



OFFICIAL REPORT  
AITHISG OIFIGEIL

# Net Zero, Energy and Transport Committee

Tuesday 7 September 2021

Session 6



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**Tuesday 7 September 2021**

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**NET ZERO, ENERGY AND TRANSPORT COMMITTEE**

**3<sup>rd</sup> Meeting 2021, Session 6**

**CONVENER**

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

**DEPUTY CONVENER**

\*Fiona Hyslop (Linlithgow) (SNP)

**COMMITTEE MEMBERS**

Natalie Don (Renfrewshire North and West) (SNP)

\*Jackie Dunbar (Aberdeen Donside) (SNP)

\*Liam Kerr (North East Scotland) (Con)

\*Monica Lennon (Central Scotland) (Lab)

\*Mark Ruskell (Mid Scotland and Fife) (Green)

\*attended

**THE FOLLOWING ALSO PARTICIPATED:**

Dave Moxham (Scottish Trades Union Congress)

Professor Jim Skea (Centre for Environmental Policy)

Collette Stevenson (East Kilbride) (SNP) (Committee Substitute)

**CLERK TO THE COMMITTEE**

Peter McGrath

**LOCATION**

Committee Room 3



**Scottish Parliament**  
**Net Zero, Energy and Transport**  
**Committee**

*Tuesday 7 September 2021*

*[The Convener opened the meeting at 10:00]*

**Interests**

**The Convener (Dean Lockhart):** Good morning, everyone, and welcome to the third meeting of the Net Zero, Energy and Transport Committee. I remind everyone that social distancing measures are in place in committee rooms and across the campus. Please observe those measures when entering and leaving the committee room.

I welcome to the committee Collette Stevenson, who is here as a committee substitute for Natalie Don MSP.

Agenda item 1 is a declaration of interests. I ask Collette to indicate whether she has any relevant interests to declare.

**Collette Stevenson (East Kilbride) (SNP):** I am delighted to be at the committee, albeit on a temporary basis.

The only relevant interest that I will declare is that I am currently a councillor for South Lanarkshire Council.

**The Convener:** Thank you very much, Collette.

**Decision on Taking Business in**  
**Private**

10:01

**The Convener:** The committee's main business today is an evidence session on the just transition commission. However, before we hear from our guests, we must deal with agenda item 2, which is to decide whether to take agenda items 4 and 5 in private. Agenda item 4 is consideration of the evidence that we will hear under item 3, and agenda item 5 is consideration of our approach to the scrutiny of a legislative consent memorandum on the United Kingdom Environment Bill.

Do members agree to take those items in private?

**Members indicated agreement.**

## Committee Priorities

10:02

**The Convener:** The committee will now take evidence from two former members of the just transition commission. The evidence session is an opportunity to explore the commission's main findings and to seek views on the next steps for the just transition agenda and the objectives towards net zero.

I am delighted to welcome Professor Jim Skea, who is former chair of the just transition commission and professor of sustainable energy at the centre for environmental policy; and Dave Moxham, who is a former member of the just transition commission and deputy general secretary of the Scottish Trades Union Congress. We are delighted that you could take time out to join us this morning. Thank you very much for doing so.

Broadcasting staff will operate your cameras and microphones, so there is no need for you to do anything at your end.

I understand that Professor Skea has a brief opening statement to make before we move to questions.

**Professor Jim Skea (Centre for Environmental Policy):** Yes. I will be very brief, convener. We appreciate the chance to meet the committee.

Reaching net zero by 2045 is an incredibly ambitious target, and how we get there is also very important. The justice part of the just transition concept is really important for a principled reason and a pragmatic reason. The principled reason is that it represents the kind of country that Scotland wants to be but, pragmatically, we will not get buy-in for net zero by 2045 unless people are bought into it and are given a chance to lead and give a sense of direction.

It was a great privilege to be invited to chair the commission. I pay tribute to my fellow commissioners, who certainly have strong points of view on particular matters. People worked really well together. They strove for consensus right from the beginning, and every word of the report that came out was bought into by every member of the commission. It was very much a consensus exercise.

I would like to make one other point to open things up. With the 26th United Nations climate change conference of the parties—COP26—coming up, what Scotland has done with just transition has caught a lot of international attention. I have done presentations in Brussels,

Scandinavia, Switzerland and the US, and Scotland is perceived to be quite world leading. As we go into COP26, it is worth while bearing in mind that Scotland has caught a lot of attention internationally.

However, that creates questions about expectations management. In some ways, the just transition commission 1.0 was the easy part of the job; the big challenge now is delivery and making it happen. The fact that Richard Lochhead has been appointed as the Minister for Just Transition, Employment and Fair Work is an important first step in pulling everything together, but the question of how it is made more concrete in the future will be very important.

**The Convener:** Thank you, Professor Skea—that is a useful introduction, and you have covered a number of points that I am sure that members will want to pursue in questions.

I will kick off with the first question. As you said, there has been a significant amount of discussion about the need for a managed transition to achieve net zero climate targets in Scotland. The just transition commission issued a series of general recommendations to the Scottish Government in March this year, setting out four key messages.

As you will know, the programme for government will be announced this afternoon. We do not know what is in it, but what specific actionable policies and plans would you like the Scottish Government to implement over the next two or three years that will take us towards net zero? It would be fantastic if you could also touch on some of the key economic sectors that you think need to be prioritised.

Professor Skea can start, and then we can go to Dave Moxham.

**Professor Skea:** Our first set of recommendations was about the importance of a planned transition, on the basis that an unplanned transition is likely to be an unjust one. One of the key recommendations was the notion of planning at a sectoral level to ensure that everybody—employers and employees—in affected stakeholder groups understands which direction the Government wants to go in.

With regard to which sectors are an absolute priority, it would be hard to ignore the question of oil and gas and the north-east of Scotland as a key issue that will be very important. Dave Moxham may want to comment on that.

In addition, many members of the commission were struck by the very big challenges in the rural economy, not just the industrial part but the land and agriculture sector. I have had the chance to speak to the Cabinet Secretary for Rural Affairs

and Islands in the past few weeks, and I know that that sector is recognised as a particular challenge.

The just transition commission in Scotland did something that has not been so common in other countries, in that it focused on the consumption side and the consumer end of the economy. We have to be aware that some aspects of the transition to net zero need to be paid for, and the way in which those costs are distributed will be incredibly important. Our fourth area of recommendations covered the issue of who bears the costs and where the burden, if there is one, falls. We should remember, of course, that there are many opportunities—it is not all about burdens.

**Dave Moxham (Scottish Trades Union Congress):** I thank the committee for having me. I concur with all Jim Skea's introductory comments, and his answer to the convener's first question. He is right—we need a road map, or a set of road maps, that cut across every major sector of the economy. An example would be a plan for energy, rather than just a plan for oil and gas. Some of that is mirrored already in the action that Government is taking. Within those sectoral plans, in particular with regard to some of the big players, we need an expectation—again, this is already happening to some extent in industry, but it needs to happen more quickly—for just transition plans from individual companies at a sub-sectoral level. The just transition commission is clear that, at every level, there needs to be a seat at the table for workers through their trade unions but also, fundamentally, for affected communities, in particular where transition may involve regional inequities.

It is hard not to concentrate on the three or four high-emission sectors. There has been some progress on energy, although particular progress has still to be made. However, we must recognise that in buildings and heat and in transport we have not yet got off the mark. In both those key sectors, we will need to see immediate and swift action. From the just transition commission's perspective, we saw a good example of movement on Alexander Dennis Ltd buses. From an STUC perspective, we would argue that we need to roll out quickly through the public sector some of the retrofitting strategies, while not taking our eye off some of the longer-term developmental opportunities: the areas in sectors where we potentially still have first-mover advantage in some of the developing technologies, particularly in oil and gas.

There is therefore an awful lot to do and it is very much a question of what we can do quickly and effectively early while not losing our focus on the long-term developmental opportunities.

**The Convener:** Both of you touched on a number of points that my fellow committee members will pursue. The area that I want to follow up on is the massive retraining and skills that will be required to equip the workforce for future trends in this area. That is one of the four key messages and bits of advice that you gave to the Government earlier this year. I also looked at the STUC report from 2019 that highlighted that the number of jobs predicted in the low-carbon and renewables sector had not materialised, for a number of different reasons, and that domestic, Scotland-based supply chains had not materialised in the way that was expected.

Starting with Dave Moxham, what do you think that we need to do differently? What different policies and actions do we need to take to make sure that the future technology-driven jobs in this area are created in Scotland and remain here?

**Dave Moxham:** There is potentially quite a lot there. Looking in particular at the low-carbon and renewables sector, what is clear—this goes back further than any current Government—is that there has not been a manufacturing and industrial plan to go alongside decarbonisation. Frankly, we are in the last-chance saloon when it comes to some of the sub-sectors. For example, in offshore wind, we still believe that it is possible to retain and promote the expansion of its manufacturing and construction part, but we really are in the last-chance saloon.

That is one area where those road maps and sector plans that we talked about are vital. In our view, addressing that situation will involve Government intervention and support similar to—but, hopefully, more proactive than—what was provided in relation to the situation at Burntisland Fabrications. It will also require changes at a United Kingdom Government level; we are waiting for the outcome of the contracts for difference consultation that is taking place at Westminster. We are hopeful that the outcome will be the ability of the Government, as partly a purse-string holder, to dig into far more detail on how the target of 60 per cent content in offshore supply chains can actually be delivered on the ground. As part of that action at the UK level, a road map and sector plan have to be introduced in Scotland to bring about a realisation by, and a buy-in from, some of the big corporate players of what will be expected of them in the decades to come as we develop our offshore capacity further.

10:15

I realise that I am taking up quite a bit of time, but I will touch on the skills recommendation in the just transition commission's report. We think that the skills guarantee is absolutely vital. It provides a base level of security for workers who are being

asked to consider transition. We think that there is significantly more portability of skills than the system is currently effecting.

The other side of that is regulation. You will rarely hear a trade unionist talk about having less regulation, but there can definitely be smarter regulation in areas such as health and safety certification for oil and gas workers as they transition to other energy sectors.

**The Convener:** Thank you—and please feel free to make your answers as long as you think is necessary to address the issue. You raised a number of important points.

I will bring in Professor Skea.

**Professor Skea:** I very much agree with all the points that Dave Moxham made. When it comes to delivery, there are two sides to the question. Dave rightly mentioned the contracts for difference mechanism at UK level and how the way in which it has operated has not helped us in the past. Let me just flag that even if it is reformed to some degree, to deliver better on local content, there will still be competitive tensions in that kind of process. Therefore, it is important that Scottish yards and Scottish enterprises are in a position to bid successfully into the kind of competitions that will come along. That is where all the skills, retraining and so on will be really important, as well as investment in facilities.

I have one point to add on the sector plans—I am building on the experience that I had when I was a member of the UK Committee on Climate Change, developing advice for Scotland. It is important to plan and develop milestones and targets that are ownable by specific people who will take things through. The first of the commission's more procedural recommendations was that there should be a minister for a just transition, which has happened. The second was that there is a continuing need for advice on and scrutiny of the Government's progress. That is where measuring progress against benchmarks and providing scrutiny can move us in the right direction, so that there is no opportunity to take the foot off the accelerator; people need to keep working on these things and have milestones to work against.

**The Convener:** Fiona Hyslop wants to follow up on some of those issues.

**Fiona Hyslop (Linlithgow) (SNP):** I thank you for your work on the commission and for your report, "A National Mission for a fairer, greener Scotland". This committee's wanting to hear from you in our second meeting is evidence of the importance that we place on a just transition.

I want to focus on industrial transitions. We know that the 2045 target will be tough and that

the 2030 target is even tougher. You have talked about tensions. If we are to deliver on the targets, it might be imperative that we focus on one sector as opposed to another. How do you see the sectoral approach, given that you called for just transition plans in each sector? How do we raise the game for all sectors while trying to meet the targets?

**Professor Skea:** Thank you for that challenging question. It is important that we keep reminding ourselves that no single answer, technique or sector will get us to net zero by 2045; it absolutely needs action right across the field. No sector can miss out on this.

When it comes to picking out individual sectors, it is a question of those on which we need to work urgently because they face big challenges now. The oil and gas and energy sector is the obvious place to start, but unless we do transport and buildings, which are incredibly important, we will not get there. We need only look at the numbers from the Climate Change Committee on what net zero in 2045 would look like in Scotland; basically, we are looking at emissions from transport and buildings being eliminated by then, which gives you a sense of the level of ambition that is needed.

Remind yourself, however, that there are big opportunities, too. The building sector shines out as one in which there is a triple win: dealing with fuel poverty, getting emissions down and, if we are going to go for deep retrofits of buildings, upskilling workers to try to get those measures in. We should not leave those aside—we do not have time to do that. As you have rightly pointed out, the 2030 target is almost more ambitious than that of net zero by 2045. Nothing should be left off the table.

One thing that the commission debated a bit when it was working up the recommendations was whether there should be an overall economic plan for net zero by 2045, or whether we should start by building from the bottom up, sector by sector. We decided to base our recommendation on sector-by-sector plans, because we thought that it would take too long to get an economy-wide plan together and then have that trickle down to individual sectors. We were very keen on the idea of getting on with things if obvious actions needed to be taken. The energy sector has been emphasised for that reason: we kind of know what needs to be done there, so we should get on with it. Some other sectors will be a bit more challenging, but that does not mean that we leave them to one side.

**Fiona Hyslop:** I have a question for Dave Moxham, and Professor Skea may then want to come in. I know that other colleagues will want to come on to specific sectors, but I am interested in

the “how” of delivery, given that skills and reskilling are central.

Over the past year, we have gone through an experience whereby we have probably had unprecedented work between unions and employers in dealing with the pandemic. That approach, of bringing employers and unions together to tackle this and to come up with skills transition, strikes me as something that could be very positive.

On the idea of mapping the different skills needed in different sectors, a lot of skills and retraining is very individualised now—a lot of private providers do it on that basis, and there is a lot of responsibility on individual workers in different sectors to do it themselves. How do we do that collectively? Dare I say it that historical vested interests are, understandably, involved in some aspects of the protection of the high standards that are necessary in different sectors for working in what are, quite often, very challenging circumstances. What is your advice on how we can make sure that, as part of those individual sectoral transitions, skills and retraining are developed in a way that is meaningful, bearing in mind that it looks as if money, resource and commitment are there? It is about the “how” and the delivery.

**Dave Moxham:** Part of my answer is slightly repetitious, in the sense that I think that we need company-level agreements on just transition and that skills should be an integral part of that. We need employers to step up to the plate.

You are right to point out that, to a degree, there is a bit of individualisation of the skills offer, and a varied geography in the commitment of different employers to delivering on workplace skills. Personally, I think that, with the growing imperative and expectation that major employers will have a role both in their individual transition planning and in sectoral plans, the architecture is there to do it.

I am not sure whether it was your interpretation, and it certainly was not my meaning, that there should be any downgrading of necessary skills or qualifications. I just think that, at the moment, we are missing opportunities for potentially creating the type of skills training that is suitable for people who already have a significant number of the competencies that are required and who require a top-up.

This comes back to your former question about which sectors and when, but we need to align our skills delivery to specific Government and industry investments in specific areas. Professor Skea spoke quite rightly about deep retrofit; the only issue for us with deep retrofit is how fast we can go because of available capital spending

opportunities and the revenue situation. There are very few people anywhere who disagree with the idea that deep retrofit will be necessary as quickly as possible and to as much scale as possible. The idea there is to make an ambitious—although it would necessarily need to be realistic—commitment to work in that sector, assess the skills that are currently out there and what skills are needed, and ensure that we have a dovetailed approach to the combined delivery of those skills at the workplace and at college. It is about ensuring that the skills plans fit with the sector plans and that we are very ambitious but also realistic about what that will look like over the next four or five years.

**Fiona Hyslop:** Could Professor Skea come in on that?

**Professor Skea:** Dave is much better informed than I am on the detail of that type of issue, but I will make one general observation. A knowledge-based net zero economy will have a much larger resource to put into training and reskilling than we have had in the past.

You mentioned the issue of vested interests in your initial question. It is incredibly important to bang heads together in relation to those who are providing the training and certification and bring them together—almost a sectoral plan for trainers—so that they have an idea about what the big prize is in terms of a net zero economy and do not focus on trying to protect particular areas of interest. Having that larger-scale idea of what we are trying to do in relation to shifting the economy would be quite helpful in bringing together the people who are providing the training and certification.

I spent two years as president of the Energy Institute, which does a lot of that kind of activity, and bodies such as that are beginning to grasp the idea that we need to look at skills right across the energy sector and not have oil and gas skills in one place and renewable energy skills somewhere else. So many of those skills are transferable and there are artificial obstacles at the moment that need to be overcome.

**Fiona Hyslop:** We could perhaps explore that a bit more if you want to follow up.

**Liam Kerr (North East Scotland) (Con):** I have a brief question on that topic. Dave Moxham mentioned the college sector in passing. There must be a requirement for specific courses to aid any transition, and furthermore for lecturers to deliver them. That needs to happen up front, because in order to drive a transition you need those courses to be delivered and for people to be coming out of them. Is there any evidence that those courses are being put in place and that lecturer skills are being put in place to deliver

them, or has that stalled waiting for a transition plan and, if so, does action need to be taken very quickly?

**Dave Moxham:** You have tempted me into the answer, towards the latter part of your question, which is that we need significant action in the college sector, including funding and alignment. We recently published “Green jobs in Scotland” and I am happy to furnish the committee with the report if it has not had the opportunity to see it yet.

The report makes it absolutely clear that there is an enormous array of potential choices in most of our high-emission sectors about what we do next and, yes, some of those decisions in terms of scale and direction need to be taken now. That is the information that the college and further education sector in particular, but also the university sector, will need to have.

The easy answer to the question is that both things need to happen at once, but if the offer is between a chicken or an egg, I think that the chicken is some of those strategic sectoral decisions about where investment will go, where our research and development will be put and where we will be able to introduce quicker projects—what might be called shovel ready projects—which will need a swifter response from the training sector.

10:30

It is hard to speak specifically about this, but as part of its work, the just transition commission looked in some detail at the offering of various colleges. We were, for example, over in a central college near Grangemouth and not too far from, say, BiFab. We need a really clear road map of the intentions for somewhere like Grangemouth if the college sector is to be in a position to respond to the transition skills needs presented by those major industrial areas that currently have very high emissions.

**Mark Ruskell (Mid Scotland and Fife) (Green):** Good morning. I was really pleased to see just transition principles being embedded through the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 and the setting up of the commission, albeit not on a statutory basis. Is there a concern about just transition being interpreted in the same way as sustainable development? In other words, it has a thousand different flavours, and the board of an oil and gas company and a community affected by a major development will have very different perspectives and points of view on the matter.

Can just transition and the work that you have started deliver the real systemic change that is required, or is it still predominantly about mitigating climate impacts by building more

efficient kit or putting carbon capture and storage solutions into existing plants instead of making wholesale change? I would be interested to get your sense of where discussions on just transition have reached and, more important, who is leading them.

**Professor Skea:** There is a big risk of the words “just transition” being used as magic dust that gets sprinkled on net zero policies to make them seem socially and economically benign. We really need to move things beyond the generalities.

One big challenge is that the phrase “just transition” does not easily trip off the tongue of ordinary people. In surveys of oil and gas workers that we carried out, only a very small number had heard of the idea, and that is why, in communicating it, we have to talk about concepts of fairness and of not burdening people unfairly. The more general use of the word “fair” is incredibly important.

We are at quite a critical point. We need to move things on from principles and generalities to practicalities, which is why, when ministers asked us to come up with realistic and practical recommendations, we took that work seriously. There was only so much that we could do in that phase of the commission, but the next phase will be absolutely essential in making all this concrete and specific. I have mentioned, for example, sectoral planning and targets for individual sectors for which people can be held accountable. Unless that kind of thing is done, we are not going to move on.

I am spending a lot of time on international issues, and the concept of just transition has become quite well embedded. The Intergovernmental Panel on Climate Change report that I am working on has plenty of recommendations on just transition, including, if I recall correctly, an occasional reference to Scottish just transition initiatives.

The issue is catching fire internationally. There is a committee of the United Nations Framework Convention on Climate Change that looks at just transition, although not through that language. We are in an early phase, but the idea is catching fire. I hope that the work of the just transition commission has helped that, not only by stating general principles but by bringing in some practical implementation.

**Mark Ruskell:** The Grangemouth future industries board is one practical example of a conversation that is led predominantly by the industrial cluster rather than by the community itself. How should we roll out just transition plans for individual sectors or within individual communities?

You will be aware that there are community concerns about the ethylene plant in Mossmorran. That may be a different context from the one at Grangemouth. The Mossmorran conversation is being led by the community rather than by the operators, which seem to be reluctant to take part in discussion at all. It is a different starting point. How would a just transition plan work for that site, which is the third biggest carbon polluter in Scotland? How would you compare that to the Grangemouth future industries board, which has been very much corporate-led and driven?

**Professor Skea:** I am trying to read Dave Moxham's expression to see if he is willing to pick that one up. I am not ducking out of it, but he may be a better person to answer.

**Dave Moxham:** The core of this is something that is very simple but which, as Mark Ruskell's question shows, does not always happen. Three parties are needed at the table: the workers who are affected, the community that is affected and the company. If we include Government, there are four parties. That is the core.

If there is to be any form of Government support, whether that is direct funding, planning support, skills support or any one of the range of levers that Government has, there should be a requirement to have a plan. Further, no company or cluster should be able to state that they have considered and agreed a plan unless those who are employed, and the community that is affected, are a significant part of that discussion.

As we know, the way in which consultation and genuine empowerment are undertaken is as important as the fact that those things are seen to have taken place. We are not talking about quick community surveys or one-off meetings between management and unions. We are talking about deliberative processes, in which all voices are brought to the table and sign-off is required from all parties. That would be a fundamental change, but I argue that it is a necessary one. Some of those things must happen at pace.

To go back to the point about conditionality, those things should not be considered good practice additions. They should be considered absolutely fundamental to the on-going relationship between development agencies, Government, local authorities and the employer if all the assistance that is provided through the public sector to such companies is to continue.

**Mark Ruskell:** Were the community and unions involved in the Grangemouth industry cluster?

**Dave Moxham:** No. We expressed concern in our recent report that that had not taken place. That is a fundamental miss. Mossmorran is an important example. The perceived needs of the workforce and the community may not be the

same, and there may be some similarities between the company position and that of the workforce.

Those are the hurdles of just transition and the meat that we need to get into; they are the problems that we need to resolve while avoiding, in the case of Grangemouth, the difficulties of previous industrial relations. Avoiding tensions between communities and employers may be the easy route, but it is not the just transition route. It does not get us anywhere to ignore those stakeholders because otherwise, returning to the premise of your original question, the phrase "just transition" is just words. If just transition is not hard, friction giving and difficult at times, it will not be doing its job. If there was an easy answer, we would have found it already.

**Monica Lennon (Central Scotland) (Lab):** Last week, we heard from the CCC and we have been looking at its recent carbon budget, which highlights the need for significant investment in order to reach net zero. Although CCC modelling shows savings in surface transport and energy production, there will also be costs in areas such as homes and industry. What are your views on how that can be managed and mitigated to spread the costs and benefits fairly? In particular, I am interested in how we can make sure that everyone can afford to make their home energy efficient. What I have taken from the discussion so far is that a just transition has to be principled, but it also has to be pragmatic and practical.

**Professor Skea:** That really gets to the heart of the matter. The bulk of the expenditure that has taken place so far on decarbonisation in Scotland, and in other parts of the UK, has in effect been paid for by electricity consumers. It has come through electricity bills. You can certainly make the case that that is regressive; we made that case in the just transition commission report. It means that the costs are falling higher on particular groups of people—for example, people who are on lower incomes or who have to use electricity as their form of heating.

My personal view is that a much bigger exploration of how that is paid for is needed, looking at whether doing it through general taxation or spreading it more evenly across other forms of energy would be fairer. There may be an announcement on national insurance this afternoon that will have other regressive implications. Addressing the "who pays?" bit and thinking carefully about what the mechanism is will be important.

It is also worth saying that you need to think about different groups. Scotland has done very well in terms of improving energy efficiency in social housing, for example, where there is a clear public sector mechanism for making sure that

funds are directed in the right kind of way. There are also mechanisms available in the private rented sector, such as using regulatory means to try to get things switched over when tenancies switch over.

Frankly, the most difficult sector for housing will be the owner-occupied sector, where you will be asking everybody to come up with their own amount of money. We have said that if people can pay for it, they should pay, but there are differences there and it will be good to work out how we get the incentives to work fairly. My view is that mechanisms such as grants or very low interest loans are potentially the way to encourage owner-occupiers to switch over, where you do not have the kind of regulatory levers that are in place for social housing or the private rented sector. The owner-occupied sector will be the toughest to move because you will be expecting people to reach into their own pockets to some extent to finance the transition.

10:45

**Dave Moxham:** There is a bit of an elephant in the room here. Understandably, other than recommending the marshalling of public and private resources and recognising the need for generally increased investment, the just transition commission does not go as far as, for example, the STUC goes.

We are not even in the right ball park at the moment when it comes to the levels of public investment that we need. It is easier to say it than it is to suddenly magic up the type of investment that we will require. We need to start from the position that we need massively increased public investment. Some of that is possible in Scotland, and some of it would become more possible with increased borrowing powers. A lot of it would become more possible if we had a more Biden-style approach to investment at a UK level. Whether we take that political decision now or in a few years' time or as things get more acute, that is going to have to happen.

At the point when public investment increases—which brings with it an increased level of capital debt—we will have to work out how we sustain that. The STUC's argument is fairly clear, and we see enormous opportunities for economic growth, which would obviously fund an awful lot of the indebtedness. When it comes to the specifics of your question on who pays for the elements of that transition that are not paid for by general growth, that has to be a matter for general and progressive taxation.

I think that Jim Skea got pretty close to agreeing with this position: we are at the end of the point when bills that are spread across Scotland can be

sustained by the consumer, especially in fuel-poor areas. Part of the whole message of the just transition commission is that this is a national mission, and a national mission has benefits that far outweigh the benefits of an individual householder receiving lower fuel bills as a consequence of a retrofit programme. To use retrofit as an example—although it is not the only one—we would like there to be standard, municipally delivered retrofit. I am just about old enough to remember when, over a couple of years in the 1970s, we shifted from non-natural gas to natural gas, which meant millions of boilers being converted. That was a national mission undertaken by a public company. I have never seen the analysis of how well people think that that went, but it certainly worked. That is the level of intervention that we will require.

I tend to agree with Jim Skea on private house owners: we need to be as generous as we can be, as a society, in incentivising people, through grants and other mechanisms, to undertake the measures. It can be a harder thing to fix if the state is not necessarily going to pay for the whole of the retrofit programme.

To return to my original point, there is a real scale issue here, and I can understand why Governments shy away from that, including in Scotland—all the levers do not necessarily exist. At some stage, someone will have to stand up and say, "This is going to cost a lot of money"—and it will have to be funded by the people who can afford to pay, not by those who cannot.

**Monica Lennon:** Sticking with your point that this has to be a national mission, we touched on the roles of the private sector and corporations last week. How important is it for the public sector to show leadership?

To give an example from the weekend, it was reported in *Scotland on Sunday* that some of the venues that will host COP26 have some of the worst-performing buildings in terms of energy efficiency. The armadillo, for example, has a rating of F. There could be good reasons why it has not been possible to put in place the improvements that have been asked for, but if it is really hard for big venues such as the Hydro, the armadillo and the Glasgow Science Centre, what chance do low-income households or small businesses have? How can we mobilise public sector expenditure? What would true public sector leadership look like—both for decarbonising buildings and for circular procurement?

**Professor Skea:** My microphone is turned on, so I will go first.

It is an important issue. The public sector has an absolute obligation to lead by example. It is a national mission but the ringmaster or ringmistress

who is trying to pull everything together is Government, and, unless it is leading from the front, the process is not going to work well.

You have identified the key areas. The energy efficiency of buildings is an important area in which the public sector can lead by example. The question of procurement is also important. The public sector can make sure that vehicles that it uses are electric or whatever—I believe that, as an example, in our green recovery report, we made a recommendation about having a fleet of electric buses for COP26. Public sector pension funds and their investment policies are another area in which the public sector can lead by example.

I would like to follow up on something that Dave Moxham said in response to your previous question. All of us who are getting too many grey hairs remember when we moved from town gas to natural gas. However, the big difference then was that, at that time, there was one national company that could go in and make the change street by street. Now, in any given street, every residence has a different energy supplier. Frankly, as we have seen with the smart metering campaign, giving the responsibility to different suppliers is not an effective way to go about things. You almost need street-by-street or neighbourhood-by-neighbourhood approaches to make it work. The issue needs a lot of attention. If we are going to deliver change quickly, we need to think about the institutional arrangements and whether it is possible to take a street-by-street approach rather than an approach that involves offers being made to individual households, which is pretty much what we have at the moment.

**Dave Moxham:** I will just jump in briefly. I agree with the direction of your question and of Jim Skea's answer. The public sector needs to be an exemplar.

Jim Skea might remember this better than me—although he might not, because it was a long time ago—but I think that, in the first year of our work, we took evidence from NHS Scotland about health boards' plans to bring in coherent just transition plans and emissions reduction plans. Nowhere could that be more important than in the health service, as we are still seeing disproportionate health impacts of poverty—fuel poverty in particular—and environmental illnesses because of high pollution.

All public sector areas, particularly health boards, need rigorous and monitored plans to ensure that building emissions are being reduced. Nowhere is that more important, in holistic health and just transition terms, than in those areas. We absolutely need the public sector to be an exemplar.

**Monica Lennon:** With regard to climate change as a health and safety issue for workers, I have a final, brief question for Dave Moxham on the issue of adaptations. What does a just transition to a net zero economy mean in relation to adaptations around climate change and resilience? From the point of view of the STUC, can you touch on what that means in workplaces and say how we can ensure that workers have some influence on the changes that need to happen?

**Dave Moxham:** That is an important area, but it is one that tends not to be covered because, for understandable reasons, we tend to think about the jobs that might be lost or created as a consequence of the transition rather than the ones that might be—to use your term—adapted. It is an issue that ranges from workplace resilience in the context of climate change—workplaces are already feeling the impact of weather change—all the way through to jobs that might not be classically understood as climate jobs but that are the sort of jobs that can be made greener or, simply by their function, aid the process of decarbonisation. In that respect, I am talking about local work, such as localised childcare. We should not think of any job as not being in some way impacted by climate change and in some way being able to contribute to carbon reductions.

What are those workplace measures and how can employers, unions and groups of workers who are not yet unionised work together to do that? It could start with union-agreed travel and travel to work schemes. We are all reasonably aware of cycle to work schemes, for example, which could be made more accessible to lower paid workers. There is a whole suite of policies that relate to consumption even before someone gets to the workplace. There is a whole suite of skills that workers can learn—but are more likely to be adopted and taken up if they are being delivered by unions and employers together—that go towards potential decarbonisation of the workplace itself. I bet that every one of us can think of one example where we could have done something that was more carbon friendly in the workplace. The just transition principle extends to that.

Messages tend not to be very well received when they are sent down by diktat by the employer; they are far more likely to be accessible and bought into if they are agreed at workplace level and if the skills and support, including time off to train, where necessary, are offered as part of a workplace agreement. There is an enormous amount to be gained from what we might call the softer side of just transition, where a job is not necessarily disappearing or being created but is one that is being adapted. In that kind of adaptation area, the just transition principles are absolutely fundamental.

**Monica Lennon:** I hope that we will see more unionised workplaces. I have no further questions.

**Collette Stevenson:** Jim Skea touched on local pension funds. I should declare an interest as I was previously the chair of Strathclyde Pension Fund. We had a fiduciary duty to ensure that we were maximising the members' pension pots, but arguably there was also an ethical investment element. I know that Strathclyde Pension Fund is probably about the 12th biggest pension fund in the UK. How do we balance that going forward? Is that something that you have looked into to see how we can transition to making those pension pots more ethical?

**Professor Skea:** That is a great question and the commission did not get the chance to go into that kind of issue in depth. It is a bit of a high level appeal.

Having listened to colleagues who work in the financial sector, I observed that it is not necessarily the case that an ethical investment will provide a poorer return than a standard investment at the moment. Someone might well be better placed to put their money in a renewable energy company or in funds that focus on renewables, rather than, for example, the oil and gas sector. We need to take a long, hard look at the question of whether there needs to be a trade off or whether investing in a future low-carbon economy will provide a better return for the people who are paying into the pension fund.

I am a member of a public sector pension fund and I know that this is a large area of debate in relation to the universities fund at the moment. I was also on the board of a renewables company that the Universities Superannuation Scheme paid into and got a pretty good deal out of at the end of the day.

11:00

**Jackie Dunbar (Aberdeen Donside) (SNP):** Good morning, gentlemen, and thank you for coming along.

My questions are about fossil fuels. You will not be surprised that I want to ask about the oil and gas industry, which Professor Skea said will be a key issue—I totally agree. What role is there for the oil and gas industry in a just transition? Should there be further investment in new oil and gas projects?

**Professor Skea:** That is the big question that faces us all.

A very obvious point to make is that a number of oil and gas companies out there are trying to rebrand themselves—Statoil has become Equinor, for example. The question to emphasise is: what are the skills and competences in the oil and gas

sector at the moment that can be redeployed to assist us towards a low-carbon economy? The oil and gas sector is very good at getting corrosive liquids and gases through pipes, managing the geology under the surface and managing big, complicated, risky technical projects. Those competences will be needed as part of a low-carbon economy. For example, if we are thinking about the movement towards hydrogen clusters, we can see that that is an area in which the oil and gas sector has competences that can be applied. If we are to capture carbon and store it geologically, the only companies that, at the moment, have the skills to do that and the ability to monitor the process—as the former Statoil did with its field in the Norwegian sector of the North Sea—are oil and gas companies. The sector has that kind of role to play.

The rebranding of the oil and gas technology centre in Aberdeen, for example, as a centre that is much more about energy, is a signal that the sector understands where it wants to go. I was struck by a joint article that came out yesterday, by Fatih Birol, who leads the International Energy Agency, and the Iraqi Government, in which it was acknowledged that the age of oil and gas will eventually be over and consideration was given to how the countries of the Organization of the Petroleum Exporting Countries will need to move over.

On the second part of your question, which was about the future of oil and gas, I can give what is very much a personal view, which builds on my experience of the Intergovernmental Panel on Climate Change. Even in scenarios in which we limit global warming to 1.5 degrees, there is a need for some new oil and gas in the system. For light vehicles, clearly, electrification pretty much appears to be the way to go, but we will still need oil for longer for heavy-duty vehicles. Oil will be needed, to some extent, for aviation and for petrochemicals, lubricants et cetera. Oil will be needed in future, even in low-emissions scenarios.

The difficult question, of course, is this: who will be the last person standing in supplying that oil as we move out of oil? That is the much more difficult and interesting question for me, and it is the question that we are currently asking in relation to the position in Scotland and the UK. Globally, we still need some more oil and gas; the critical question is who will supply it.

**Jackie Dunbar:** Dave Moxham, you mentioned smarter regulation when it comes to safety, which I took to mean safety in the North Sea. Was I correct? If so, will you delve a bit deeper into what we could do smarter with regard to safety?

**Dave Moxham:** I was thinking more about accreditation in relation to safety courses and what safety qualifications are required for an individual

in a new industry. The example that we were given during the just transition commission's deliberations was to do with deep-sea divers in the offshore oil and gas sector, who were being required to pay £1,500 individually to ply their trade in the offshore wind sector.

It was put to us that, as you can imagine, the qualification levels that are required of somebody who dives at the kind of depth in the pressurised circumstances of servicing an offshore oil and gas installation are probably far in excess of—or are certainly not exceeded by—what is required for a similar, but not so testing, function in offshore wind, and yet individuals are still being required to pay £1,500 in order to gain a new accreditation for that specific sector. Their position was that, over the whole range of health and safety competencies and knowledge, including a high degree of medical proficiency, because a couple of people are working together hundreds of feet under the water in pressurised circumstances, there is a complete mismatch with the requirement to pay £1,500 to get a new certificate where all the competencies already exist.

That is a fairly sharp example of what has been put to us as the need to redo a course to gain an accreditation, very often at a cost to the individual, which goes back to Fiona Hyslop's question about the individual nature of the skills involved. A systematic job could be done to make portability more efficient in terms of how skills are certificated.

**Jackie Dunbar:** Moving forward, what should the Scottish Government do to ensure that opportunities and skills are delivered in time, so that the carbon-intensive sectors do not face an economic downturn and do not lag behind the competition from overseas? That is one of the major issues that I hear about in my constituency.

**Professor Skea:** That question is probably more for Dave Moxham—I am sorry to pass it over, Dave.

**Dave Moxham:** In a sense, the problem is that we are already behind the curve, as we are already seeing significant job losses in offshore oil and gas. It is worth mentioning that whatever trajectory one uses for the offshore oil and gas industry, whether it involves the 2035 projections or a steeper decline, that will be a consequence of market developments and Government decisions.

Even with the significant fall-off in overall numbers, there will still be a significant number of people coming into offshore oil and gas because of the workforce demographics. Even though numbers will fall, the sector will still need to recruit significant numbers of people. There is some evidence that that is already proving difficult, because it is something of a disincentive for young

people to move into an industry that they do not necessarily see as giving them a lifetime guarantee.

It is important now that the skills offer and the overall job package is aligned with the development trajectory of what we think will happen with offshore oil and gas and where it will transition to. For example, does a job in offshore oil and gas today have a future in the development of CCS or hydrogen technology? How likely is that? In what way can skills be transferred to an offshore wind job or various other transition destinations?

The real task is to align the skills offer and the package—because, as I said, the industry will still need new recruits—and project that in a way that gives people some understanding that making a commitment now to offshore oil and gas encompasses a longer-term trajectory, which might see them in a different place but still able to apply their skills and gain a reasonable income as a consequence.

**Liam Kerr:** Good morning, gentlemen. I will continue with the line that my friend Jackie Dunbar has been pursuing, because it is such an important one. Jim Skea said earlier that the words “just transition” are used as “magic dust”. I understand that point, and you rightly flagged up issues about the practicalities. I read a BBC report this morning that said that if Cambo went ahead, associated with it would be

“1,000 direct jobs in Scotland and 2,000 more in the supply chain”

and

“another 500 elsewhere in the UK.

The report contrasted that with the Viking project—described as a “vast new wind farm” in Shetland being put together by SSE Renewables—which would have “35 permanent jobs” associated with it. For a transition that we all accept that we need to make, is there an issue with not only the practicalities of what can be achieved but the realities of it?

**Professor Skea:** Yes. That is a perfectly fair question, and some hard choices are involved in making that decision. Going back to my answer to Ms Dunbar's question, if the world is going to fulfil the Paris agreement targets, there will be less oil and gas used in the future than there is now—the use will unambiguously go down. The question, though, is about who will supply that oil and gas in the future. Will it come from the middle east, which has probably some of the cheapest oil and gas? Will it come from getting the last molecules from mature fields such as we have in Scotland, or will it come from emerging nations such as Ghana in west Africa, which is struggling with its own transition challenge because it had hoped to use

oil and gas revenue to pay for its basic economic development?

There are big, fundamental and tricky questions. It is almost a kind of moral choice at the moment and it is a hard question that we cannot duck. Scotland could go ahead and have those jobs, but would that be coherent with Scotland, as a small nation, portraying itself as a leader on the global stage on climate policy? That is a tough question and the answer lies in the political domain. Those of us looking at the more technical details cannot provide the answer; it is a political decision.

**Liam Kerr:** Yes. Thank you for that. I listened carefully when Dave Moxham talked to Jackie Dunbar about the move that oil and gas workers can make into jobs in other areas and energy sectors. I understand that point, but then ask myself: where will an offshore chef find an onshore chef's job with the equivalent pay? Where will the helicopter pilot fly to if there is no installation to get to? Where will the crew of a platform supply vessel work if the vessel does not have a platform to go to? Where will the roustabout find work onshore with the equivalent pay? Those roles do not readily map on to something like offshore wind. Ought not the Scottish Government to be addressing those sorts of questions urgently and talking about what it wants our oil and gas workers to retrain into and what green jobs might be available if it is to get the buy-in that Dave Moxham rightly said is required?

**Dave Moxham:** There is a fundamental truth—or, at least, an important partial truth—in what you say. There will never be the intensity of jobs across the offshore wind sector that there is in offshore oil and gas. We can split the issue into three or four different components, beginning with the development stage. The development stage of offshore wind involves, for example, paying the lawyers and surveyors. In that kind of area, there are analogous jobs. I would not say that they are exactly the same, but they are analogous.

The construction phase crosses over with offshore oil and gas jobs; indeed, lots of people who used to work at BiFab are now working offshore.

11:15

There is then what you might call the logistics and maintenance phase. There is absolutely no doubt that offshore oil and gas provides significantly more jobs at significantly different—and, in some cases, better—pay levels than offshore wind will ever be able to provide. The first thing, then, is to accept the reality that when we talk about a transition to offshore wind, we are talking about some jobs in some sectors, but not at an overall level of intensity. That is why we have

put so much emphasis on the construction phase, because without that, the situation worsens.

We then need to look at which emerging technologies are suitable for transition. Some offshore oil and gas will undoubtedly be transferable if we can get first-mover advantage in CCS and hydrogen. Nevertheless, your final point remains. There will still be functions in offshore oil and gas that cannot be replicated in any of the sectors that I have talked about, and that is where, if you like, non-industry transition and the regional approach to providing alternative but not similar employment will have to be a factor.

**Liam Kerr:** In its final advice, the commission recommended that the Scottish Government develop detailed road maps and that workers in carbon-intensive industries be supported in accessing the skills that they require to transition. The Scottish Government has not done that work yet, and the funding skills that have been announced lack detail. Is it important to have these details and schemes in place before the Scottish Government takes decisions that might lead to serious problems for, say, workers in the oil and gas industry and the north-east?

**Professor Skea:** The processes need to work in parallel, because one feeds off the other. It is really important that the sector plans are followed through, and they must be developed and executed in parallel with the kinds of decisions that need to be made. In that respect, we are waiting to see what will be in the programme for government later this afternoon.

On your previous question, it is absolutely and unambiguously true that low or zero-carbon energy is more capital intensive than oil and gas activities, which inevitably means that jobs are concentrated in the construction phase. Lots of jobs can be created in building up the renewables sector, but once you reach a steady state, the number of jobs required goes down, because only replacement activity is needed. We need to face up to the fact that, in a low-carbon world, there will probably be fewer jobs in the energy sector than we have at the moment. Such an outcome is quite possible.

I have mentioned my activities with the Energy Institute. Every year, it runs a survey—a so-called barometer—of its members on certain issues, some of which relate to skills. I find it very striking that those who respond from companies in the oil and gas sector are still far more worried about skills shortages and people coming into that sector rather than the opposite problem that we are worrying about. There are other issues such as the age structure of the workforce and the number of new people who need to come in, and those are exactly the kind of areas where some proper analysis and planning are needed to understand

the impacts. The just transition commission did not have the time or resource to do that in its two years, but it is very important that such analyses are carried out as we move forward with the just transition concept.

**Liam Kerr:** I am very grateful for that.

**The Convener:** Mark Ruskell has a very brief supplementary in this area, after which I will bring in Collette Stevenson.

**Mark Ruskell:** Professor Skea, you co-authored the groundbreaking IPCC report on 1.5°C that ignited the whole debate. Where do you see oil and gas development and the Cambo oil field? Is that compliant with our need to keep the world under 1.5°C?

**Professor Skea:** You need to look at the overall global picture; there will be less oil and gas produced in the future under any 1.5°C scenario, but there is still need for new oil and gas development to compensate for the depletion of existing fields and the fact that there are still residual markets—[*Inaudible.*] Whether that particular oil field is compatible with 1.5°C is a difficult question to address and I am not sure that I know the answer. I am struck by the fact that the oil and gas policy of the UK is to maximise economic recovery from the North Sea, and the big question for squaring the circle is whether that is compatible with climate change objectives.

With my more analytical hat on, I would home in on the issue of the economic recovery and ask, if you take out the externalities—the climate change implications of producing oil—is that particular field still economic? I do not know the answer to that and I do not think that anyone has done that proper analysis, which would be the driving question for me. If you take account, for example, of the Treasury's guidance that we should be valuing carbon dioxide at around £70 or £80 a tonne by 2030, does that particular oil field still stack up? I do not know the answer and I do not know whether anybody has done that analysis.

**Collette Stevenson:** I will focus my questions on the forthcoming COP26. Professor Skea touched on the just transition. Internationally, everyone is looking at Scotland in relation to transition, so I would like to tap into that and ask whether you can go into more detail. You talked about the just transition principles and how the international climate change negotiations have played out to date. Are the principles properly understood? Have they been accepted internationally or is there an expectation gap?

**Professor Skea:** Internationally, the principle has been accepted, although there has been some pushback from some countries and there has been the typical complicated language. We do not have a just transition committee; we have the

Katowice committee of experts on the impacts of the implementation of response measures. That is what it is clumsily called, because they could not bear to just call it the just transition committee.

The Polish presidency pushed just transition and made it the central concept. It is mentioned in the preamble to the Paris agreement, but not in the actual agreement. After a bit of struggle, it is now scoped into the next IPCC synthesis report, so I can assure you that it will get coverage from the IPCC as well as in the formal negotiations. It is running.

The trade unions are one of the major interest groups that go along to the conference of the parties, and the International Labour Organization, which leads on that, will push just transition principles. Richard Lochhead and I had a meeting with the Icelandic economic council last Thursday along with the president of the International Labour Organization. Just transition is very high on the agenda at the moment. There is some pushback in some quarters, but it is there.

**Collette Stevenson:** Does Dave Moxham want to comment?

**Dave Moxham:** The concept and the understanding of just transition have developed over the past couple of years, and the Scottish Government's just transition commission and the debate here in Scotland have assisted with that. The change that we are making is to do with the original understanding of just transition as being compensatory. The idea is that, where a coal mine has to be closed down, relevant regeneration moneys and programmes need to be put in to compensate the community. That is, and will continue to be, an important part of a just transition. However, we are now moving into the space that we need to be in, where the concept is understood much more holistically as an economic and industrial policy, even if there are sub-sectors.

There are still differences internationally. For example, there are those who see a just transition as something that need not affect the social and economic relations of a particular country, and which simply needs to be stuck on top of everything else. For example, how do we ensure that the jobs that are created, and the benefits from them, are properly dispersed?

In Scotland, however, we are getting to, but have not yet reached, an understanding that a just transition will challenge some of the fundamental relations within society itself. For example, how does community democracy relate to the industry that it sits within? How do trade unions engage with employers? Some of those more structural elements of a just transition are being developed, but in my view we are not there yet with regard to what such a transition should really mean.

**Collette Stevenson:** We can also talk about the principles, which are central to the forthcoming negotiations in Glasgow. Should we and the UK be ensuring that the principles feature in the agreement and the negotiations for the future? I suppose that the focus is on the UK because we have left the European Union, and our role in delivering a just transition has taken on a different aspect now that we are outwith the EU. Sorry—I am going all round the question here.

My other question is controversial. Should there be more of a four-nations approach, rather than a UK-led approach, when we come to that platform?

**Professor Skea:** It is interesting that, so far, there has been far more interest from Brussels in the progress on a Scottish just transition than there has been from London. I have been at several commission-related meetings where we have talked about what is happening.

I agree completely with Dave Moxham. In the past, just transition has featured most strongly in countries or regions that are exiting the coal industry, and it has focused on the issue of financial compensation. The reason why people have been interested in the Scottish example is that we have broadened the concept of just transition. Financial compensation and related issues are really important, but how we go about things—the way in which we consult, and the processes—is equally important. That has been important in attracting attention.

Scotland has also drawn attention to the demand side of the economy and the impacts on consumers as well as on the supply side and on workers. That has caught a lot of attention. In my discussions with non-governmental organisations internationally, they have been very interested in advancing the just transition concept following some of those lines. It is about not just the supply side, but people and places and the demand side as well. That is why we are attracting attention—we have broadened the concept.

The fact that the commission was invited to be realistic and practical has also caught a lot of attention. We talked quite a lot about what constitutes a realistic and practical recommendation as opposed to something that is about sprinkling magic dust on net zero, as it were.

**Dave Moxham:** Collette Stevenson identified as controversial the question whether there should be more of a four-nations approach—I think that she was referring specifically to the approach to COP26. Generally speaking, the answer is yes. We have run through emissions from high-emission sectors. Using the back of a fag packet, the majority of those emissions are within devolved competences. They are in housing and

transport. The emissions may not be within renewables, but part of the answer is within renewables. Given the weight of competences, it would be very good to see a four-nations approach.

11:30

Jim Skea made a comment about there being more interest in Europe than at Westminster. I have not seen that, but I have concerns that Westminster is further behind in its understanding of a just transition. I will give two brief examples. The disagreement between the Scottish and UK Governments about green ports and free ports concerns me. Another example is what we have identified as the dilution of fair work statements in the North Sea transition plan, which is, at the end of the day, a UK competency, too.

I prefer to be optimistic and say that the UK Government has the opportunity to catch up on its concept of what a just transition is and how it is implemented, but I certainly do not think that it is as far forward as we are in Scotland.

**The Convener:** Members have some brief follow-up questions if the panellists can bear with us. We will try to keep our questions brief.

**Fiona Hyslop:** This question may be only for Jim Skea, on this occasion. It is about the idea of offshoring, how we translate that on a global basis and how the world looks at what fairness is in a global context. That is the big picture for COP26.

Your report mentions the idea of a potential global carbon tax for offshoring. Has the commission done much work on that? What are your personal views on how we can broaden the issue of just transition to be not only a national issue, and the international dimension of it?

**Professor Skea:** With my IPCC hat on, I have to say that the internationalisation of just transition is also an issue. One of our recommendations was about exploring border carbon adjustments to avoid the risk of offshoring industry. That is a delicate issue to put out internationally, because some developing countries view border carbon adjustments as pulling up the ladder in respect of development. That needs to be thought about carefully to ensure that border carbon adjustments do not become a mechanism for establishing trade barriers that will be perceived as impeding a just transition at the international level, that the approach is fair, and that we are not pulling up the ladder on developing countries.

**Liam Kerr:** I think that you mentioned fuel poverty in response to an interesting line of questioning from Monica Lennon, gentlemen. The Scottish Government announced the intention to set up a publicly owned energy company to

address fuel poverty and achieve net zero. Do you have a view on whether such a company would have achieved that in light of the just transition principles that you have worked to? Having considered that, do you have any insights on why the ambition to have a publicly owned energy company is yet to be realised?

**Professor Skea:** It would be great if we could have started from a different place. Dave Moxham raised the example of the switch from town gas to natural gas. That was achievable because, at the time, we had a public energy company that did the supply and it could do that in an organised way. That is not the place that we are starting from at the moment. A public energy company would come in and compete with the existing set of private suppliers. That would perhaps have helped in a niche way, but the bigger challenge is what we do with the overall energy system, the patterns of energy supply, and how energy is delivered to consumers.

I am sure that Dave Moxham has views on that, as well.

**Dave Moxham:** I do. A Scottish energy company that was focused purely on price or, if you like, the retail side of energy may have helped a little, although it would have been immersing itself in what is already a very competitive market. Our ambition for a nationally owned energy company always went beyond that, and we continue to be interested in other aspects including generation, community generation and, ultimately, transmission and construction. Therefore, although such a company might have been helpful, it is arguable—I was not on the inside on this—that one reason why it moved off the agenda is because that limited retail role would have done only a little bit of good.

The main price issue remains that of the use of general taxation rather than direct charging to fund future development. For me, that is the first step that we need to take if we are to bear down on individual energy costs.

**Monica Lennon:** My question is for Dave Moxham. It relates to skills and jobs, which we have talked about. The green jobs workforce academy went live recently. I had a look at it this morning and, so far, it appears to be a website where people can find a list of jobs and training courses for everything from wind turbine technicians to heavy goods vehicle drivers. What should the academy be doing? It is early days, but what can it do to help to create jobs and get people into training?

**Dave Moxham:** I have not had time to look at the website in detail. What you describe seems to be a small green jobs labour exchange. That could potentially reduce a bit of friction for people in

getting jobs, but it will not have a fundamental impact.

What should it look like? It should be a portal where people who are engaged in the active planning of new initiatives and in jobs creation come together with the people who are able to provide the skills to give real content. In a sense, it will only ever be the outward face of a Government strategy, which, as we have rehearsed for the past hour and a half, needs to be better funded and co-ordinated and part of a sectoral plan.

I am not against the idea, but I am just a little suspicious of overemphasising the importance of something that might make it slightly more efficient to look round the market and see what is there and to match people to jobs but that will not change any of the fundamentals of job creation or the skills offer. I guess that it is half a clap for it just now. I am not sure that it will ever be more than the outward face of what needs to be a far more hard-edged and fundamental policy change to deliver on jobs and skills.

**Monica Lennon:** That is helpful—thank you.

**Mark Ruskell:** Should the use of gross domestic product as a measure of progress simply be stopped outright, or should a more transitional approach be taken?

**Professor Skea:** My opinion is that, basically, GDP needs to be supplemented by other measures that provide a different indicator of welfare and people's quality of life. GDP measures economic activity, and we absolutely need to measure that in order to undertake planning, but that needs to be supplemented by other measures that relate to welfare. My message is that we need something that is not instead of but as well as GDP.

**Dave Moxham:** I broadly agree with Jim Skea. Particularly for economic and industrial planning, GDP is not the measure that we need to use. The experience of the oil and gas sector, where there have been massive disparities between GDP per capita and actual quality of jobs, community regeneration and other things that have been delivered, bears testimony to that.

We talked about an energy transition plan. It would be entirely wrong to use GDP as the lone measure for such a plan. Although GDP may work—I stress the “may”—for some of the macro judgments that we make, when it comes to planning the transition in the key sectors, GDP is not irrelevant, but it can sometimes be less than useful, and sometimes it can be a negative measure. That will become more the case, rather than less, as we pursue a just transition.

**The Convener:** That brings us to the end of our questions. I give a big thank you to Jim and Dave for being with us this morning. I apologise that the session has overrun slightly—thank you for bearing with us and thanks for your patience. That indicates just how useful your evidence has been in setting the scene for the committee and addressing a number of the important issues that were raised with you. No doubt we will work with you again in the future. Enjoy the rest of your day.

11:41

*Meeting continued in private until 12:28.*

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