hearing from many key stakeholders. The Government-led response to the climate emergency will be of crucial importance in this parliamentary session, so it is entirely appropriate that representatives from the Climate Change Committee are our first witnesses today. We are delighted to have them here; I thank them for taking time out of their busy schedules.

Before we begin, I have some brief technical information for witnesses who are attending remotely. Broadcasting staff will operate your cameras and microphones. When you are called to speak, please allow a short pause before speaking, to allow broadcasting to activate your microphone.

I understand that Lord Deben wishes to make an opening statement.

Lord Deben (Climate Change Committee): Thank you. Because the Net Zero, Energy and Transport Committee is a new committee, I thought that it would be helpful quickly to go over the history of our committee. We were appointed as a committee of the whole UK Parliament by the Climate Change Act 2008. The act was passed with support from all parts of the house, which is an unusual circumstance. I think that only eight people voted against it, so we have a commonality and we have protected the independence of the committee. As chairman, I am appointed not by the Prime Minister but by the minister in the United Kingdom Government who is responsible for climate change, as well as the First Ministers of Scotland, Wales and Northern Ireland. Therefore, one has a situation in which there is no party-political input. Indeed, the only thing that those ministers were not was Conservatives, which is what I was, although I now consider myself to be an independent, in these circumstances.

We have very clear rules from Parliament, which say that we are to produce the budgets that will drive our fight to reduce our emissions. To start with, we were going to reduce emissions by 60 per

cent. Then, the target became an 80 per cent reduction, and now we are committed to net zero emissions.

The work that we do is based, first and foremost, on the science. Nothing is more important to us than our international reputation for getting the very best answers based on the science that we have. We do not press particular theories or projects and we are not a non-governmental organisation; what we try to do is give the best possible advice. Of course, when that advice is given, Parliament—whether it be the United Kingdom, Scottish or Welsh Parliament—decides on the budgets that it will support. Once those budgets are passed, they become legally binding.

We have a particular relationship with Scotland of which we are proud and which we hope will continue to grow. We advise the Scottish Government separately, and it acts under its own legislation. I am pleased to say that it looks as if we will have an even closer relationship when we are able to open an office in Scotland, which will emphasise the very clear difference between what we do here and what we do in the rest of the UK.

I am particularly pleased with many of the steps that Scotland has taken, because it has given me the opportunity to ask other parts of the UK, "Why do you not do this as well as the Scots are doing it?" The job of our Scotland representative, Professor Bell—which, I must say, he does very well—is to remind us at all points, when we are dealing with things, whether they involve the United Kingdom as a whole or talking to countries outside the UK, that we must remember Scotland's particularities. I am very pleased that he has been able to join us this morning. Of course, our chief executive is also a Scot who previously worked for the Scottish Government. I hope, therefore, that the committee recognises that the Scottish voice is certainly not stilled in the Committee on Climate Change.

I just want to end with a reminder of how serious matters are. Although the Intergovernmental Panel on Climate Change's recent report underlines what we previously knew, it also sharpens the situation even more. We are faced with a fundamental threat to the planet and humankind, so one should never be prepared to understate how serious the matter is. At the same time, however, we have the confidence of knowing that, if we act immediately, we can win the battle. We have no time to lose, because we have given the timetable to climate change, so until we can recapture control, we will have to work under its demands, which are, I am afraid to say, very considerable. I hear people saying, "Perhaps we can put this off", but that is not within our gift.

I therefore appreciate the Scottish Government's decision to set up this new committee and, indeed, the changes that it has made to its own structure. We hope to work very closely with you in the coming years.

The Convener: Thank you very much for those opening remarks. As you will be aware, the 26th United Nations climate change conference of the parties—COP26—will commence in eight weeks' time. What has been the Committee on Climate Change's role in preparing for the conference and, indeed, in advising the UK and Scottish Governments in preparation for it? What are the key criteria and outcomes to look for in benchmarking success at the conference?

Lord Deben: The central issue here is that we had to prepare the mechanism for reaching net zero as our response as a nation to the results of the Paris agreement. The Paris agreement was unique: it was the first time in the history of mankind that every nation on earth signed up to a climate agreement. That did not mean that they all stuck to it, but it was unique in that they signed up.

The British Government asked us whether we could reach net zero and, if we could, what would it cost and by what year could we reach it. We answered those questions and the Government then agreed to that programme, so our first contribution was to set the format for Britain in COP26. We then produced "The Sixth Carbon Budget—The UK's path to Net Zero", which in effect provides a programme to reach net zero, because by the time we get to the end of that budget period, we will have set ourselves absolutely directly in line for net zero by 2050.

After that, the Government accepted the full budget and the very demanding challenge of dates for emissions reductions by 2030 and 2035, so it has set a real example for the rest of the world. I am a believer in congratulating people when they get it right, and that situation is as good as it could be. The problem is that the programme for making that happen is at best piecemeal and very often non-existent, so our role at the moment is to press the Government to deliver the programme and to show how it is going to do those things. Unless it does that, when we come to COP26 people will not believe that the targets that we have set are real. They become real only if the Government shows that it has in place the mechanisms to achieve them.

That has been how we have talked to the Scottish Government, the Welsh Government and now—because, of course, we had an interruption—the Northern Ireland Executive. That is how we have tried to do it; we are keeping up that pressure. I am talking to senior ministers from each department and impressing upon them the

detailed things that they must show that they will do to make COP26 a success.

Success is difficult to define in advance, but there would have to be three elements. First, the great nations that rely on fossil fuels will have to reconnect and be prepared to increase their commitments. There has been a good start to that. The coming of Joe Biden has been very important. It is also true that South Korea, Japan and most of the industrialised world have already shown that they are prepared to move further and faster.

I am afraid that Australia is not in that camp. One of the big pressures will have to be about Australia and one or two other countries that feel that the rest of the world can do it but they do not have to join in. That is not something that we will be able to deal with. Australia is one example; Brazil is another country that has to make some big changes if the rest of the world is going to be able to make its commitments, because this is a global decision.

Secondly, we will be looking closely at the commitment of the rich countries to make it possible for the poor countries to reach net zero. What has to happen with them is very much what has happened with mobile telephony. To a large extent, they have not gone through installing a system of landlines, but have jumped from having no telephones to mobile telephony, with no landlines. They will have to jump from their developing status to the better world that they rightly demand without the intervening stage of dirty production. We, who have benefited from that dirty production, will have to pay for it.

That is why I am deeply sorry that the British Government has reduced its aid spending from 0.7 per cent to 0.5 per cent of gross national income, which is contrary to the Conservative Party's commitment in the election and undermines developing countries' belief that they will get that money. We will have to work very hard to show that we will keep our word as far as climate change is concerned.

10:45

Thirdly, to have success, we will need to know the mechanisms by which other countries intend to achieve the ends to which they are committed. That will be very important.

There will be some other issues. For example, at the moment, China is committed to reducing its emissions to zero, but not until 2060. It is important that we all commit to doing so by 2050, because only through that will we have a chance of keeping the increase in temperature down to 1.5°C, which must be our aim.

The Convener: Thank you very much for that comprehensive response. I am sure that committee members will want to follow up on what you have said. You mentioned targets. As you will be aware, the Scottish Government has set a target of achieving net zero by 2045, with crucial interim targets of a 75 per cent reduction by 2030 and a 90 per cent reduction by 2040. In recent years, some of the annual targets have been missed for various reasons. What are the key challenges in reaching the targets in Scotland? What sectors need the most attention? What areas of policy will be critical in achieving the targets?

Lord Deben: I will ask Chris Stark to say something about that. Scotland made a different decision to the United Kingdom by having annual targets. There are huge advantages to having annual targets; they keep feet to the fire, so I am not criticising them. However, one has to realise that meeting annual targets is always difficult, because if you have a very cold year, you look much worse, and if you have a very hot year, you look much better. Sometimes the NGOs do not recognise the need for a bit of levelling off, which is very important. We have always been prepared to be absolutely direct with the Government and to support it when changes or failures to succeed have not been because of policy failures but have been much more because of interim matters and differences between years.

Chris Stark (Climate Change Committee): Good morning. It is great to be able to speak to the new committee from my home in Glasgow.

I will say something about targets before I go on to the plan that we will need to meet the targets. Back in 2019, we advised that Scotland should set a net zero target for 2045 and that the UK as a whole should set the target for 2050. I want to make it clear that the two are the same target. The UK achieving net zero by 2050 rests on Scotland getting there five years earlier, at least. That is not because we think that Scotland is in a different political position and willing to make ambitious statements; it is because, importantly, Scotland has greater capacity to do some of the things that will need to happen across the UK in order to get to net zero. In particular, Scotland will be in a better position to store carbon in the natural world. It also has some industrial advantages that allow us to get to net zero earlier.

The 2045 date is very important. It is in the right place to be compatible with the Paris agreement, which we will be talking about a lot at COP26 this year. It is some 25 years ahead of when the rest of the world will need to hit net zero, if we are to be on track for the Paris pathways for all greenhouse gases. That gives a sense of how ambitious

Scotland is being and how ambitious the Scottish Parliament is being by signing up to such a target.

Beneath that, there are, of course, a set of decadal targets. The one that matters more than any other is the 2030 target that the Scottish Parliament has set, which is to reduce emissions by 75 per cent from their 1990 level. That target was set at a higher level than we suggested in the advice that we gave to the Scottish Government. Clearly, the Parliament has an ambition to achieve such an emissions reduction, but it will be extremely challenging to meet. To give members a sense of how challenging that will be, it took 30 years to halve Scottish emissions from their 1990 level, and we will need to do that again in less than a decade if we are to meet the 75 per cent target. That gives a sense of the extent to which the pace needs to change in cutting emissions.

A key part of the armoury in cutting emissions has been completed. Prior to 2019, Scotland's targets were met particularly by closing coal-fired power stations. Scotland has completed that journey ahead of the rest of the UK. We expect the UK's final coal-fired power station to close in 2024, whereas Scotland has got there already. That means that, looking forward, action will need to be taken in other areas of the economy. Crucially, Scotland will need to lead on some of that if it is to meet its 75 per cent target by 2030, because that 2030 target is ahead of the path that the rest of the UK will be following. I make no bones about that, because it is a really important point. Scotland will need to work extremely hard, and in some areas it will need to be ahead of the journey that the rest of the UK nations are making.

That puts into sharp perspective the plan that the Scottish Government has for cutting emissions. We have given advice to the Scottish Government about what needs to be in the plan and where the priorities lie. Scotland's climate change plan, which was updated earlier this year, has lots of good things in it, but my main criticism of it is that we could not get beneath some of the commitments that are outlined in the text to understand the numbers. Therefore, it is crucial that, in the coming months, we get a much better sense of how the Scottish ministers see the emissions reductions taking place across the economy, of what the numbers are and of the policies that will drive that process in every area of the economy.

We have said to the Scottish Government that it should prioritise reducing emissions from buildings. The heat in buildings strategy that it has promised must include a set of regulatory targets, frameworks and trigger points that allow us to understand better how Scotland will decarbonise buildings across the country.

A crucial part of the transition that is notably absent at the moment is a route map for agriculture, which has so far been quite resistant to cutting emissions. We know that there are lots of things in preparation in the Scottish Government that might allow us to peer at a different kind of plan for agriculture, but we have not yet seen that. There has been a change of agriculture minister, too, which might indicate that we will see more progress on farming emissions in the future.

Another priority is the strategy for cutting transport emissions. At the moment, transport is the biggest sector for emissions in the Scottish economy. The climate change plan update that was produced earlier this year included big commitments from the Scottish Government to cut emissions from surface transport. That will rest on a host of policies that we have not yet seen, which may change under the new relationship between the Scottish National Party and the Greens. It will be interesting to see what comes out of that.

There will need to be a much stronger focus on that area, because the challenge of cutting transport emissions more quickly than the rest of the UK involves doing things on walking, cycling and public transport that other parts of the UK might not pursue. An important aspect of the transition is that it cannot rest simply on a move to electric vehicles.

I do not want to go through every sector, so the final point that I will make is that a big part of the Scottish plan is to have lots of negative emissions technology—in other words, ways in which we can take carbon dioxide from the atmosphere and sequester it away—by 2030. That is a sensible thing to do, because the Scottish economy has an advantage here, in that we have infrastructure that would allow us to take that carbon dioxide offshore to be stored where we previously had oil and gas reservoirs. If we are to meet the 2030 target, we need that to happen in large part in Scotland. Therefore, the UK-wide plan for greenhouse gas removal will need to concentrate on investment in Scotland as a whole. That is a big part of what I will be looking out for over the next few months.

There are lots of other things that we could talk about, but those are probably the priorities, for the next 10 years at least, to get emissions down in Scotland.

The Convener: Thank you—that was enormously helpful. I will bring in Fiona Hyslop.

Fiona Hyslop (Linlithgow) (SNP): I want to talk about pace and trajectory in meeting the targets, which are very challenging. You emphasised that the Scottish Parliament has probably not taken your advice but has gone harder on the 2030 targets. I want to ask about your modelled

scenarios, which you call headwinds, balanced, widespread innovation, widespread engagement and tailwinds. I am interested in the role of new technologies and investment. Will you explain a bit more about what pathway we are on and the investment that is required to deliver that? Obviously, there have to be priorities and choices have to be made, but what do your modelled scenarios mean for Scotland in particular and for the UK?

Lord Deben: We have done all our work in the context of realism as far as new technology is concerned. There is one thing that we have been very careful about. Politicians too often go for silver bullets—they are very keen on them. That is why when the CCC talks about hydrogen, for example, we really try to talk about it in context. It has an important contribution to make, but we have not overcome a number of the problems and we must not think about it as something that will just solve our problems.

I want to set that context. We have been careful not to rely on things that we do not have pretty good evidence about. Obviously, we know that a good deal of technological improvement is on its way. We know that we can do carbon capture and storage. We know that there are things that we can do, as we knew that we could get the kind of wind power that we have been able to get. We have dealt with only those things where there is that degree of certainty.

The story of wind is absolutely key, because it shows that we will not get the investment that we need unless we set the context in which that investment is possible. We see the role of the Government of the United Kingdom and the national Governments very much as that of creating the atmosphere in which private enterprise will make the investment. Private enterprise will have to carry the majority of the cost. As you know, we have said that the cost will be about 1 per cent of the gross national product. That is a conservative estimate—many would say that it will be less than that—but we have been careful not to overstate the improvements in other ways that the changes will bring about.

Most of that investment will come from the private sector. The big issue is about how the Government creates the circumstances in which the private investment comes to Britain and makes it an advantage for Britain to be out there ahead. Scotland is doing some remarkable things, and we are clear that it needs to get the benefits from that. We want the Government to set the parameters within which people can invest but, as well as that, we want investment to bring jobs and technological advancement to Scotland and the rest of the United Kingdom.

As Keith Bell will tell you, the trajectory that we are on is what we call the middle road. In other words, it is a road that is based on the principle that not everything will go right. We might be able to do things better if everything goes right, but I am afraid that I have been around long enough to realise that we should not rely on that kind of trajectory. Keith Bell can explain how we made that trajectory decision.

11:00

Keith Bell (Climate Change Committee): Good morning, everyone. I am very pleased to meet you all.

With regard to the trajectory that you think that you can go on to meet your emissions targets in the different sectors, I come back to Chris Stark's comments a few moments ago about priorities. The fact is that this is a priority in every sector, and the pace that you can go at in a particular sector depends on the costs incurred in it relative to the costs in the other sectors, even though they all have to get where they have to go eventually.

Our modelling and assessments depend on the assumptions that we can make about the availability of different technologies, their state of development and how the costs will reduce. As we have already noted, the commercial environment established by Government can help with investment and in driving down costs. Indeed, we have seen that very dramatically with offshore wind. With the driving down of the costs of floating offshore wind, for example, we have been able to access other resources in deeper waters.

Other ways of reducing costs include the use of new refrigerants in heat pumps, which has allowed the retrofitting of air-source heat pumps in existing heat distribution systems in buildings to be done more cost-effectively, and there have been reductions in the cost of electrolysers for making hydrogen from electricity. However, although there are all sorts of opportunities, the one thing that we are not saying is that new technologies that people have not heard of yet are suddenly going to turn up to save the day and mean that we do not have to take action in other sectors. The different scenarios look at how certain things can be accelerated and how other things might be going a bit more slowly.

The other key dimension of our scenarios is the extent of what I suppose you would call public engagement, which relates to how people, institutions, companies, public bodies and so on change how they do things and whether there are particular options that they are more willing to take up. Technology can enable such options, make them easier to take up and give people more

confidence in them, but there are active choices that people need to make, too.

Fiona Hyslop: Given that we have to do all this—although perhaps at a different pace in different sectors—how are we going to pay for it? Chris Stark talked about investment in budgets by the Scottish Government, and I appreciate the advice on what we and indeed the UK Government should be looking for in order to get underneath that investment. However, the committee chair mentioned that most of the investment required will need to come from the private sector. What does that mean in the Scottish context, if most of the investment in technology to meet UK targets has to come from Scotland?

Chris Stark: Shall I take that one?

Lord Deben: Before you do, Chris, I just want to come back to the point about how we pay for this.

At the centre of this is the need for a just transition. When we think about how we pay for it, we need to think not just about the totality but about how the costs will fall on different sectors and groups of the population. I want to make it clear that the Committee on Climate Change talks about this issue only in the context of pointing out that Government must ensure that it can make this transference in a way that does not fall upon the poorest. That means that the community as a whole must make it a fair transition.

I will pass over to Chris Stark for the details.

Chris Stark: First of all, I want to say a word about the overall economic challenge, because it is worth while to highlight the context.

We see net zero as being entirely achievable without, crucially, being a major cost to the economy. If we prioritise investment over the next decade, when we expect there to be some spare capacity in the Scottish economy as we come out of Covid, it will likely be a significant boon to the economy over the same period. It is important to make it clear that this is mainly an investment challenge. Getting to net zero is not just a matter of investment; it is about investing in new capital assets across the economy that progressively move us from the situation today of using assets—the cars that we drive, our gas boilers, the plant machinery used in industry and farming—that burn fossil fuels. If we can progressively replace those assets, preferably when they have reached the end of their useful economic lives to ensure that we are not creating a major cost, with something that is zero carbon as quickly as we can, our society and economy can by, say, the mid 2030s be increasingly comfortable with using those assets and technologies as a matter of course.

It is important to think that way about it because the important fact is that, if you buy a fossil-fuelled asset today, the useful economic life of that asset is between 15 and 20 years. If you buy a boiler today, you will be using it to heat your home for around 15 years, although some assets will last longer.

That is important when we think about Scotland's 2045 net zero target because we have to knock 15 to 20 years off that target to understand the date by which we have to stop selling, buying, installing and using fossil-fuelled assets. That points to 2030 as the critical date by which we have to be ready to start that big economy-wide investment and transition as quickly as we can.

If we look at the transition in Scotland over the next 25 years, we see that it is a big investment challenge. We will probably add about one eighth to the total investment that Scotland would have made in any normal year before the pandemic, probably adding £5 billion of extra capital spending each year. That is a big number, but the crucial piece of economics that goes with that is that it gets us to net zero, which is great news, and it also brings significant energy efficiency improvements. Something like an electric car is much cheaper to run than a fossil-fuelled car. It is a much more efficient technology, and we find that across the piece, because most of those technologies happen to be electrified technologies.

That efficiency and the fact that we are not spending money on fossil fuels will be a saving to the person who is using that technology or asset. When you knock off the saving from the major investment costs, you get to a low net figure which we call the net resource cost, and it is less than 1 per cent of Scotland's gross domestic product in every year between now and 2045.

That is a brilliant position to be in. We were not talking that way about it just a few years ago. However, it ultimately rests on making sure that we put the policies in place to guide investment as quickly as possible towards those things that we know will reduce emissions quickly. That means that the next decade, especially the current parliamentary session that the Scottish Government is planning for at the moment, is absolutely critical in terms of putting in place policies that will deliver the investment outcome that I have just talked about.

To go back to my opening point, if we do that in the right way, a package for net zero will look a lot like a Covid-19 recovery package. If the Scottish Government spends on infrastructure, skills and training, and the creation of new jobs, there will be a clear win-win between the Scottish economy's recovery needs and net zero overall. If infrastructure investment flows to where we need it

to go, especially transport, and to continuing to grow our power system in industry, which is a big challenge for Scotland, and to decarbonising homes across Scotland over that period, which is the biggest challenge of all, we will get that win-win that I have just talked about.

Fiona Hyslop: Does anyone want to comment on how we maximise private investment?

Chris Stark: I could pick that up. As Lord Deben says, there is a real need to guide private investment. All this cannot be done solely through public investment, not least because Scotland will not have the resources to allow us to amass the kind of public investment that we would need.

We can, however, pave the way for that with a couple of things. There is a need for private investment, particularly in the infrastructure that we will need across Scotland in transport. We will need some public investment in supporting the decarbonisation of homes, but that needs to be accompanied by a set of incentives and regulations to guide it. The most obvious of those is the transport transition, or the date by which we stop selling fossil-fuelled cars and vans, which I hope will be 2030 across the United Kingdom. That is regulatory policy that clearly guides private investment, and we need similar policies, especially for the decarbonisation of homes. People who are in homes, whether they rent or own them, need to understand the date by which we will begin the replacement of the gas boilers that make up about 80 per cent of the heating that we have across Scotland.

We need a combination of regulatory policies with policies through the tax system and some subsidy support to help those who are least able to pay. John Deben was entirely right to say that the majority will be guided by private investment, including corporate investment in making homes and offices more energy efficient and corporate investment in new electric vehicles. That will be alongside the public investment that will grease the path.

Liam Kerr (North East Scotland) (Con): I have two or three questions on the back of what I thought was a very interesting line of questioning from my colleague Fiona Hyslop. Your report puts a figure on investment. It says:

"Low carbon investment must scale up to £50 billion each year".

It then says:

"In time, these savings cancel out the investment costs entirely".

Later in the report, it says:

"Now is an ideal time for the UK to invest."

As we have heard, you have said that private investment is the key. The question that arises from Ms Hyslop's line of questioning is: how much of the £50 billion will come from Scotland and the taxpayer, and how much will come from private investment? Is private investment part of the £50 billion, or is the private investment on top of £50 billion of public investment?

Chris Stark: It is important to say that the £50 billion is the total figure for private and public investment. We expect that, of the £50 billion, about £5 billion of investment is necessary in Scotland. Politics then comes in. What proportion of that money should be shouldered by the state directly, and what proportion should be handed more directly to consumers and citizens? It is difficult to take a firm view on that, although we have some sense about the way in which the balance would need to work in some sectors if we are to be successful.

The £50 billion figure is the total additional cap ex across the UK economy, and we expect about £5 billion of that investment to take place in Scotland. Again, there should be a mixture of private and public investment across each sector of the economy.

Liam Kerr: I will press you on that, because it is a good point. Your modelling shows that there are savings to be made in surface transport and energy but that there will be costs to homes and industry. I think that you suggested, in an earlier answer, that we should prioritise buildings. Do you take a view on how the costs could or should be addressed and mitigated? Who is going to pay for the costs in relation to buildings that you rightly flag?

Chris Stark: Let me confirm the premise of that question. There are some sectors across the economy in which there is a cost saving. The most notable of those sectors is transport. That is because the energy efficiency of replacement vehicles, particularly electric vehicles, is so much better that you get a saving from using the car. Eventually, the unit cost of the car or van also comes down. That saving plays out over time.

Savings also play out over time in the energy system. Importantly, we expect that green energy, especially renewable energy, will be cheaper than fossil fuel energy, which means that there will be a double benefit from any sector that can use that cheaper power in the future. There is still a lot of investment to be made in that area and some costs to come through, but that is an exciting part of the transition.

Those two parts of the assessment make it easier to get to net zero, but we cannot duck the fact that there are some sectors in which there are real costs. You mentioned two of the most

important: buildings, especially homes, and industry. We expect that we will need to make a lot of investment to decarbonise in those sectors that would not be made in normal times. Those are real costs, so we have to have a discussion about how the costs will be allocated and, crucially, what role the state will play in protecting consumers in those sectors, people living in their homes and industries operating in the economy from the cost of the transition.

I have not got a figure for how much state support will be needed, but that is the critical issue. Some costs can be levied on decarbonising homes, in particular, and industries, but we will not be successful in the transition unless there is some state support to protect industries, consumers and people living in their homes from the costs of decarbonisation.

11:15

The final point that I will make is the one that I opened with, which is about the really important part of this—that there is a saving somewhere else in the economy. The exciting piece of policy making that can be done is around capturing some of that saving and moving it across to those areas where there is a cost.

That points especially to the need for strong fiscal policy. Some of those fiscal policies will, of course, sit with the chancellor in Westminster, but some of them are within the gift of the Scottish Government to change. For example, we can think of the property taxes that could be levied and the way in which the property taxation or council tax system could be used.

That challenge of shifting the burden—of moving the savings in some sectors to help meet the costs in other sectors—is the critical component in achieving a fair transition overall.

Liam Kerr: I am grateful for that, and strongly agree. Mr Stark rightly talked about a fair transition. Lord Deben also brought that up earlier, when he said that the transition must be fair. I will press that with my final questions.

What does a fair transition mean, specifically in the context of the oil and gas workforce? How would you expect to see the Scottish Government ensuring that there is a fair workforce transition for the oil and gas workforce in particular? What would you expect to see it doing right now to ensure that that is delivered?

Lord Deben: First of all, we need to learn the lessons of the past. In the United Kingdom, we have allowed changes to take place without taking seriously their effects on localities and communities. For that reason, I believe very strongly that this has to be approached in the way that Mr Kerr thinks of it.

We need to look at that industry and consider what we can do to ensure that there are alternative jobs, and how we will use our ability to have carbon capture and storage, for example, and make that part of the transition. It is not a question simply of fairness between people of different economic abilities to pay, but also of fairness in terms of regional development and the regional concentrations of many of the jobs that we will lose. Part of the role of Government will absolutely be to seek to find ways, with the private sector, to make that transition as fair as possible.

Another thing that I was going to suggest is: can we please stop making it worse? If I have a disappointment about the Scottish Government, it is that it has not said to the United Kingdom Government that it is fed up with the situation of its building houses that it is going to have to retrofit, and that it is not insisting on all houses being built to a standard such that they do not need retrofitting.

We are still waiting for the United Kingdom Government to put into operation a nationwide scheme in relation to new houses. We have built 1 million houses that we are going to have to retrofit, and all the people who have bought those houses have been given an unfair burden, which could have been put right had the houses been built properly in the first place, as the costs would have been considerably less. It is therefore not just a question of fairness in what we do for retrofitting in that area; it is absolutely about getting on with the job of ensuring that everything that is newly built does not give people a cost that they should not have.

The Convener: We will hear from Mark Ruskell, to be followed by Monica Lennon.

Mark Ruskell (Mid Scotland and Fife) (Green): Good morning, convener; it is nice to see you again.

I will pick up on Liam Kerr's questions about a just transition. In the SNP-Green policy agreement that will be presented to Parliament today, there is a line about better understanding what our fossil fuel requirements will be as we make that transition and how that relates to field development in the oil and gas fields that are already being exploited and which may come under licence.

How would you see such a programme of work to better understand the speed of that transition? How could that be done, and what could be the role of the UK CCC in coming to a conclusion around how much fossil fuel resource we need to meet our domestic needs and how that will change over time?

Lord Deben: We have done the initial work on that, and we would be happy to work with the Scottish Government on that particular project, which is important.

It is important to try to keep rationality in this. We would of course all love to move from today to tomorrow and have no fossil fuels in between. Those who are particularly exercised—thank goodness that they are—about the damage and serious nature of climate change tend to talk as if that were possible. I am very much in favour of their making the fuss, because it helps to get the rest of us into the right place, but we cannot do it just like that, so we have to be clear that there will be a need for fossil fuels.

We also have to be clear that we must not allow that to mean that we retain fossil fuels for a moment longer than we have to. Of course, that is another technique that some people will use to try to undermine the whole process, often for their own financial interests. Therefore, laying down that information clearly will be very important, and it will be pretty difficult.

We have to ask ourselves whether there is any case for extension or new sources. The international view is that there is not, but the national view might be that we could argue that, by controlling the way in which things are produced, we have a better chance of ensuring that the emissions are reduced. The problem with that is that it is not always possible—indeed, I cannot think of an occasion when it has been possible—to ensure that, if we do more, someone else will do less. It does not work like that. Those sorts of decisions have to be thought out seriously.

I must say that I greatly appreciate the Scottish Government's determination to apply logic and reason to all this, which is really important. We would be happy to join in with the logic and reason, even though what comes out of that might be quite difficult.

Mark Ruskell: Thank you—I am a big fan of logic and reason.

I move on to hydrogen. Lord Deben perhaps hinted a bit at the different pathways for development of hydrogen. The CCC said previously that blue hydrogen is

"a necessity not an option",

but there are concerns that, if we invest too heavily in solutions such as putting blue hydrogen into the domestic heating grid, we could extend the use of fossil fuel reserves and our dependency on them. It is a difficult balance to strike. What are your thoughts on blue hydrogen now? Are we now building in dependency and locking in emissions or is the use of blue hydrogen an effective stepping stone towards green hydrogen and completely decarbonised use of the technology in domestic buildings?

Lord Deben: The first thing that we always have to accept is that we are where we are and not where we would like to be. Where we are is that we have said that blue hydrogen is a necessary part of the transition that we have to have. However, as with all transitions, we have to constantly realise that it is a transition and that we are not doing things in order to get stuck at a point in that transition. You are absolutely right that this is not easy. I am not suggesting that there is an easy answer.

We need to keep absolutely in front of us all the time the need to move away entirely from fossil fuels, but that does not mean that we do not have to recognise that the transition will not happen overnight and that the role of blue hydrogen in helping to make that transition is very certain.

I always talk about that issue with the caveat that it is not an answer but a transition necessity. If one keeps that in mind all the time, the way that the investment is done and the mechanisms that we use will not be those that fix blue hydrogen in the system. We have to be very careful about the investment mechanisms, which is one of the reasons why, when we had to give some answers on fracking for example, we made clear that one of the things that we have to think about is that we should not make investments that then make it difficult to stop doing what we are doing. It is exactly the same when we come to deal with blue hydrogen.

Mark Ruskell: Is that the right balance? A couple of weeks ago, we saw that the UK hydrogen strategy, which mirrors the Scottish Government strategy in many ways, looks at putting 20 per cent hydrogen and 80 per cent natural gas into the gas grid. Are the right policies in place at the moment? Will that build in a dependence? Does that meet your tests?

Lord Deben: The right policies are not in place at the moment, but what is in place seems to be a reasonably good beginning. However, they do not answer a whole number of questions, and I am sure that Keith Bell will point those out. We have to recognise that we are on a journey and on journeys you are at different points at different times, and this is the first point. Thank goodness we have a hydrogen strategy and, in general, the hydrogen strategies for Scotland and the United Kingdom as a whole are not a bad start, although we have some comments about them. We now have to make sure that as we move on, we address the problems that Mark Ruskell outlines.

If Keith Bell points out one or two of the issues that illustrate that, that would be helpful.

Keith Bell: The 20 per cent blend of hydrogen relates to volume, but in terms of energy that represents only 8 per cent, so it is not really much of an answer. It might be useful as part of getting the demand for low-carbon hydrogen going, so the question quite rightly raises issues on the production side of blue versus green hydrogen, where the hydrogen is coming from and the fact that blue hydrogen is not entirely zero carbon because we cannot capture all of the emissions associated with it. Until we decarbonise the electricity system, making hydrogen from electrolysis is not perfectly zero carbon either. Those kind of questions are there to be raised.

How do we create the demand for carbon hydrogen? Where does it come from? A demand can be created very quickly by the means that Mark Ruskell just talked about, by blending into the existing system. Trials show that that should be perfectly possible and safe, but that is only a small amount of energy. Growing the demand for low-carbon hydrogen subsequently in relation to industry is another part of the picture, but what are the commercial mechanisms that would do that? Low-carbon hydrogen will be more expensive in the short term than high-carbon hydrogen depending what is done in terms of carbon pricing.

What the future of the existing gas network will look like, and whether it is entirely repurposed, also depends on what that demand will be and what the alternative sources of energy are in the different sectors—for example, in buildings as well as in industry.

Scenarios such as the balanced pathway that we produced for the sixth carbon budget show a ramping up of the use of electrolysers for the production of hydrogen through the late 2030s and into the 2040s as the electricity system becomes entirely decarbonised. We made the recommendation that there should be no use of fossil fuels in any unabated way for the production of electricity from 2035, which gives us the platform for electrolysis being entirely zero carbon.

As Lord Deben said, we do not want to lock in to the capital stock that causes us to be doing high-carbon or even modestly high-carbon things consequently, so there is a limit to how much we want to build in that infrastructure for the production of blue hydrogen, although some of the infrastructure in relation to carbon capture and the transport and storage of CO_2 will be shared with other parts of industry—for example, the opportunity for bioenergy carbon capture and storage, which is one of the negative emissions technologies that Chris Stark talked about earlier.

11:30

Monica Lennon (Central Scotland) (Lab): Good morning, colleagues. In your very wise opening remarks, Lord Deben, you referred to the recent IPCC report and emphasised the need for immediate action. You also said that your committee tries to give the best possible advice, which is reassuring, but what is the best possible advice that the Climate Change Committee can give to Governments and key decision makers on new oil and gas developments, including the proposed Cambo oilfield off Shetland? Given that we have no time to lose, how should new oil and gas developments be considered in light of the IPCC report?

Lord Deben: I have talked already about rationality and the difficulty of bringing these things into account. If you keep getting a daily reminder of the seriousness of the matter, you will always feel the pressure to do everything at once. One has to keep applying that to all the realities of life.

However, the justification for any new oil and gas exploration or production has to be very strong indeed, and I cannot say that I have seen that so far. That said, I have never been an absolutist on the matter. We have to face up to the issue that there might be some occasions when we think that development could help our move towards net zero to such a degree that it would be worth doing. However, we always have to remember that, once you do that, you set an example that will be quoted throughout the world as showing that such development is acceptable.

We also have to take into account that there are Governments—I mentioned Australia before—that do not need any examples to take such steps. My judgment is that such developments should happen very rarely, and we would have to be very sure before we allowed any extension. All sorts of edges around that, such as contractual obligations, need to be thought about, but it all comes back to the fact that we are fighting a battle for our existence. In that light, you cannot make short-term decisions without thinking about long-term implications.

Monica Lennon: It is not only Governments but individual citizens who are making decisions every day. I was struck by Professor Bell's earlier comments about public engagement and the active choices that people need to make if we are going to change how we do things. It is clearly very important, therefore, for Governments to set a good example.

The committee is looking closely at the recommendations in the citizens assembly report. Is the Climate Change Committee considering them, too, and will it make a formal response?

Lord Deben: We have been very involved in that work and are strongly in favour of the effect of the citizens assembly. It was an experiment of enormous strength and power, and it very much showed that, no matter their background, people who are immersed in these issues come to very sensible and acute answers.

Of course, the problem is that we cannot immerse everybody in the country to the degree to which those in the citizens assembly were immersed. Many of them will tell you how much it mattered to them to learn as much as they were able to learn and to ask the questions that they were able to ask. The assembly's conclusions are, for the most part, mirrored in what the Climate Change Committee has put forward.

We are very much in favour of that kind of operation. Indeed, we have pressed all Governments to make a much more high-powered effort not just to provide public information and education, which is how they tend to think about it, but to ensure public involvement so that people understand not just why Governments are doing certain things but what they themselves can do and the contributions that they can make, which they might have thought of themselves. That is a crucial part of the spirit of the citizens assembly.

Chris Stark: As a participant in the UK-wide climate assembly that took place last year and the Scottish assembly, I thought that both processes were fantastic. I do not mind admitting that I went into the UK assembly, which came first, with some trepidation, because I was not sure how the process would work, but I echo everything that Lord Deben has said about the value of such processes. You can see immediately that people need to understand better some of the changes that must take place across society.

I also understood very quickly from both the Scottish and UK assemblies that there is a lot of public support for such changes, once people understand what they are and their importance. It is important for Governments across the UK to take the time to explain to citizens in the UK why such changes need to take place, because I passionately believe that the support will be there if that happens.

With regard to the technical work that the Climate Change Committee does, we had the opportunity to use information from the UK climate assembly—I am afraid to say that we did not have the same opportunity from the Scottish assembly, as we did not have the results from it—in the very detailed work that we published last December on the sixth carbon budget and which painted five different scenarios for achieving net zero across the UK. Some of the information that came from the climate assembly was absolutely dynamite, and it was fantastic to have it, as we had not had that kind of information and data before.

The information highlighted issues such as preferences for changes in travel and the extent to which people are willing to see changes in the home, changes in industry and even changes in diet. We have not had such important data before, and we used them wherever we could in our technical modelling. When we were uncertain about the extent of behaviour change across the economy, for example, we could turn to and use the numbers that came out of the climate assembly's work. I expect that we will be able to do the same with the Scottish assembly and to use that information in our modelling. That, I think, is the major way in which we can support that work.

The Convener: Liam Kerr has a supplementary question in that area.

Liam Kerr: I want to pick up very briefly on Lord Deben's response to Monica Lennon that the justification for new exploration and production must be strong. Given that demand for oil and gas-related products in the UK seems to show no sign of changing dramatically, might the impact on UK security of supply, sourcing location decisions and the fair transition that you have rightly referenced not provide that justification?

Lord Deben: The problem with asking that question is that it raises a second question: by producing more here, are you actually adding to the total? After all, even if people are not buying such products, those already producing them will still be doing so. There is a real issue of the balance between our interests as a nation and the fact that climate change is a global problem that requires a global answer. In those circumstances, it must be a very strong argument to overcome the simple point that we must all stop using fossil fuels. That means that we must all accept that we will not produce more of them, because we will not use more of them.

If we produce more fossil fuels, only if other people reduce their production can that be a genuine contribution to what is happening in the world as a whole. So far, we have not paid enough attention to the fact that some proposals that are being made will add to the amount of fossil fuel that is being produced, when we cannot afford additions. That is what the world authority on fuel has said, and that is why it has said that no further extension should be made to our production facilities.

Jackie Dunbar (Aberdeen Donside) (SNP): Thank you for coming today—you have given me a lot to think about. I am interested to hear about Governments moving forward. Where can the

strongest policy action be taken not only in reserved areas but in devolved areas?

Lord Deben: We have said that policy action is most urgent and necessary in buildings, which involve reserved and devolved matters. That is the largest and most important next stage. When a country gets well into the programme for decarbonising the electricity system, the next item is buildings—particularly now that we are on the way in much of the transport system.

The major issue is in buildings. Devolved powers can be used in a number of areas. As I said, I have always been sad that the Scottish Government has not used its powers to insist on house building being ready for the future more quickly than in the rest of the United Kingdom, which has been disgraceful in its speed.

The UK Government's decision to cancel the zero-carbon homes policy in 2015 was a major failing that we will pay a lot for. A million householders will pay a bill that they should never have had. Things such as that proposal can be done, and adopting such a policy would be a crucial element and a challenge to the rest of the UK. On reserved matters, it is true that the UK could also set such standards, which would make a significant difference.

Another area in which a major battle will ensue is land use, which raises an issue for reserved and devolved responsibilities. We will have to make a tough change. There are good ways of doing it, which must be done together. I keep saying that we will have to eat less, because we all eat too much. One of the things that we must eat less of is meat, and we must eat better meat, which is British meat, because it has the smallest carbon footprint of all meat. We should do that together—I said that to the Scottish quality meat producers when we had a conversation with them. If we get that right, it will be a good thing, but we will have to do it.

11:45

Together, we also have to say that, if our farmers are going to be asked to do the things that we know that they have to do, we cannot allow the import of products that do not meet the same standards. That is why we have strong objections to the proposed way in which, for example, the Australian deal is being put forward. You cannot ask our farmers to meet the standards that we will need, if we are going to get to net zero, unless you are prepared to say that those are the standards on which you are going to insist for the market as a whole.

Those are reserved matters, but the Scottish Government has a very important role to play in the way in which, together, we can help the Scottish agricultural industry to change sufficiently to make its contribution. It is different, and we all suffer—if I, as a small farmer, may say so—from the fact that we are urban societies and, very often, countryside issues are not understood. We must understand them if we are to get the changes that we need. It is about buildings and land use.

Jackie Dunbar: Earlier, the fact that using electricity is one of the ways to replace fossil fuels was touched on. Is the taxation regime for electricity generation and supply fair and appropriate? Should changes be made to ensure that there is a level playing field for low-carbon power?

Lord Deben: It is not sensible or fair for the whole of the green cost to be on the electricity bill and not on the gas bill. Quite a lot of the people who have only electricity are poorer than those who have a dual tariff. Therefore, it would not seem sensible to make more expensive the thing that you want people to use and less expensive the thing that you want people to stop using. That is not logical and, therefore, we think that it is necessary to change the way in which that is done. Frankly, it is not for the Climate Change Committee to say whether it would be better to do that through general taxation than in the bills. That is not a role that we properly have, but we do have a proper role in relation to fairness and sense, and it cannot be sensible to run it as it is.

That does not mean that I am not constantly saying how much we owe to the decision to allow money—£6.5 billion—to be spent to make it possible for us to have an offshore wind system. Whatever else might be said about the UK Government—I attacked it strongly earlier on its housing policy—the fact that it did that was really important. We now have a chance to make a change to the way in which the support mechanism works and, at the very least, to shift it on to the gas bill, rather than on to the electricity bill. For many people, that will not be a huge change, because they are paying both, but it will be a really necessary change for some people. The difference between the two will encourage people to change.

The Convener: Mark Ruskell has a brief supplementary question in that area.

Mark Ruskell: Thanks, convener. On that point, to what extent will the change to the Office of Gas and Electricity Markets' remit—particularly the incorporation of climate change into its remit—make a difference to the way that our whole energy system is regulated and investment is incentivised?

Lord Deben: I am much encouraged by the change and by its attitudes. We have had

meetings with Ofgem already and we are going to work much more closely with it. Its announcement today is a very good harbinger of what might happen in the future, so I am much encouraged.

Collette Stevenson: I thank our witnesses for their contributions. On Friday, I had the pleasure of visiting the TÜV SÜD facility in my constituency in East Kilbride. The facility has done the first ever transition from a gas domestic meter to a hydrogen one—staff there were calibrating it. It was impressive to see TÜV SÜD's work, and it was great to see something tangible in place. From a consumer's point of view, when will we start to see the roll-out of hydrogen meters and at what speed will it be carried out? Believe it or not, a householder recently raised that question at the citizens assembly. With the climate emergency, it is key for folk to see changes take effect.

Lord Deben: It is pleasing to hear about what you have seen. It is always better to see and feel something in a tangible way. The problem is that, although those meters will contribute to the total solution, the solution that they provide is partial, and we have many problems to overcome before they can be, as you say, rolled out. For example, as Keith Bell said, although, by volume, we could use significant amounts of hydrogen, the actual energy contribution is much less than that—the contribution might be important, but it is marginal. We cannot produce hydrogen in an entirely environmentally friendly way, and we have not yet overcome the cost problem.

I see our approach as that of using a whole series of mechanisms to find the best way forward, and there will be a number of ways forward, not just one. Part of the reason for doing what we are doing now is, as Keith said, to create some sort of market for hydrogen. We have to do that, because otherwise we will not produce the material anyway.

Therefore, I do not see a likelihood of a rapid movement to roll out, but I am sure that Keith will be able to put more bones on that answer.

Keith Bell: As we said, there is still an open question about the role of hydrogen in particular in the heating of buildings. The gas system as a whole provides an enormously valuable flexibility service. It is capable of storing a lot of energy in the pipe work—in linepack, as it is called—which helps to balance out the variations in demand for energy through the course of a day or a week, although not quite for the whole year. That flexibility is really useful.

We cannot get the same flexibility from the electricity system on its own, and other forms of storage are more expensive. To touch on your question, until we have resolved how much of the gas network will still be used for the transport of low-carbon hydrogen, it seems sensible—a least-regret option as far as possible—to have hydrogen-ready products available.

When a distressed customer needs to replace a gas boiler—say that their boiler has given up and winter is approaching, or it is winter—if a hydrogen-ready boiler is available on the market for at most a modest extra cost and hopefully no extra cost, that would provide flexibility. The customer could continue to use natural gas but, if the local gas supply changed to low-carbon hydrogen, they would not have to replace their boiler. That is an example of where the market can, I hope, develop, and where we can bootstrap the market to get products available at no extra cost wherever possible.

Collette Stevenson: I want to touch on the question of fuel and hydrogen fuel pumps. I had the opportunity to see a fuel pump and the receipt showing how much hydrogen it used. On consumer behaviour and expectation around the issue of electric cars versus hydrogen vehicles, I for instance could probably use my electric vehicle to get around the town to drop off my daughter and what not, and hydrogen vehicles could be used for longer trips. How do we develop the supply and demand for those vehicles and how do we work with private car producers to see how it will go?

Keith Bell: In relation to the battery in electric vehicles, a lot comes down to how to carry the energy around when the car, bus, lorry or whatever it is moves and how heavy the energy store that is being carried is. A battery's energy density per unit weight—the amount of energy that it can store—is not great, so we do not want to have that in a very heavy vehicle that needs to carry a lot more energy to get moving.

On the scale of a car, having a battery as a way of storing energy looks really good. The cost of batteries has come down dramatically in the past 10 years. We are now getting improved access, but it is not good enough, which is a big challenge for the infrastructure. A driver of an EV must be confident that they will have access to charging at a reasonable price where they need it, on whatever journey they make.

As Chris Stark said, a big part of transport policy is to reduce the need to get around in a car. An important part of the bigger picture is for people to have access to local services and be able to do a large part of their job from home.

Hydrogen seems important as a fuel for bigger vehicles, such as heavy goods vehicles, for shipping and as a feedstock for aircraft fuels. That involves manufacturing and energy-efficiency challenges.

We seem to have a mixed economy of using electricity directly for part of the demand for energy and of using low-carbon hydrogen in the future. As we said, that will be an indirect use of electricity when direct use of it does not seem to be—[*Inaudible*.]—effective.

The Convener: We have a couple of minutes left for brief questions.

Chris Stark mentioned policy cohesion. The Scottish Government has created a cross-portfolio remit for the cabinet secretary to focus on net zero. Given the importance of policy change and delivery in this parliamentary session, I would like to get views on how we in the committee can do things differently. What should our priorities be for taking a cross-portfolio view of net zero?

Chris Stark: I will answer that, as I raised the point. It is incredibly helpful to have a cabinet secretary who is responsible for net zero—that development is hugely welcome. It means that there will be a single ministerial point for the committee to talk to, but it is important to say that net zero will not be achieved by any one minister in one portfolio.

Mr Matheson will have to achieve something that has not been achieved so far—a genuinely cross-Government programme in which every bit of the Government, and certainly every bit that has any responsibility at all for what might be thought of as infrastructure or the built environment, has the idea of getting to net zero as quickly as possible as a central requirement in everything that it does. Every decision must be seen through that prism.

I encourage you as a new committee to think in the same expansive way about the changes that need to happen. We in the Climate Change Committee can be your friend on that; we are set up to think in an integrated way about the changes that need to happen in the Scottish economy in the next 25 years. We can provide the critical evidence that the committee can use to challenge ministers on what is happening.

My main point is that the committee should please not imagine that it is just Michael Matheson who needs to be brought before you. I encourage you to hear from ministers with other portfolios, too. That did not happen successfully in the previous session or the one before it. We will fail on the journey to net zero if we do not have a critical appraisal of what is happening across the Government. If the committee does not do that, it will not happen.

If we can, let us—the Climate Change Committee and this committee—work together on producing policies and putting pressure on ministers to do that in this parliamentary session. It must be this parliamentary session, or we will not make that 2030 date that I talked about and, by extension, we will miss the 2045 date that Scotland is now signed up to for net zero. This is the critical session of Parliament.

12:00

The Convener: Mark Ruskell has a brief question.

Mark Ruskell: Given what you have just said, Chris, with regard to your analysis, what are the next points that will come to the committee? Earlier, you mentioned the Green-SNP policy programme. Will you do an analysis of that? Will you provide the committee with analyses at other points in the next year, so that we can critically examine the work of Government?

Chris Stark: Yes, I will. The two important things to look out for over the next few months relate to COP26. We are planning a new CCC Scotland progress report. We will publish that after the COP—partly because we want to accommodate what happens in the COP and partly because that will be a better time for us to produce that analysis. In that, we will, I think, make a pretty hard-edged appraisal of where the Scottish Government stands on its policy programme for net zero. We will also be looking at adaptation over the course of the next few months, which we have not had time to talk about today. That is the main meat for your committee over the next few months. We will produce that by the end of the year.

We will also be producing an appraisal of the UK's net zero plan, which will be very relevant to the discussions that you will have in your committee. There are plans afoot in Whitehall to produce a new net zero strategy in the weeks before COP26. That is the right time for ministers in Westminster to produce that new strategy, and I hope that it will be supported fully by the UK Treasury in a set of fiscal decisions that will be made by the chancellor at around the same time in the spending review and the budget.

Fingers crossed, we should have—finally—a comprehensive plan in Scotland and a comprehensive plan at UK level against which to appraise progress. We will run the numbers on those. We have not been able to do that; to date, we have had to make informed guesses on that. We should then have numbers, not just from Scottish ministers but from UK ministers. That will allow us to do an appraisal of how well on track we actually are.

Finally on that, it is my ambition, over the next nine months, to turn the analysis that we have in place already of the technical pathways that need to be achieved across the UK into something much more real world, looking at not just

greenhouse gas emissions, which is a slightly ethereal concept, but, crucially, what real-world changes need to happen today for us to be clear that we are on track to meet the targets that have been set at Holyrood and Westminster. How many electric cars will be seen on the road? How many heat pump installations will there be? How many installations of energy efficiency improvements in buildings will there be? Will we see the progress that we need in industry, farming and agriculture and in changing land use? If we can, I want to turn to producing real-world metrics of progress that will allow us to eyeball more accurately whether we are actually on track to meet the targets because, ultimately, that is what is critical now—not setting new targets but delivering on the ones that we have.

The Convener: The final question is from Fiona Hyslop.

Fiona Hyslop: I was struck by an earlier comment by Chris Stark. If the world can mobilise to carry out fiscal transfers and, I assume, quantitative easing for the Covid emergency, why can it not do something similar in relation to the climate emergency? What is your view of the prospect of success at COP26? What is your benchmark for success, bearing in mind the question of why, if the world can move and has moved so much on the Covid emergency, it could not do it on the climate emergency?

Lord Deben: My benchmark for success is that the world accepts a much tougher programme for each country and shows real evidence that it intends to do what it says it is going to do. We will not get that, but I think that we will get much nearer to it than some fear. My other benchmark for success is that the world recognises clearly that it is a global issue and that, therefore, it must be solved by a global solution. That means that we rich countries that have benefited from pollution and caused the climate change that we are fighting must step up and spend the money that is necessary to solve the problem, which—if we do not do that—will destroy us as well as the poorer countries. I shall be looking very closely at the commitments from the rich countries and at their determination to prove that those commitments are real.

The last thing that one will be looking for—I believe that we can see it—will be a reflection among ministers of what is obviously happening in the world, which is a total change in the way in which people are looking at the issue. We really are now in a world in which the public are ready to be led, ready to be informed and ready to make changes. If I have a deep-seated worry, it is that politicians will not rise to the occasion, because now is the moment for leadership, and we live in a world in which that is a very scarce commodity. I am looking for leadership.

The Convener: That brings us to the end of the evidence session, and it is very appropriate that that was a challenge laid down by Lord Deben. It is a challenge that we will try our best to meet in the months and years ahead.

I thank the panel members for joining the committee. Thank you for your valuable insights, which have given us a tremendous amount of material and areas on which to focus. I am sure that we will hear from you in the weeks and months ahead. I wish you all the best in your work ahead.

We will now move into private session.

12:06

Meeting continued in private until 12:30.

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