OFFICIAL REPORT
AITHISG OIFIGEIL

Economy and Fair Work Committee

Wednesday 18 September 2024

Session 6

The Scottish Parliament
Pàrlamaid na h-Alba

Wednesday 18 September 2024

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ECONOMY AND FAIR WORK COMMITTEE
23rd Meeting 2024, Session 6

CONVENER

*Claire Baker (Mid Scotland and Fife) (Lab)

DEPUTY CONVENER

*Michelle Thomson (Falkirk East) (SNP)

COMMITTEE MEMBERS

*Willie Coffey (Kilmarnock and Irvine Valley) (SNP)
*Murdo Fraser (Mid Scotland and Fife) (Con)
*Gordon MacDonald (Edinburgh Pentlands) (SNP)
*Lorna Slater (Lothian) (Green)
*Colin Smyth (South Scotland) (Lab)
*Kevin Stewart (Aberdeen Central) (SNP)
*Brian Whittle (South Scotland) (Con)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Professor Keith Bell (Climate Change Committee)
Professor Graeme Roy (Scottish Fiscal Commission)

CLERK TO THE COMMITTEE

Anne Peat

LOCATION

The Sir Alexander Fleming Room (CR3)

Scottish Parliament

Economy and Fair Work Committee

Wednesday 18 September 2024

[The Convener opened the meeting at 09:30]

Decision on Taking Business in Private

The Convener (Claire Baker): Good morning, and welcome to the 23rd meeting in 2024 of the Economy and Fair Work Committee. Our first item of business is a decision on whether to take items 3 and 4 in private. Are members content to take those items in private?

Members *indicated agreement.*

Just Transition

09:31

The Convener: Our next item of business is a joint evidence session with the Scottish Fiscal Commission and the United Kingdom Climate Change Committee on financing a just transition. The session comes ahead of an anticipated chamber debate on the committee's two just transition inquiry reports. I welcome Professor Keith Bell, mitigation committee member from the UK Climate Change Committee, and Professor Graeme Roy, chair of the Scottish Fiscal Commission.

As I mentioned, the committee has undertaken two inquiries—one on Grangemouth and one on the north-east and Moray—reports on which have recently been published. There has been confirmation of the plan to close the oil refinery in Grangemouth next year. I ask the witnesses to give us an overview of how we finance a just transition. During the inquiries, we heard evidence about the significant resources that will be needed to achieve the transition. Given the scale of the challenge, there are fairly modest commitments from the Scottish and UK Governments at this point in time. Professor Bell, can you give us an idea of the levels of investment that are required and where we are at the moment on being able to make that investment?

Professor Keith Bell (Climate Change Committee): Clearly, the required investment is significant. We are talking about billions of pounds per year, albeit that the investment will be spread across different sectors. Depending on the sector, the split in the numbers for the UK as a whole and Scotland will be different. The Climate Change Committee's most recent analysis was done as part of our sixth carbon budget advice, which is a few years old now. However, we are redoing that analysis so, in the early part of next year, we will have new numbers to share with you, among others. Obviously, a big question—I am sure that Graeme Roy will speak about this—is about how much of that investment will be public and how much will be private.

It is worth recalling that investment in renewing our capital stock is essential anyway, whether it is industrial equipment, vehicles, home heating systems or whatever. In relation to net zero and the transition to a low-carbon economy, the next time that any of those investments are made, we depend on a low-carbon option being chosen instead of a high-carbon one. At the moment, with many of the technologies—the physical kit—the higher-carbon option looks cheaper. However, over the medium to long term, the cost difference

is actually not so significant, when we take into account operating costs.

The obvious example is anything that uses energy, such as vehicles or home heating systems. If we get the pricing of electricity right, electric vehicles should, over the medium to long term, be cheaper than combustion engine ones, even when we take into account the capital cost at the beginning, and heat pumps should be cheaper. However, there are a few ifs along the road. Of course, there is the issue about who funds the capital investment at the beginning.

The main point that I want to make is that we need to consider what the increment is over the investment that we should be making anyway, as well as the benefits and the opportunity to make things better when we make investments.

An obvious example relates to homes. Too many of our homes in Scotland are not well enough heated. They are cold and damp. Changing a heating system, or improving insulation, is disruptive, but heating systems have to be renewed at some point anyway. Although it is relatively easy to replace one gas boiler with another, we should take the opportunity to upgrade, both by moving to a lower-carbon heating system and by improving heating performance. When it comes to your question, that requires investment. The question is: who will pay for it? Certain parts of the population are able to pay, but financing is a real challenge for others.

That was about demand. On the supply side—for example, in relation to low-carbon sources of energy—the industry has proved that it is ready to invest. It is ready and able to raise the finance. It will recover its costs over time, through bills, because, now, new sources of energy for low-carbon electricity generation are cheaper than high-carbon sources. As I said, if we get the market structures right, we will see benefits over the medium to long term, so the cost recovery through bills should be affordable. According to analysis that we have looked at about the system costs of electricity in the coming decade or two, the average cost—not just for production but for large parts of the network, balancing and so on—would be lower than the wholesale electricity cost last year. There is a timing issue about the financing and then cost recovery.

I am sorry—that was a long answer to what was supposed to be a brief introductory question.

The Convener: It has introduced a lot of issues for us to pick up on throughout the morning.

I have a similar question for Professor Roy. In our two inquiries, finance has been a big issue. There is pressure on public spending this year and, it is anticipated, over the next few years. However, the plan that we are looking at extends over 10 or 15 years. A lot of the targets that have been referred to—on electric car usage and heat pumps, for example—are over the longer term. What are your reflections on the immediate challenges that we face and, given that we anticipate that the difficult situation that we are in at the moment will not last for ever, how do we provide the finance to achieve our longer-term targets?

Professor Graeme Roy (Scottish Fiscal Commission): Thanks very much for the opportunity to speak with you.

I will say a few things in response to your question. Our “Fiscal Sustainability Perspectives: Climate Change” report was the first dipping of our toe in the water of thinking about issues such as how the public sector will finance the transition that we need to make in order to address climate change.

A couple of things are interesting from a fiscal and Scottish budgetary perspective, and they build on what Professor Bell has spoken about. First, I cannot think of a policy area in which the interdependencies and complexities relating to devolved and reserved areas are as significant as they are with net zero. That matters when it comes to the funding implications—the investments that the Scottish Government will need to make in the transition to net zero and the commitments that are needed in public sector budgets. Some of that will be determined through the scale and form of the funding that flows from Westminster, and, on your point about timing, some of it will depend on when that investment flows through. A significant amount of the Scottish Government’s budget is still dependent on decisions that are taken at Westminster. That is particularly true of the capital budget. We might come back to that and talk about what is projected to happen to the capital budget over the next five years.

The second area relates to taxation and the Scottish Government’s devolved tax powers. In that regard, high-value jobs are crucial for income tax. In particular, when it comes to the transition away from the relatively highly paid jobs that are tied to the oil and gas sector and its supply chain, those people need to transition to high-value jobs so that they can continue to pay high levels of income tax for the Scottish budget.

Another issue relates to commitments to prioritise certain spending. In recent weeks, there have been real challenges with regard to the Scottish Government’s reprofiling of expenditure and prioritisation of different elements of spending. When you face such difficult short-term challenges, how do you continue to make and prioritise investments in tackling climate change and reaching net zero?

On funding, there are therefore big questions on the flow of funding from the UK Government, on taxation and on spending commitments.

My final comment, to wrap all that up, is that one of the conclusions in our report in March was that there is still a lot of uncertainty about, and a lack of clear information on, budget commitments to tackle climate change and the transition to net zero. There are opportunities, particularly through the climate change plan and the adaptation plan but also through the regular Scottish budget, for the Government to be much clearer in setting out how its different commitments help to support that transition. I am sure that we will be able to unpack a lot of that.

The Convener: We have seen some of the challenges. In the north-east and Moray, the Government committed £500 million over 10 years, but it has reduced that because of the situation with financial transactions. When the announcement was originally made, you would have thought that it would be £50 million a year, but we are at only £75 million at this point. That might be an example of the practical difficulties in delivering on a commitment that has been made.

Professor Roy: Exactly. In our fiscal sustainability report, we did some calculations on the potential additional investment for mitigation that might be needed in the devolved public sector. Albeit that we used lots of assumptions, we worked out that, on average, about £1 billion of additional spending a year would be needed over the next few decades. The current context is that the capital budget is projected to fall by 20 per cent in real terms over the next five years. There are two pressures: as Professor Bell said, additional commitments need to be made to spend capital money on low-carbon options, and, at the same time, we face potential cuts to the capital budget. That makes those decisions all the more difficult.

The Convener: Thank you. I will bring in Michelle Thomson.

Michelle Thomson (Falkirk East) (SNP): Good morning, everybody. I am so sorry that I cannot be with you in person.

Professor Roy, I will carry on with that theme and dig a little more into your—[*Inaudible*.]

The Convener: We have a problem with Michelle Thomson's connectivity. I will give it another few seconds.

I will invite Murdo Fraser to ask his questions and come back to Michelle Thomson.

Murdo Fraser (Mid Scotland and Fife) (Con): Good morning, professors. I will follow up on the convener's line of questioning about who pays. Professor Bell, I was interested in something that you said about transitioning from gas boilers to heat pumps. I will give a small illustration.

I visited a new housing development in my region a couple of months ago. They were nice new-build houses, with a very high specification, and were heavily insulated. I had a conversation with a house builder about the heating system. All the houses are having gas boilers installed. I asked why the builders were not putting in heat pumps, and the answer was that the customers do not want them, because there is an additional cost—£8,000 per property, I think they said—and, in that market, the customers are not interested in paying that. I would like your perspective on that.

I will also put my broader question. It seems to me that, on the issue of net zero, it is easy for politicians such as us to set targets for 10, 20 or 30 years in the distance, then pat ourselves on the back and say how well we have done. The practicality is in trying to implement measures such as heat pumps when the public says, "Wait a minute, we are not prepared to pay for that." The question of who pays therefore becomes absolutely crucial. Professor Roy talked about the situation with the public finances. The Government will struggle to pay. What is the scope or opportunity for private finance to come in, and is enough being done in the financial markets to bring in models, opportunities and products that can help to fund the just transition?

Professor Bell: That is a really good question. I will pick up the last bit first, which was about the sorts of products that are in the financial sector. There was some really interesting stuff in the heat in buildings bill that was being consulted on for this session of the Parliament, especially about what responsibilities were placed at the point of sale of homes.

I suppose that the expectation would be that mortgages that could help to fund upgrades would become available. That would be an example of regulation driving the development of the market and not leaving things entirely to the market, so there is real potential there. That would apply at the point of resale.

09:45

You gave the example of new build. Again, there is the potential for regulation to play a really important part. Builders might be saying that their customers do not want these heating systems, so it is easy for them to say that they have just done the obvious thing. It turns out that it is also easy for them to do that work, because they can find people who know how to do it. A cost of £8,000 sounds a bit like the upper limit, if we are talking about new build and it is all designed in the right way. I am not sure that the heat pump itself and

the associated hot water cylinder and whatever else are that expensive, but there is a challenge with regard to the workforce and finding the people to do the installation.

The evidence from things such as climate assemblies, which have happened in Scotland and through the UK Parliament, is that you can explain to people how these things work, the fact that they work and the fact that their running costs will be lower over the medium to long term—that links back to what I said about electricity bills versus gas bills—if we get the balance and the market design right. It depends a bit on the size of your home, how much energy you are using and so on, but the net cost is pretty much zero and might even mean a saving.

As you implied, that does not get around the up-front financing issue. I would like to think that, if there is a growing market for such measures, building societies and so on will respond to that, given the evidence that they have responded in ways in the past . However, it takes something to get it moving and bootstrap the whole process. Therefore, there is a piece of work to be done on public communication about the fact that these things work—they work in other countries—and that this is not new technology. We have also got to realise the potential for lower bills. Everything will get moving from there.

The burden of paying for all that does not need to fall on taxpayers, although there is probably still a role for taxpayers. That goes back to what Graeme Roy was saying about priorities and the choices that are made with regard to how much public money is made available for low-cost loans or grants for certain sectors of the population, for example.

Professor Roy: The point about how you translate targets into action is a fair one. One of our recommendations in our climate change work—but also in our most recent data needs request—is that the Government should be much clearer about its actual spend on the transition to net zero, in terms of not only climate change plans and documents but the budget. The budget document contains relatively broad-brush assessments of whether a budget line is contributing positively or negatively to climate change. There is nothing that says that the Government is spending X amount of money every year on X action that explicitly targets net zero. That information could be much more transparent, and then you would be able to take a step back, look at the Government's targets and ambitions and see whether the decisions that are set out in the budget stack up to meeting those targets and ambitions.

A lot more could be done simply by improving transparency, which you could then track. There are also the usual issues involving the question "That's what you might say in a budget document, but do you actually spend it?" and the ability to track outturn. By improving transparency, you would be able to look and say, "We know that you are not making the progress you said you would, because we can see that you're not spending enough"—or, crucially, the UK Government might not be spending enough in those areas.

On the point about financing opportunities, there is a big debate at the UK level about the fiscal rules and the potential constraints that those are putting on levels of investment. There is also the question of whether it makes sense to think about investing in measures to deal with existential threats, such as climate change, as normal day-to-day investment, or whether you need to think about that in a different way. Therefore, there are big questions that will need to be resolved at the UK level, which will then have implications for funding here in Scotland.

On the point about leverage, how do you make sure that you leverage public sector spend in a way that is most effective in getting in private investment? Some of that is about regulation and some of it is about looking at innovative finance opportunities and funding elements.

There is also a basic question about prioritisation, and that comes back to my point about transparency. Ultimately, it is about making decisions but, if you are committed to getting to net zero in the timescales that are being set out, you have to be really clear that you are prioritising some things over others. In the current fiscal climate, that will require difficult choices.

My final comment is on Murdo Fraser's point about how we engage consumers and the general public. I do not think that we do enough to illustrate the opportunity cost or the alternative scenario. On fiscal sustainability, the Office for Budget Responsibility has been clear that unmitigated climate change would be disastrous for public finances and that the resulting damage could cause debt to rise to more than 300 per cent of gross domestic product.

Reframing the conversation is really important, particularly when we talk about necessary investments. If you do not make those investments, that does not mean that everything will be fine. Adaptation to the damage from climate change will bring significant costs.

Murdo Fraser: I have a couple of follow-up questions. On that last point, it is really interesting to look at where the public are. I hear this pushback all the time—people say that, even if we get to net zero tomorrow, if the rest of the world does not, it will make no or little difference. The challenges that we face, whether in Scotland or

the UK, are exactly the same challenges that other western economies face. Everybody is on the same trajectory as we are on, everybody is pushing back on targets and everybody is going slower because of the fiscal and economic challenges. Trying to win the public over against that backdrop is much more challenging, is it not?

Professor Roy, I will put to you the same question that I put to Professor Bell. Do you think that the financial products are there? Over the past couple of decades, lots of different schemes, such as the green deal, have come in. All those schemes seem to come and go, and people do not have any sense of what they are. If you came to me tomorrow and said, "Put in a heat pump and there will be some scheme to help you fund it", I would not know where to start, because those schemes change with such regularity. First, is there a need for certainty on what is on offer from the Government and the public sector? Secondly, are the financial products there?

Professor Roy: I get your first point about people challenging the proposals, and I understand why the pushback is there. The simplistic—although perhaps not reassuring—answer is that the Scottish Fiscal Commission looks at what the Parliament decides to do. If the Parliament decides that Scotland should meet its net zero obligations, not just because that is its role in wider global society, but because it is good for Scotland with regard to the long-term economic benefits, which we might come on to, and the right thing to do for Scotland's nature and environment, then our role in the Fiscal Commission is to take that as a given and assume that you will do that really difficult bit and we will look at how well—or not—the politicians and the Government are making the decisions.

On the point about innovative finance, I think that you are entirely right. There is an argument for certainty, and that has to be crucial. When people are making decisions, whether that be households, consumers or businesses, there must be certainty about what the products are and how long they will be available for. To be fair, part of the issue is that a lot of those markets are still quite new and emerging. If we go back through key points in history when there were changes in the industrial landscape and in the system, we see that we were in the same boat at those times, because things were in flux. There is an onus on trying to get through this period as quickly as possible so that we can get the innovative financing in place.

There are lessons from the past. We have effectively used financial transactions across the UK to make loans and investments in different aspects of public policy. There are good and bad experiences from private finance initiatives and public-private partnerships, and lessons have been learned from them. Again, those are situations where you can leverage in additional investments.

There is a debate about what we mean by the public sector's commitment and indebtedness to investments in climate change. We need to rethink that so that we make investments that are not only for the next five or 10 years—that is usually the timeline over which a public sector investment might want to see a pay-off—but for 50 or 100 years. We do not assess those appropriately.

Professor Bell: I will add to that. I made the point that the investment is not just investment for net zero but investment for improving or replacing your capital stock, such as a building, a vehicle or industrial equipment. Arguably, we have underinvested as an economy over a number of years and are seeing the fruits—or, rather, the poor harvest—of that.

On making the case for the investment, Graeme Roy makes a great point about the opportunity cost—what is the alternative? As you can imagine, I, too, hear comments such as "Other countries are not doing it. What about us?" You can look at that two ways. Other countries will definitely not do it—or it is much less likely that they will—if we do not do it. We have to show that we are committed. The evidence is that, for the size of our nation, we punch above our weight in international influence. The new Government in Westminster made some positive noises in that respect in the past few days. Let us see how that goes.

Other countries face similar issues with similar questions about what is right for future generations. Although there have been some good moves forward, in many respects, we still need to see delivery. One way of framing the discussion, which seems to cut through, is to ask what is right for your children. What sort of world will your kids face and what will we leave to them? That has a much stronger emotional impact than technocratic arguments about megatonnes of CO_2 emissions, apart from when we see the disastrous effects of climate change now—the extreme weather impacts, such as flooding or extreme heat. There is a big mission to make the connection in people's minds that one is a consequence of the other.

Graeme Roy makes a great point about whether the extra investment to deal with climate change mitigation and adaptation—the need to adapt is inevitable because climate change is already a fact—is a one-off or regular. Certainly, it is a one-off thing to address something that we have to address, but we also need to see it as investment for the future.

Murdo Fraser: I have one more follow-up question, which might be for Professor Roy.

Do you have a view on how effective the Scottish Government has been to date in drawing in private investment through city region growth deals, the Scottish National Investment Bank and the green investment pipeline, for example? Has that been successful overall or have there been weaknesses in the experience?

Professor Roy: We would not express an opinion on whether it was successful or otherwise, but the broad point that you make is that more innovative funding opportunities such as those are important.

The point about city deals is interesting, because the one thing that is unique about them is the collaboration between the UK Government and the Scottish Government. Some of the deals have been more successful than others.

That brings me back to my first point. I cannot think of another policy area where reserved and devolved matters and the fiscal powers of both Governments interact in the way that they do in this area. It is completely different from, for example, health, on which spending is devolved, so you get an amount of funding through the Barnett formula and are left to it. On every aspect of the investment that is needed in the transition to net zero, there are issues about the interactions between targets, those between spending responsibilities, those between legal responsibilities and those between tax powers. Approaches such as city deals and new ways of collaborating between the two Governments in investments are important.

Gordon MacDonald (Edinburgh Pentlands) (SNP): Professor Bell, I would like a bit of clarification on something that you said earlier. You said that, if we get the market design right, we should see lower electricity bills, but electricity is traded on the wholesale market. If you look a year ahead, you see that prices are 5 per cent higher than they currently are, and the UK Government has guaranteed Hinkley Point a price of £92.50 per megawatt hour, which is 12 per cent higher than the current spot price in the wholesale market. What do we need to do to change the market design, and how do we go about it to get lower bills?

10:00

Professor Bell: I am glad that you saved up the easy questions for me. [*Laughter.*] You are quite right to refer to the wholesale market. In the wholesale market, broadly speaking, the price is set by the marginal unit, which is gas and, as you know, gas is very expensive right now.

This is one of the opportunities, actually. As we increase our low-carbon electricity production, the periods of time when we will use gas as a marginal unit will become shorter. A colleague was doing some modelling on different scenarios just the other day that said that, even as soon as 2030, instead of gas setting the price 90 or 100 per cent of the time, that will reduce to, say, 50 per cent of the time, and we will benefit from the low-carbon stuff the rest of the time.

On Hinkley Point C, those are 2012 prices. If you look at today's prices, you will find that they are even more—what is the approved term for big numbers? Is it "eye-watering"? I look to my economist friend here to see whether that is right. [*Laughter.*] It costs a lot, but, in terms of the energy that it produces as part of the overall energy mix, it is a small part, and, with the way that the price is structured, that should not be the price setter for the wholesale market and the spot market as a whole. There is a price that needs to be paid for that, but the difference that it makes to the average is small. The good news for newer things such as wind farms, onshore and offshore, even with the slight price increase in the most recent auction, is that those prices are still clearing at much lower levels than gas—whatever that would be.

The market design is a lot about how the wholesale market is set up, the marginal prices, what is setting them and how they flow through to what the consumer ends up paying.

The other part is about legacy costs. There was a time—10, 15 or 20 years ago—when renewables were expensive. To get the renewables industry going in this country, and in other countries, policy makers made the decision to, in effect, subsidise it—albeit, in Scotland's case, by recovering those costs through bills rather than through taxation. Those legacy costs still exist.

I will stray a little bit into Professor Roy's territory, in terms of good and bad taxation. Normally, you tax the bad thing and reward the good thing. In that sense, fossil-fuelled electricity production is the bad thing and low carbon is the good thing, so why are we putting all those legacy costs on electricity bills rather than on gas bills? We have to approach that carefully, because there would be distributional impacts, and different segments of society would benefit or suffer to different extents. Although, to me, that looks like a sensible thing to do, we have to look at it as a package of measures to ensure that we do not have unwelcome consequences such as impacts on the fuel port, for example.

The Convener: We move to Michelle Thomson, followed by Willie Coffey.

Michelle Thomson: Good morning. I apologise again for not only not attending in person but my connection freezing when it did. If any of my questions have been covered, please just say so.

Professor Roy, I want to finish off the item on the existing fiscal framework. Earlier, you alluded to the fact that there is an anticipated 20 per cent cut in the Scottish Government's capital budget over the next five years. You also made the worthy point that, fundamentally, the fiscal framework is not set up to deal with the kind of challenge that we face. Have you managed to—or, indeed, been invited to—have any discussions with the UK Government so that it can understand that? You have clearly had discussions with the Scottish Government. If so, do you think that it is understood that the fiscal framework will simply not be fit for purpose when we have funding issues of such nature and scale?

Professor Roy: You are right about the capital budget. The current plan for the Scottish Government's capital budget is, in essence, for it to see a 20 per cent real-terms cut over the five-year period for which we did our forecasts back in December. That is largely from the previous UK Government's decision to, in essence, freeze capital budgets in cash terms.

Obviously, we await a UK budget in October, where the new Chancellor of the Exchequer will set out the UK Government's plans on capital investment. That will generate Barnett consequentials, positive or negative, which will feed through to the Scottish budget, which I guess comes to your point about the fiscal framework.

The most significant part of the Scottish budget is still the block grant from Westminster, and that is particularly true for capital. The Scottish Government's capital budget is largely determined by Barnett consequentials and the ability for the Scottish Government to borrow on top of that. The vast majority comes through the UK Government's capital consequentials.

There is a broader point, which is that anything that the UK Government decides to do on capital investment to support the transition to net zero—increases or decreases—has a knock-on effect for the Scottish budget. That makes it easier or harder for the Scottish Government to invest in capital elements. That gets back to my general point about the complexities of the process, interactions and interdependencies between the two Governments.

On engagement with the UK Government, as the committee knows, our main remit is to support the Scottish budget process and to engage with the Scottish Parliament. We speak to UK Government officials about our work, but we would not have a role in advocating for or recommending any changes to the fiscal framework. The fiscal framework is, ultimately, an intergovernmental relationship between the UK Government and the Scottish Government, so we would not go any further, to recommend any changes to that. That would be for the Government to decide.

Michelle Thomson: I apologise if this came up while I was offline, but I know that you made a comment about the critical dependency between Scotland and the rest of the UK and how, frankly, the UK cannot get to net zero without Scotland's contribution, particularly around land and peat.

Will you give some more flavour of that? If you have already done that, just let me know, and we can move on.

Professor Roy: I am grateful that you asked that question, because our report covers some of the interdependencies between Scottish and UK Government decision making and what they might mean for funding and financing.

The point about land use, and the investments that are needed in tree planting and restoring peatlands and the like, is interesting. We know that the UK needs Scotland to punch above its population share in order for the UK to meet its net zero targets, because of geography. Scotland has 30 per cent of UK land mass, about half of all trees and about 70 per cent of peatlands. The UK therefore needs Scotland to invest in reforming land use in order for the UK to meet its net zero obligations.

One of the interesting things about the way in which the fiscal framework works is that, to the extent that the UK makes investments in land use, Scotland will get a population share of that investment; however, clearly, that population share is less than the geographical share. That is a good example of where the funding arrangements potentially put an additional burden on to the Scottish budget, simply because of geography.

That is an area of our work that shows that there is a fiscal risk for the Scottish budget; if we want to make those investments for Scotland to get to net zero by 2045, and for the UK to get to net zero by 2050, there will be an additional fiscal risk for the Scottish Government.

Michelle Thomson: I imagine that the scale of that fiscal risk is such that the Government is unlikely to take it, given the lack of long-term projections over funding.

At the start of the meeting, the convener made a throwaway comment when she alluded to, I think, a relatively modest further commitment to Grangemouth in the light of the recent announcement. There are two sets of £10 million on the table, because the £80 million is for the

Falkirk growth deal—for the wider district. What are your thoughts about that £20 million fiscal contribution from both Governments, in the light of the predicted possible closure of the refinery? Is that enough money?

Professor Roy: We have not looked at that in any detail. We would not go into detail about the appropriateness or the level of that expenditure.

As a general comment, we are seeing, played out in real time, the challenges in the transition of moving away from the industries that have benefited Scotland significantly in the past—through providing jobs, investment and tax revenues—to considering what the future might be. That transition will be challenging to get right, and there is an important role for Government to manage it. However, we would not consider the detail or comment on whether that amount is sufficient or insufficient.

Michelle Thomson: My last wee comment is that, as you know, I was very complimentary about the commission's "Fiscal Sustainability Report", because I felt that discussions thus far—without factoring in the wider fiscal considerations—were doomed to failure because of a significant lack of funding. Obviously, there is public and private capital and so on. Do you think that I am right about that? As a result of your report, is there more understanding that how we get there cannot be totally fleshed out until we understand some of the opportunities and risks around the funding? Am I right?

Professor Roy: Given that you gave us a compliment for our report, I can return the compliment: I do think that you are right. One thing that we have tried to do more broadly through our fiscal sustainability work—not just on climate change, but on demographics—is make the point that many of the debates that we have are about funding next year, or more recently, about funding this year. The thinking is very short term, and it is focused on the here and now. However, issues such as demographic change, and crucially, climate change, are huge, and the potential risks to the budget are significant. We have never had a significant debate about that in the Parliament beyond those margins.

The work that the Finance and Public Administration Committee does to support our work and push for a debate in the chamber on fiscal sustainability is important. That debate will provide an important moment to allow the Parliament to lift its eyes up from the day-to-day budget and look at the longer-term issues.

On the level of understanding, since we published the report, I have been quite encouraged by the number of people who are interested in what we have done. The proof will come if we start to see improvements to things such as the climate change plan or budget documents that translate the investments that are being made into numbers that are transparent and allow us to assess whether progress is being made to meet the fiscal sustainability challenges.

The Convener: I will ask a couple of questions before I bring in Willie Coffey. Professor Bell, Professor Roy talked about the situation in Grangemouth being played out in real time, and you will know that, when the committee published its report, the news on the closure of the oil refinery, on the timescale that we are looking at now, was not in the public domain; we did not know that when we published the report.

We hope to have a debate in the chamber on the two reports. I think that everybody—or at least most people—accept that the oil refinery does not have a long-term future. It is the pace of the change that is difficult. Will you share your reflections on the current situation?

Professor Bell: You have hit the nail on the head in saying that the timing is a real challenge. Broadly speaking, in terms of the changes to where the jobs are, the number of jobs and the value of those jobs—Graeme Roy alluded to that earlier—there is obviously bad news but there is also good news. The good news is that, according to the CCC's analysis, and many others' analyses, the net zero transition will bring a net gain in the number of jobs. The challenge is exactly when they come relative to the ones that disappear, and where they come.

10:15

The third bit is perhaps the easier bit. They are all challenging, but the easier bit is about the transferability of skills, because a lot of the skills are directly transferable between, for example, the oil and gas sector and the renewable energy sector. Project managers, lawyers and environmental scientists are needed, and there is a lot of need for skills such as welding and civil engineering. Other things are less obvious and would need a bit of retraining or reskilling, but collectively we have the means.

I would not put this all down to Government. Industry also has a responsibility to step up and provide investment in training and education for college places, in-house training and support for people while they are retraining. We can do something about that. It is within our means.

The harder bits are about the timing and the locations, because they lead to uncertainty. There is uncertainty in the shorter term about wages. The oil and gas sector in general still pays pretty well, but there is wage inflation in the renewables sector. I see that in my day job at the University of

Strathclyde. Electrical engineers are getting much better salaries now; I do not know what percentage, but anecdotally they are getting significantly more than even a year ago. It might be attractive enough for people to say, "Now is the time for me to leave the oil and gas sector and take up a job with one of the renewables developers or electricity networks," but then there is the location question. The jobs are not necessarily all in the same places.

A report that I have seen suggests that there is good news on that on a Scotland-wide basis, but the report did not go into deeper spatial granularity about the north-east versus the central belt versus Dumfries and Galloway or wherever. There is a need for more information there. There is a pipeline of potential developments of wind farms off the Scottish coast, and we are starting to get new onshore wind farms. A lot of those jobs have the potential to be in and around Aberdeen, for example, but we do not yet know, which is the big challenge.

The Convener: You have raised some of the issues that members will be asking questions about but, before we leave financing, I have a final question on what the barriers to private finance might be. America had a big fund to encourage renewables and Europe launched a big fund, but the UK was seen as being a bit behind. Obviously, we have had a new Government for the past few months, so we are at a different stage and changes could be coming down the line, but what are the barriers to private finance? Do we have sufficient policy clarity? Do our Governments look like they are open for business? Are there enough financial levers to encourage private finance compared with other countries?

Professor Bell: That is a good question, and as you say, we expect the picture to change in the coming months—for example, there is lots of noise about GB energy, although I am not quite clear exactly what that will do yet.

The Convener: It is imminent. It has been for a while.

Professor Bell: "Imminent" is a good word, is it not? [*Interruption*.] Yes—"in due course" is another way of saying it. We can get the thesaurus out.

Will that make a big difference? I do not know. The amount of money that has been talked about is £8 billion, which in the scheme of things, in terms of the overall investment in renewable electricity generation, is not a huge number. On the other hand, you could argue that the most recent auction round for contracts for difference was a success. It cleared at decent levels, and it has a decent amount of capacity. Is it enough capacity relative to what we are trying to get to by 2030? Probably not, but I hope that we will have a chance to do it again next year and ramp that up.

The auctions have generally, apart from the previous one, been a success. Getting them big enough and getting that clear trajectory is probably one of the keys to longer-term confidence among developers. We would then want to see investment in supply chains and skills. Investment in skills development started too late and we are starting to wake up to the fact that there is a lack of people. There is a discussion to be had about the best way of addressing that.

On supply chains, we should look at who is placing the contracts, and whether the available contracts are large enough and last for long enough to encourage new projects that are equivalent to the Sumitomo cable facility. What is the next facility of its kind, whether that is for blades, electrical machines, or fabrication of cables? Another facility such as that potentially would be a big win for jobs, especially given what we have said about the transition from oil and gas into renewables.

The Convener: Professor Roy, do you want to add anything about what the barriers to private finance might be? Professor Bell spoke about interconnectedness between the UK Government and the Scottish Government and how addressing the challenges needs to be a shared venture. Is there more that we could do in Scotland to address the barriers to private finance, or are we waiting to see what the UK Government will do?

Professor Roy: Professor Bell made a point about investment across the UK in general. One reason why the UK economy has underperformed relative to its key competitors is that there has been a distinct lack of business investment. We are in the bottom quartile of Organisation for Economic Co-operation and Development countries on that. There is a much bigger structural question about the lack of investment in the UK economy, which is not just limited to net zero. That gets us into questions about business models, incentives, predictability and a variety of different things.

The point about work between the UK and Scottish Governments goes back to things such as the city deals that we were chatting about. There are potential opportunities with net zero, but there are also issues around innovation, investment, public and private partnerships, skills and regulations—all of which are spread across the responsibilities of both the UK and Scottish Governments. We should think about how the two Governments can work collaboratively to achieve the ambitions for net zero.

Michelle Thomson echoed a point that we have made that, ultimately, net zero is a shared

endeavour between the two Governments, because the UK needs Scotland to achieve net zero and to do that more quickly, and vice versa. The need for collaboration on net zero is much more significant and necessary than in any other area of devolved policy.

Willie Coffey (Kilmarnock and Irvine Valley) (SNP): I will drag us back to heat pumps for a wee moment. Murdo Fraser led some questions on heat pumps and why we are significantly off track, for which there are probably a number of reasons. When I talk to my constituents, they tell me that the quality of the information that they get is not enough and that they do not get assurance. The cost of heat pumps is a factor, because electricity is much more expensive than gas. There are a number of reasons why people are not making the switch, despite reasonable efforts to put grant money on the table.

What do you think will prompt a significant transition, particularly in private residential homes in Scotland, where persuading people to make the shift is still a huge problem? Could Scotland's councils play a role in that? I think that a House of Lords committee made that recommendation. I could not imagine quoting a House of Lords report in the Scottish Parliament, but it could be sensible for Scotland's councils to take a leading role, if they were able to do so. People might trust advice from their local authority, particularly if they were involved in the transition process. What key ingredients would ramp up the transition to heat pumps on the kind of scale that we really need if we are to get anywhere near the standards?

Professor Bell: There are lots of good questions there. It seems that some local authorities are trusted more than others but, in general, they have an important role to play. There is potential for them to be involved in co-ordination and support. For social housing, that is generally done through housing associations. That process is already under way and, as far as I understand, is already successful in many respects. Local energy planning, which involves giving the signalling, is a big thing.

Where local authorities lack ability is in delivering on such plans, either through statutory powers or through directing private investment by saying, "We're going to do a heat network here, in this zone." That is the right answer. Then they must ask what the commercial models around such an approach are. It involves a big up-front investment, but it promises to pay back. It is all about getting enough anchor load into it, for example. Local authorities seem to be the obvious party to co-ordinate some aspects, such as the idea of doing retrofitting programmes one street at a time.

That points to another factor that can help to bring about change. People are much more accepting of something new when they know someone who has already done it and can tell them all about their experiences. They might say, "Well, this was a bit tricky, but that actually worked and it's great." I am on that journey myself. I am trying to get stuff done and navigate the information that is out there, such as finding out who the trusted suppliers are.

An earlier question was about the availability of grant or loan schemes, how they change and access to information. We have to be much more consistent and much clearer about that. Home Energy Scotland needs to redesign the layout of its website and the information that is given there. I am keeping a long list of stuff that I will feed back to Scottish Government officials when I have finished my own journey. However, I have been encouraged by talking to friends or colleagues who have already made the change, who tell me, "Oh, yeah, this worked", or "Watch out for that". Such experiences will create a mushroom effect. Of course, it depends on everything being done in the right way, so that people have a positive tale to tell.

Earlier, we mentioned the relative prices of gas and electricity. As a very rough rule of thumb, the coefficient of performance of a heat pump—as in how much heat you can get out of it relative to the electrical energy that you put in—is around three. Their performance varies a bit, and some of the new ones are a bit better. However, that ratio is similar to what you could expect as payback from the ratio of electricity price to gas price, where you can start to see a net benefit rather than a net cost. That links back to our earlier discussion on electricity pricing.

All those aspects can be brought together. People will hear public examples of others saying, "Hey, this worked. I've done it." As the market grows and it becomes less difficult to find good suppliers and contractors to do the specification and installation work, I hope that it will become more of a virtuous circle.

Willie Coffey: That sounds really encouraging, but, given those impacts, do you still think that we will achieve the required ramping up? On the evidence base, for example, it would be crucial for people to be able to speak to others who have made the change and ask them how much it costs them per month. That is key for me, as is having bigger incentives. I am afraid that there would have to be greater incentives for people to make the switch so that it makes it worth their while to do so. Along with that evidence base, Professor Bell, that might be the key to changing attitudes. Would you agree?

Professor Bell: I certainly would tend to agree, yes. As I said earlier, there is also a discussion to be had about the number of people who are able to pay in comparison with those who are less able to do so. Again, I am navigating my own experience of that aspect. That is an important discussion, which links back to what Professor Roy mentioned about making choices. If there are political constraints on budgets, how should we allocate them and what should we prioritise? What is the rate at which we want to achieve such transitions?

That leads on to discussion of the carbon budgets that we will set in Scotland, which will have to be both ambitious and deliverable. By "ambitious", I mean that we have to play our part in the global transition. However, it will still have to be deliverable, and it will have to be backed up by concrete but firm action—although it would have to be low-carbon concrete. Setting a target but missing it will undermine our credibility and people's confidence in whether we are really serious about the transition in the first place. We have to be serious and we have to deliver.

Willie Coffey: When you complete your journey, could we get a video of you put on Home Energy Scotland's website, to tell everybody how successful you have been?

Professor Bell: If they want me to do it, I will be happy to. [*Laughter.*]

Willie Coffey: That is fantastic.

I have a more general question about the regional impact of the just transition. How do we watch out for the regional imbalance being negative in some parts of Scotland? Professor Bell, you talked about where in Scotland the jobs will be and how we will monitor that. Is there a risk that parts of Scotland could be left behind because of the journey that we are making? How do both Governments make adjustments to ensure that that does not happen and that everybody can share in the journey to net zero?

10:30

Professor Bell: I see a risk, but we also need greater clarity. A number of times, Professor Roy mentioned greater transparency and clarity in respect of budgets and what they will be spent on, but the point also applies to where we expect the jobs to be, what kinds of jobs we expect, in which areas we expect them and when we expect them. When we expect them depends on all sorts of other assumptions that you have to make.

For example, in respect of the energy sector, a body called Energy & Utility Skills Ltd—EU Skills—keeps telling me that it has all the data and that it knows how many people are needed in different kinds of roles, such as project managers, cable jointers or professional engineers. However, I have not seen that data published and, as a university academic who teaches electrical engineers, I would like to see it so that I have some idea. It would help me to tell prospective students and their families that there are huge numbers of jobs and there is great demand for what they will learn on a particular course or, alternatively, that we need to develop another course. It is a similar situation in further education colleges. We have to be able to see the data.

I have a degree of hope about the regional spread of jobs. Homes are everywhere, and they will need conversion work for net zero. Some of the work will be done once. You replace your radiator system once. A heat pump will last for 15 or 20 years and then you have a new one. There is one-hit work, so some of the work will not be continual.

We mentioned peatland restoration and afforestation. The CCC is hearing that there is a shortage of people and skills to deliver that work, and those projects are in rural areas where we normally worry about the lack of jobs.

There are also changes in the agricultural sector. In some places, the management of land is, to some extent, moving away from livestock. No one is completely eliminating it—I do not think that anyone serious is talking about that—but people are moving towards cultivation of the land, husbandry of hedgerows and trees and enhancing biodiversity. Those are public goods. We have been accustomed for decades to paying agricultural subsidies, so the budgets are already pretty substantial. Professor Roy will have a better idea of the numbers, but there is a large extent to which those budgets will be redirected and not necessarily an additional fiscal impact, and we will be able to maintain or possibly even grow the number of jobs.

The main point that I want to make is about the need for greater clarity on data. You can plan to support retraining and college places only if you know where the jobs will be. You also have to make some assumptions about the rate at which you want them to be delivered.

Willie Coffey: Is there no idea at the moment? Does the Government—and perhaps even the college network—not know what is required?

Professor Bell: That is what people tell me, certainly in the energy sector. Apparently, EU Skills passes its data on to Skills Development Scotland and, to some extent, works on behalf of the Scottish Government, but the numbers are not yet going further. I have been encouraging EU Skills to share its data. I expect that it is a similar story in other sectors.

Willie Coffey: Professor Roy, do you have anything to add to that?

Professor Roy: Everything that I have seen talks about the opportunities—the net positive benefits in jobs and employment in the long run—from the transition to net zero. EY did some work for the Scottish Government as part of its just transition work that ran different scenarios and, in many of those instances, the result was net positive, particularly in the long run.

The challenge, of course, is how you get there. We have to be up front and honest about the fact that there will be really difficult challenges. We are seeing that play out with Grangemouth at the moment. The question is how you transition and support people through that transition. There will be regional implications of that. We do not have to look far back in Scotland's history to see when we got that transition badly wrong. We are still living with the legacy effects of deindustrialisation, in particular in communities across west-central Scotland. We now have more jobs and higher average incomes than we did in the 1970s and 1980s, which is positive at aggregate level, but communities have been badly affected by the transition, and it certainly does not feel positive at local or regional level. There is a lot that we can learn from our relatively recent history in Scotland about how we support this transition.

There are opportunities. As Professor Bell said, the transition is not only about moving into low-carbon energy and the high-skilled jobs and value in that; there are also potential job opportunities across all regions of Scotland due to the housing stock and the investments that are needed to transform every aspect of our economic model. There are opportunities in parts of the economy that have been cooler in the past, in particular in rural and other areas where there have perhaps not been opportunities but where jobs will come through.

However, there is a challenge in how we transition into other areas and away from the very high-value jobs that exist in oil and gas, or that are tied to oil and gas, in particular in the north-east. We did some work on that as part of our recent fiscal update. Our interest is in income tax and the funding of the Scottish budget. It is interesting that, if we look back across even just the past 10 years, we see that the national average income tax in Scotland was about £3,000 less than the average income tax raised in the north-east of the country. In total, the north-east premium was worth about £700 million in additional income tax revenues. However, it has declined significantly over the past decade; that premium is now worth only about £350 million, which is because of the shake-out that we are seeing in oil and gas, with relative decline and relative slower growth.

The committee has probably heard us talk about the relative underperformance of Scottish tax revenues—relative to the rest of the UK—since devolution. A large part of that is about the weaker performance of employment and earnings in the north-east. The transition for the north-east is therefore not only about jobs and opportunities in that region; it also has significant fiscal implications for Scotland. If we get it right, there will be lots of high-value jobs, opportunities and new investment that can empower everything going forward, but that is not guaranteed. That is why the work around the transition will be absolutely fundamental.

The Convener: I would like to make some progress. I call Lorna Slater to be followed by Kevin Stewart.

Lorna Slater (Lothian) (Green): I have two questions, the second one of which has come up. I will get into them.

Professor Roy, I am delighted that you highlighted the cost of not taking action, because the question "Who is going to pay for it?" frustrates me continually. Who is going to pay for it, if we do not? That would be much worse.

Professor Bell, you brought to our attention the fact that some of the changes that we need to make will not cost the public purse. I agree: not all the transformative policies that we need necessarily need to cost the public purse money.

I worry that, in this larger debate, there is a sometimes a tone of, "Oh, it is just too expensive. We can't do it. Net zero is too expensive." However, policies such as removing subsidies from aviation, giving farmers the same amount of money for doing slightly different things, demanding management charges such as congestion charges and workplace parking levies, having a carbon land tax and putting in regulation on heat pumps and insulation to level the playing field do not cost the Government anything. However, we have such difficulty moving those things forward.

Do either of you—perhaps Professor Roy—have any comment on what kind of political consensus we need? What is the difficulty in moving forward with those policies, even though they do not actually cost the public purse anything?

Professor Roy: It is a good question. We would not comment, as the Scottish Fiscal Commission, about specific policies, but I can make some general comments.

You hit the nail on the head about the opportunity cost. So much of this conversation is framed as, "This is the additional investment that is needed", as though doing nothing has no fiscal cost. That is where the work of the Office for

Budget Responsibility is helpful in tracking the additional or increased costs in adaptation and damage, the shock of the disruption to businesses and households and the investment that they need to make in responding to flooding and damage. We saw that with storm Babet recently—the millions of pounds that had to be invested is a good example of that. Reframing the conversation is important.

Your broader second point starts to come back to the point about innovative finance. How do we spend the Government's money innovatively? The Government spends £50 billion a year, which is a lot of money. How do you think about not only what you are spending on but how to incentivise good behaviours, or disincentivise poor behaviours, with the money that you are spending? As you alluded to, it is about thinking about things such as grants to farmers, support for businesses and how you invest in your social housing budget or your housing budget more generally.

There is a lot in there that we have not explored too much, because quite a lot of the conversation has been about spending on net zero as though it is a spending portfolio. It is one thing that one bit of the Government does, rather than thinking of everything that the Government does as being much more supportive of transitioning to net zero.

The conversation that we have had in the UK, and certainly in the economics profession, has almost isolated climate change and net zero as a separate discipline or a separate thing that we should look at, rather than thinking about how to remove from our economy the carbon that has built our economy over the past 250 years. We need to do that quickly, and it is not just one sector—it is absolutely everything. If you start with that mindset and look at everything that the Government does through that lens, incentivising the right behaviours to push towards net zero has to be the way forward.

I come back to the point about transparency and how spend can be tracked in a Government budget. How can you scrutinise what the Government is doing to give you assurance that the spending that the Government has announced is actually spent? The point about outturn is important, but is it delivering on the transition to net zero or is it not? We do not have that information just now.

Lorna Slater: Does Professor Bell have any thoughts on that question?

Professor Bell: Professor Roy has put it all very well, but I will just emphasise the final point about delivery. We are supposed to be in a delivery phase right now for so many of these things. To monitor what we are doing in Scotland, we need the data to see what is happening, and we need that data to be prompt, well-maintained and transparent to give policymakers the chance to reflect on measures that might not be working or are not as effective as they were expected to be. The measures are put there in the first place; they should be accompanied by detailed analysis to say what they are expected to deliver so that we can monitor whether they do that. With the best will in the world, not everything will be designed perfectly and not everything will turn out as we expect, so we should give the chance for feedback and updating of policy as a result.

Lorna Slater: My follow-on question is along those lines. I will pick up from where my colleague Michelle Thomson left off, around the question of how we get there. For me, the bigger question is about knowing where we are going. We know that we are not going to get to the 2030 targets, but we must get to 2045 and I do not think that there is political consensus about what 2045 will look like. To me, it is less about how we get there than about what we are trying to get to. Have we agreed on what transportation will look like in 2045? Do we know what all our buildings will look like? Do we know what our industry, our agriculture and our land use will look like? Can we agree on where we are trying to get to?

The question about clarity is relevant. I do not think that there has been clarity about which industries will have to contract. We hear a lot about growth, but not all industries can grow. Aviation cannot grow; other high-carbon industries cannot grow; they must contract. We need some clarity and honesty about saying that a transition means that some industries will contract and some industries will grow. Equally, some regions of Scotland might not grow, or they might contract, while other regions will grow.

I am interested in your commentary on both those points. How do we get a vision of where we are going? Do you feel that there is such a vision, or do we need to develop that? Is the information out there about what needs to grow and what needs to contract? If it is out there, how do we make sure that it is getting the clarity and presentation it needs?

Professor Bell: Giving some kind of sense of the ways of delivering net zero by 2045 in Scotland and 2050 for the UK as a whole is something that we do in the Climate Change Committee.

10:45

For all sectors of the economy, we model and analyse pathways all the way through to 2050. For example, at the moment, we are working on producing advice for the seventh carbon budget.

Although that relates to the period from 2038 to 2042, which is some years in the future, we are re-evaluating how we get to that period. Given that we are currently in the fourth carbon budget period and that there will be legislation in between, we are looking at whether that is still the right path and it is still deliverable. We are also looking at the economic consequences in terms of costs and benefits. We are redoing all of that and we will be publishing that in the first half of next year so that it is there for people to scrutinise. We publish a lot of detail. They are still scenarios—they are based on the best available information that we have.

Some things will change relative to the last time that we went through the exercise, which was for the sixth carbon budget. Some things have got cheaper, so the electrification of industry, for example, now looks like a better option. That might lead to less hydrogen in and around industrial sectors, although hydrogen will not be eliminated as it still has a part to play. We have a better idea of the costs of wind farms. Electric vehicle costs are coming down. We can therefore be bolder in relation to that area and say that, over the medium to long term, there is a net benefit in terms of the cost of moving around, if we assume that there will be the same number of vehicles.

There are choices to make—that is why scenarios are used. Those choices are not ours to make as the Climate Change Committee; they are yours to make as politicians—as policy makers. For example, what difference to emissions and to people's ability to get around will really be made by the extent to which you might want to subsidise public transport or the development of cycle routes? What happens with industrial transformation? A lot of that rests at the UK level rather than the Scottish level but, if we decarbonise industry, does that make a difference in the short term to the cost of products that are sold in international markets? Does that inform a need for things such as the carbon border adjustment mechanism? Can we align with the rest of Europe so that we do not suffer so much from being outside?

There is quite a lot of clarity. We always need to update things in light of new information. However, the translation of what that means into everyday choices for businesses, households, individuals and policy makers is an on-going challenge and mission to communicate. Some things need to be decided now, but we can afford to wait for better information on others. In between, there are things that we need to do in order to get better information. For example, when it comes to some of the technologies, what demonstration projects do we invest in, to keep the optionality? In making the investment, we need to be clear about when we need the information and what to do with the information when we get it. It is multifaceted, as I am sure you realise.

Lorna Slater: Professor Roy, does that feed through into the work that you do for the Scottish Government in terms of saying, "We know that these industries must contract and that these regions of Scotland will not be able to grow but that other regions will?" Does that feed through?

Professor Roy: I have not seen anything that provides the detail of projecting exact scenarios of what might happen to sectors and regions; as Professor Bell said about the delivery phase, it is about looking at what the long-term trajectory suggests that we need to track in order to meet the 2045 target, and where the investment opportunities are.

However, so much of what we see around the strategies for the economic aspects of the transition to net zero—for good reasons, such as the fear of being criticised or, potentially, undermining the arguments in favour of net zero—is about the positive aspects. The strategies do not get into the need for significant conversations about the sectors of our economy and the big industrial plants that we know will not be around in the future.

That will not happen just because of policy. A good example of that is oil and gas: irrespective of your view on oil and gas, the North Sea basin is in its twilight years. Whether you agree or disagree with the extraction of oil and gas, the transition is happening, and it will happen quickly over the next 10 to 15 years. There needs to be a hard, honest conversation about what we do about it. I go back to the point that I made to Willie Coffey: we do not have to look far back in Scotland's history for examples of when we got a transition badly wrong. We did not have a frank conversation that acknowledged that the industries would not be around in the next 10 to 15 years, nor did we look at how we supported the communities through the transition to move into the significant opportunities that we knew existed, but there were no guarantees that those individuals would get those opportunities.

Professor Bell: I have a quick addition to what Professor Roy has said about the oil and gas sector in the UK. The sector will shrink regardless and production will reduce, even if you were to grant new licences or if you tried to develop new fields. I will return to one of the first points that I made, about framing why we need investment for the future. We need to make the case for investment, whether that is because of net zero or because we should be investing anyway. We can build in the benefits of adapting to climate change and reducing greenhouse gas emissions while we are at it.

Kevin Stewart (Aberdeen Central) (SNP): I thank Professor Roy for highlighting the north-east premium, which we should all take note of. In doing that, we should also ensure that there is no regional contraction and that we get it right for every region in Scotland.

Elsewhere in the world, there has been major investment in the move to net zero. The green new deal in the United States has brought in $234 billion and there has been investment in Scotland in the north-east and Moray through the just transition fund. The Labour Party promised £28 billion a year for green initiatives, but that sum has contracted quite dramatically. That investment—if it is there—should drive change.

I want to concentrate on jobs and data. Professor Bell said that we require clarity on data. The Climate Change Committee published analysis that suggested that there is the potential to create between 135,000 and 725,000 jobs across the UK by 2030 in new low-carbon sectors. Can I ask about that data? What assumptions might you have made in reaching those figures and how accurate do you think that some of that data is?

Professor Bell: You can ask, but I was not involved in that particular piece of work, so I will have to get back to you offline about it

We always cite sources in our reports and we do not hide anything. We lean on other bits of work, to a large extent, and we scrutinise those to make a judgment about their credibility. There are a lot of reports that point to there being a net growth in the number of jobs because of the transition to low carbon. The fact that there are a lot of reports that come from generally credible parties, such as industry bodies and well-established consultancies, gives me some confidence that the general picture is true and that there will be a net growth in the number of such jobs. Part of your point is that you would like there to be greater clarity and detail—so would I.

As I said earlier, if we are going to be planning for retraining and reskilling, and if individuals are planning their own futures, they will want to have a good understanding of when and where the jobs are arriving. Some relocation is inevitable. It happens; not for everybody—some people have greater means to do that than others, and it depends on their stage of life, whether they have kids at school and so on—but it is not unusual. There was an influx of people into the Aberdeen region through the 1970s and 1980s, when the oil and gas industry was growing. Those people came from somewhere else. That has always been a factor of economic life, but we need to make it as easy for people as possible.

As I say, the more granular data that we have, the better the interventions that local, devolved and national Governments can make in terms of supporting the planning, as well as giving industry a better idea of where it is likely to be able to pick up the people with certain skills and where it cannot, and where it will be necessary to step in and invest.

Kevin Stewart: You talked about getting the planning right. Quite frankly, I would like to keep the people that Aberdeen and the north-east have gained over the piece. In relation to your report and to other discussions, there are obviously major concerns about the mismatch between the timing of the switching off of the old industries and the switching on of new industries. We all recognise that the oil and gas sector is in its twilight years. However, as Professor Roy said, it is not at an end and we will require oil and gas into the future. We should be endeavouring to make sure that we are also creating other jobs as oil and gas jobs diminish.

On planning and policy, do you think that the UK Government's recent announcements, such as the chancellor's statement, provide the planning and the policy to get this right, or is it a case that such announcements have been driven by current fiscal situations rather than getting it right for a just transition?

Professor Roy: I can comment on Scottish Government fiscal decisions. We do not tend to comment too much on UK Government decision making on that—

Kevin Stewart: But that decision making has an impact on the Scottish Government's fiscal position, Professor Roy.

Professor Roy: Exactly. That was going to be my point. We will wait until 30 October for the UK Government's decisions on what it is spending and what the Barnett consequentials will be. That will come from the new UK Government's assessment of the fiscal position of the UK's public finances, which is your point. Part of that determines what the new UK Government, now that it is in power, sees as the structural challenges and opportunities in the fiscal position that it has inherited.

Secondly, it comes back to the earlier point about the fiscal rules that the UK Government has set. That sounds quite geeky and technical, but it is fundamental for determining the fiscal headroom that the UK Government has in relation to what it is able to spend. As we said in the discussion with Michelle Thomson, that then comes crashing into the Scottish budget, particularly through the capital budget and decisions on capital, because so much of the Scottish budget is dependent on that. That is where it becomes really important.

On your first point about data on the labour market, there is a real challenge around getting really robust data on the net zero economy and on the oil and gas economy, because so many people who work in the sector live in other parts of the UK and overseas. Tracking job numbers, even in the oil and gas industry, is not as easy as it is in other sectors. There is also a big question about what we mean by a low-carbon job or a green job. In Aberdeen, for example, long-term success will be people who have the skills and are working in the oil and gas sector transitioning into a sector that is part of the low-carbon economy or the green economy.

11:00

On your broader point about Aberdeen, it has a strong economy that does not depend solely on oil and gas. Part of any success for Scotland, including Aberdeen, will involve continuing to grow the broader economy, as well as taking advantage of not just the first-mover advantage that Aberdeen has in oil and gas but the fact that it is the most export-focused region in our country and one of the most skilled. It is also one of the most successful areas for securing investment in innovative and inventive parts of the economy. We must ask how we get the skills base that will enable us to take advantage of the new sectors, not just in low carbon but across the economy, which will be vital to the future.

Kevin Stewart: Thank you, Professor Roy. You are selling Aberdeen very well—better than some of the folk from the area, who often take a much more pessimistic line.

Professor Bell, I want to concentrate on planning, policy and data, because it is extremely important that we get those aspects right. Earlier, we discussed the transferability of skills. Aberdeen and the north-east are awash with immensely skilled people. However, you said that skills development in the area has come too late. How do we change that at UK level, as far as investment is concerned? How can we also get it right at Scotland level, so that we manage the just transition and do not put folk from the oil and gas industry, and others, on the scrap heap, as happened to the miners a number of years back?

Professor Bell: There is a lack of people, currently. I often talk to people in the renewables and electricity network sectors and that is what they are telling me. They are really struggling to hire people into all sorts of roles, especially technician and engineering ones. In that sense, their training and development are lagging.

There are questions around that. Even if we put on courses, are they attractive enough? Do people understand that there are good careers to be had? We might offer places at my university, but will people apply to study there? There is a bigger piece of work to do than simply making the training places available, although that is a big part of it. I do not think that that is solely the responsibility of either the industry or the Government. For many years, the Government has had a big part to play in education and training, and I think that it will continue to do so.

The difficulty in hiring people is evidenced by the fact that, as I mentioned earlier, there is wage inflation in some of those sectors. Are the wages attractive enough, and are the jobs obvious enough—do people know about them?—to enable people to move out of their existing jobs and into those new ones? Is retraining required? If so, how should that be funded, especially if, for example, someone needs to attend a course for a year and they are not earning in the meantime? It is not only the industry that needs to step up on that but the Government. Perhaps that can be done through shared investment. Going back to the point about planning and clarity, how much are we talking about?

As we have touched on many times in this discussion, it is difficult to talk about extra spending by the Government when there are already severe constraints on it.

Kevin Stewart: Both of you have highlighted in your answers to earlier questions that attracting the right people requires investment by not only the Government but the private sector. If we do not have such planning, and do not get it absolutely right, will not the private sector be much more averse to making such investments?

Professor Bell: Absolutely, yes. Perhaps we should try to be clearer about what we mean by planning the extent to which what are largely private investments are somehow directed or centralised. We have to be a bit careful about that.

In the energy sector, there is a move towards more centralised strategic planning. The UK Government has set that out in relation to what the new national energy system operator is supposed to be doing. It is really important to see what it says with regard to setting the long-term direction for generation development and networks.

However, at the other end of the scale—things such as heat pumps and electric vehicles, for example—the Government can use other levers to provide confidence and give clear signalling, so that might be a key aspect, too. The signalling and planning also need to take into account the various scenarios and assumptions. If there is a strong lead from Government, there can be greater confidence. If you put the right signals in place that those scenarios and assumptions will

be delivered, I am confident that the private sector will invest.

Kevin Stewart: The point about clear signalling is important. Is it sometimes difficult for clear signalling to be given, because the views of the Scottish and UK Governments often diverge? Is it often difficult to give clear signalling when, in some areas, Government has not made the moves that would attract investment? Let us take the example of hydrogen production. The lack of movement from the UK Government on regulation of the storage and transportation of hydrogen is obviously an impediment to investment. That clear signalling that you talk about is not there. How do we improve that?

Professor Bell: The Climate Change Committee is on record as asking for clarity on the development of a hydrogen economy, certainly with regard to making low-regret decisions, for example. For instance, what is the minimum need for low-carbon hydrogen? You could look at many scenarios with regard to how big it might get, but there seems to be growing consensus that at least some hydrogen production is needed. The UK Government is working on business models to get that moving, so all that we can do is encourage it to move faster on that and to make some of those signals.

Kevin Stewart: Professor Roy, given divergence and differences between the two Governments—for example, you highlighted the differences between investment in peatland and in forestry—how do we ensure that there is clear signalling from both of them? Does the UK Government have to allow flexibility in the fiscal framework to ensure that we get a bigger bang for our buck in the move to net zero, UK-wide, by investing in Scotland, so that we can achieve some of the things that the rest of the UK cannot?

Professor Roy: I return to my answer to Michelle Thomson, which is to say that, ultimately, the fiscal framework is for the two Governments to sort out, and we sit on the sidelines and then comment on the basis of how that operates. However—

Kevin Stewart: There is, of course, another alternative, but you will not be able to comment on that either.

Professor Roy: Yes, we do not comment on that either. However, I would make a general comment that, if you take a step back, you can see that, given our devolution settlement, there are many complexities in terms of interactions between the two Governments when it comes to the decision making that is needed on net zero. Hydrogen, which you mentioned, is a really good example of that. You can also see that with all aspects of surface transport, economic development, innovation policy and with, for example, all the work on investment zones in Aberdeen and the Aberdeen city region deal. The complexities and interactions there are really crucial.

As an outsider looking at that, there is a question about how co-ordinated and planned that is. For example, is it a green port or an investment zone? How do you take a step back and think about what you need to work collaboratively on for the long term? That gets us into big questions about the effectiveness of intergovernmental relations more broadly. The only comment that I would make is that that could probably be improved.

Kevin Stewart: Thank you very much, Professor Roy, I will not take the opportunity, on the 10th anniversary of the independence referendum, to talk more about the other pathway.

Brian Whittle (South Scotland) (Con): I want to dig a bit more into the preparedness of the Scottish labour market for the potential opportunities. I do not think that there is any doubt that every person in this room, from every party, wants to get to the same place—we just have different ways of getting there. My frustration lies with the fact that we know that there is a shortage of engineers across all sectors and that there is a shortage of tradespeople. With regard to the data, when the Scottish Government set the target of retrofitting a million homes with heat pumps by 2030, the construction industry said that it was 23,500 tradespeople short and that we would need them by 2028 in order to hit the 2030 target.

My point relates to the educational environment and there being no route map when the Government sets such targets. We know that we need 23,500 tradespeople and a certain number of engineers, but there is no process for setting out how that will be delivered in our FE sector, our education sector generally and in our retraining processes.

Professor Bell: Yes, absolutely, we should be providing that sort of information. Government would seem to be the obvious party to gather that information from different sources and to articulate what that is likely to mean for training places.

However, as I mentioned, a broader discussion is needed about the funding of those places, because that should not depend solely on Government. Industry needs to step up—and it does step up, incidentally. Industry funds a lot of stuff, and parts of industry invest a lot in in-house training. Other parts of industry do not invest but just sit there and poach people who have been trained by somebody else, which is a disincentive to investing in in-house training, colleges, courses and so on.

I mentioned earlier that we have to communicate the opportunities to people who might want to sign up to these courses. We have to tell them that this is an exciting field to be in. I do not know whether anyone watching this session has a son or a daughter who is thinking about going to university. They should study electrical engineering. It is great, and there are lots of fantastic opportunities. I would say that, would I not? However, it is absolutely true.

Scotland supplies a lot of the electrical engineers for the whole of the UK. We talked about the mobility of people, and a lot of our graduates move down south and get senior jobs in places such as National Grid and so on. That is great for them—those are great opportunities. However, it is difficult for small and medium-sized enterprises, and many parts of the construction sector are very small operations. They are exposed to a lot of uncertainty and risk. Therefore, those sorts of employers need particular help, whether that is in the form of loans or something else. If the individuals who are taking time out to do the training, whether that is an evening class or a month-long course, are not earning while they are doing that, as I mentioned earlier, that makes it very difficult for them.

Big industry can potentially support that training, when it has the confidence that the jobs and future revenues will be there. It can support that investment through its balance sheets. It is much harder for smaller businesses, so that is where we need to target a bit more thought and effort.

Brian Whittle: I am glad that you mentioned the risk to small and medium-sized companies. I visited a heating engineer company in Kilmarnock. It will take three or four years to train somebody. However, when that person graduates, there are much bigger engineering companies down the road at Prestwick airport that can just sook them in, so where is the incentive for that heating company to train that person?

There is also the issue of certainty in the marketplace. Those companies want to expand—that is the frustrating thing. This committee went to Prestwick airport, and every engineering company that we spoke to wants to expand, but they cannot get the engineering staff that would allow them to do so.

That leads me to my next question. Kevin Stewart alluded to creating the opportunity before you close down the previous opportunities, so that the highly skilled, transient oil and gas workforce does not end up on the scrap heap. The anecdotal evidence from a friend of mine in international recruitment is that people are being taken from Aberdeen and placed somewhere else in the oil and gas sector. How do we ensure that we create opportunity for them here prior to closing down that sector?

11:15

Professor Bell: Those are really good questions, and I ask them, too. As I said, I do not have a magic bullet that would solve that, and would note my points about the need for communication, foresight, confidence and making training places available.

All those things are interlinked. I go back to my earlier point about having greater clarity, which feeds through into investment. I do not know the detail about how we should support the sector, especially the small and medium-sized enterprises, but it feels like a particular area where the right support is needed.

Brian Whittle: When we talk about Government and private investment in the green economy, one of the things that seems to be missing is how we invest in weaving the green economy into our educational environment before students get to tertiary education and college. How do we highlight the opportunities? We were hearing that engineers at Prestwick airport are paid £77,000, which is a pretty decent salary. That is long-term work, because electrical engineering will always be required. I do not think that we market that career well enough in our educational environment. As part of the investment in the green economy, are we considering how we invest in the educational environment to make sure that we have the right skill set?

Professor Bell: Arguably, we are not considering that enough, although there are lots of initiatives to address all sorts of aspects. At my university, we did a short project in which one of the postdoctoral researchers looked on the internet and found 100 different initiatives that were related in some way to the electricity system and to management and attraction of the workforce. How are all those initiatives linked? Where are the gaps? How successful are the initiatives? There seems to be an absence of co-ordination, although I am told that organisations such as Skills Development Scotland and Energy & Utility Skills Ltd are on top of that.

When it comes to getting into schools and communicating the opportunities, there are one or two initiatives and there is some chat around the subject. There are schemes that send engineers into schools to give talks and to set up little games and exercises for a bit of practice. They can have a bit of an impact, and universities also offer summer schools, but do they have a big enough impact? I am not sure.

There is another school of thought that says that we should actually be teaching the teachers so

that they understand the opportunities. Rather than teaching careers advisers, it might be about teaching the physics or maths teachers and, especially, the primary teachers. A lot of primary school teachers do not come from a science, technology, engineering and mathematics background, so it does not come quite so easily to them. What are we doing to support them and to generate some enthusiasm at that level of education?

We also need to maintain the enthusiasm. I have read suggestions that there is a big fall-off in enthusiasm in the early days of secondary school. There is also a big cultural challenge, especially around STEM subjects because they are not seen as being cool.

I can give a personal anecdote. Both my daughters have studied STEM subjects. My older one graduated this summer in electrical and mechanical engineering and she is very proud of that. A key moment for her in school was having a woman as her national 5 engineering science teacher, which made a difference to the atmosphere of the class.

There are all sorts of things that can be done and there is a lot of work to be done. A lot of work is going on, but it feels a bit fragmented.

The Convener: I am sorry, Mr Whittle, but we have other business this morning. I must ask you to bring your questions to a close.

Brian Whittle: I have one left.

Professor Bell: I am sure, convener, that you also want the witnesses not to give such long answers.

The Convener: That would be helpful, too.

Brian Whittle: I think that you are giving us the answers that we want to hear.

As a country, we have always prided ourselves on innovation. The fact is that some of the answers that are required have probably not been invented yet. I disagree with what one of my colleagues said about this: I do not think that anything needs to contract—we just have to decarbonise or encourage decarbonisation. That brings us back to the need to invest in education as a way of creating long-term solutions.

Professor Bell: Yes—I totally agree. Broadly speaking, I think that the technologies for enabling net zero already exist. They are not all at similar levels of maturity, but it takes a long time for new technologies to emerge—to go from an idea into a laboratory and then to a scale-up. It is all there—indeed, it has to be there—but there is a need for further innovation to improve performance, reduce costs and improve flexibility, and there is a lot of detail to be looked at with regard to how everything hangs together. There is still a need for significant investment in research and development.

Brian Whittle: I will leave it there, convener.

The Convener: Colin Smyth, do you wish to ask a question before we close?

Colin Smyth (South Scotland) (Lab): The point has been made a couple of times that one of the challenges of the transition is that, currently, wages in the oil and gas sector are often better than those in the renewables sector. I suppose that my question is for Professor Roy. Has the Scottish Fiscal Commission made an assessment of any of the second-order effects of the transition? For example, what is the impact of wage variations on the public finances?

Professor Roy: To come back to the point about data, I think that one of the challenges that we face is that there is no one sector that we can look at and say, for example, “These are oil and gas workers, and this is their tax contribution”, partly because, ultimately, we do not know where their residence is. A person who is working offshore might live in Glasgow or somewhere else in the country.

However, it is possible, as we have done, to isolate the north-east itself, which can give a rough proxy for the value of the north-east economy more broadly. Of course, that is not just about oil and gas—although we think that oil and gas forms a significant proportion of that economy—because there is also the supply chain and the wider strengths of the sector.

The analysis that we have done has shown that there is an income tax premium, if I can call it that, with regard to the region’s contribution relative to the Scottish average. One of the issues that we have raised about fiscal sustainability is that, once you remove that premium, Scottish income tax would be lower than it would otherwise have been.

That brings us to the broad point that what really matters under our fiscal framework is high-value jobs. Oil and gas provide such jobs, which matter and benefit Scotland. The crucial question is how we get high-value jobs in all sectors and, crucially, how, if we transition away from oil and gas, we get high-value jobs that boost our relative income tax position.

Colin Smyth: Perhaps I can bring in Professor Bell. A related matter, I suppose, is the fact that Scotland has significant economic inequalities. I am based down in Dumfries and Galloway, which is the lowest-paid region in Scotland. At the moment, the debate with regard to the just transition is on how we maintain the economic premium in the north-east but, to be frank, for my

constituents just maintaining the status quo does not equal a just transition.

As for the drive towards renewables, the argument is that we do not build any of the turbines in Scotland; however, we put them up all over Dumfries and Galloway, and they are monitored not there but in an office in the central belt. Is there any evidence developing that the transition is tackling any of the economic inequalities that we have in Scotland, or is it just maintaining the status quo when it comes to the economy?

Professor Bell: Professor Roy can talk more broadly about the economy, the various pressures that it faces and how they change incomes, and about the distribution between different areas, educational brackets and so on.

Of course, the energy transition—that is, the low-carbon transition—is not the only thing that is going on. I refer to my earlier comment about the need to leverage investment anyway, and the opportunities that come with that.

Naturally, we will compare one region with another, or one future with another, but there could be opportunities in areas such as Dumfries and Galloway. I do not know for sure—I have not looked at them in detail and, of course, Mr Smyth knows the area much better than I do—but I know that, for example, ecosystem services often come from the landscape. What benefits might come from parts of the area being a national park? How could the agricultural sector there transition so that it has the potential to bring extra value as regards looking after the land? What new ventures could come about in tourism?

There is talk of building a new cable factory for the electricity system not far from Mr Smyth's patch. I do not know how far advanced that proposal is. Wind farms are not popular with everybody and we do not want to put them everywhere, but they bring with them certain kinds of jobs. Such opportunities exist, so it is about selling those and attracting inward investment. Those are factors that I know the committee is always concerned about.

On a just transition, I agree with Mr Smyth in one sense, in that achieving it is not only about keeping jobs in one place. More broadly, it includes making decisions about having jobs in one sector versus jobs in another, and monitoring how things are changing in employment there. However, it is also about the overall impacts of a having a low-carbon economy and about sharing the costs and benefits fairly across society. That includes asking certain questions. What will energy bills be like for people across the country, regardless of where they live? What will affect the cost of that energy or the cost for people to get around?

Such a transition must be just and fair for future generations, too. It makes having the discussion much more difficult when there are immediate challenges and potential hardships and uncertainties, which we try our best to minimise and manage. We must also bear in mind that we have to deliver justice and fairness for future generations in managing the impact of climate change and reducing its extent.

Colin Smyth: Has Professor Roy any comment on that? There are inequalities.

Professor Roy: You are right. We need to put certain aspects in context. We have touched slightly on the labour market opportunities in the sector. The most recent data from the Fraser of Allander Institute talked of 13,500 jobs in renewables technologies, but we must remember that 2 million people are employed in the private sector in Scotland. Therefore one of the big factors to consider is where the future opportunities will come in our economy more broadly, with those opportunities and businesses operating in a low-carbon world.

Professor Bell mentioned some aspects of the broader sectors, but this also concerns the opportunities in sustainable tourism or for people to work remotely in general in other sectors in the economy. Therefore our approach has to be not only about renewables jobs or low-carbon energy jobs in regions, but about the broader success of the economy more generally, where we need to match up skills and opportunities. The flipside of that is—

Colin Smyth: I agree with you about highly paid jobs. Some of the sectors that we have mentioned so far—you have both mentioned tourism—are hugely important to our rural economy, but the jobs do not pay what an aircraft engineer is paid, for example. How we get highly paid, high-quality jobs into those areas is the challenge.

Professor Roy: Yes, but increasingly, in sectors such as sustainable tourism and food and drink, the drive towards quality rather than volume is leading to higher wages. That is not to say that everyone will be paid exactly what, say, an offshore engineer is paid—and for very good reasons, given the nature of that job. However, my general point is that part of the conversation about a just transition has to be about how we can create high-value jobs in Scotland more generally, at the same time as thinking about the transition to net zero, which gets into the skills base that we have in our economy.

One thing that we know is that our labour market is changing. Mr Smyth is from Dumfries and Galloway, where the ageing demographic is a

huge issue. How should we support people to transition to work longer, but also attract younger people to the area? That goes back to the reasons why people might want to live and work in Dumfries and Galloway, compared with their being in a city. How can we then nurture the skills system, the education system and everything else in order to attract people to such areas?

The conversation has to be broadened out beyond creating high-value jobs and low-carbon energy, to how we create such jobs in the Scottish economy, where the opportunities, particularly in more rural areas, are really significant.

The Convener: Thank you very much. That brings us to the end of this morning's session. I thank Professor Roy and Professor Bell for their evidence. We now move into private session.

11:29

Meeting continued in private until 11:47.

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