OFFICIAL REPORT
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Net Zero, Energy and Transport Committee

Tuesday 27 January 2026

Session 6

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NET ZERO, ENERGY AND TRANSPORT COMMITTEE
4th Meeting 2026, Session 6

CONVENER

*Edward Mountain (Highlands and Islands) (Con)

DEPUTY CONVENER

*Michael Matheson (Falkirk West) (SNP)

COMMITTEE MEMBERS

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

*attended

THE FOLLOWING ALSO PARTICIPATED:

Sarah Boyack (Lothian) (Lab) (Committee Substitute)
Lucy Geoghegan (Scottish Government)
Gemma Grimes (Solar Energy UK)
Professor Matthew Hannon (University of Strathclyde)
Claire Mack (Scottish Renewables)
Gillian Martin (Cabinet Secretary for Climate Action and Energy)
Norman Munro (Scottish Government)

CLERK TO THE COMMITTEE

Peter McGrath

LOCATION

The Mary Fairfax Somerville Room (CR2)

Scottish Parliament

Net Zero, Energy and Transport Committee

Tuesday 27 January 2026

[The Convener opened the meeting at 09:07]

Decision on Taking Business in Private

The Convener (Edward Mountain): Good morning, everyone, and welcome to the fourth meeting in 2026 of the Net Zero, Energy and Transport Committee.

Our first item of business is a decision on taking items 5 and 6 in private. Item 5 is consideration of today's evidence on the draft climate plan. We will also use this item to consider the evidence that we heard at previous meetings. Item 6 is consideration of the committee's work programme. Do members agree to take those items in private?

Members *indicated agreement*.

The Convener: Thank you.

Subordinate Legislation

Greenhouse Gas Emissions Trading Scheme (Amendment) Order 2026 [Draft]

09:08

The Convener: Agenda item 2—[*Interruption*.] It was rude of me not to have acknowledged that Sarah Boyack is attending today as Monica Lennon's substitute. Thank you, Sarah, for attending.

Agenda item 2 is consideration of the Greenhouse Gas Emissions Trading Scheme (Amendment) Order 2026. This draft statutory instrument makes various changes to the United Kingdom emissions trading scheme. The Delegated Powers and Law Reform Committee made no comment on the instrument in its report. However, it noted that the instrument had been withdrawn and relaid twice: first due to errors that were identified by the responsible minister, and subsequently in response to questions that the committee raised with the Scottish Government.

I welcome to the meeting Gillian Martin, the Cabinet Secretary for Climate Action and Energy, and her supporting officials from the Scottish Government: Lucy Geoghegan, head of unit, net zero economy and carbon markets; Natalie Bertagna, senior policy adviser; and Norman Munro, lawyer.

The instrument has been laid under the affirmative procedure, which means that it cannot come into force unless the Parliament approves it. Following the evidence session, the committee will be invited to consider a motion to recommend the instrument be approved. I remind everyone that the Scottish Government officials can speak under this item but not in the debate that follows.

Cabinet secretary, I think that you would like to make a short opening statement and also allude to an issue that may have appeared last night.

The Cabinet Secretary for Climate Action and Energy (Gillian Martin): Yes, thank you, convener. I think that it would be helpful for me to make a short statement to take us through the instrument.

I am pleased to provide evidence supporting the draft Greenhouse Gas Emissions Trading Scheme (Amendment) Order 2026. The UK emissions trading scheme authority, which is formed by the four nations of the UK, is implementing changes to strengthen the climate ambition of the ETS while protecting our businesses and industries. These technical changes focus on the methodology for distributing free allocation of UK ETS allowances. This is the UK's primary policy instrument to

address carbon leakage—that is, when emissions move to another jurisdiction with lower carbon prices.

As the committee will be aware, ETS participants must purchase an allowance for each tonne of CO_2 that is emitted. However, some allowances are given free to sectors that are deemed at risk of carbon leakage. The ETS authority has consulted extensively on the free allocation policy to ensure that, crucially, it is working to incentivise emissions reduction and protect energy-intensive trade-exposed industries from the risk of carbon leakage.

The authority published a consultation response in November last year outlining changes for the next free allocation period from 2027, and the instrument will implement the commitments that are included in that response. I will go through each of them.

First, operators can choose whether to exclude activity data for 2020, or 2020 and 2021, from historical activity level calculations to account for Covid-19 impacts. The concerns of stakeholders about the impact of Covid-19 have been heard. Consequently, the instrument will ensure that operators' historical activity level is representative so that operators do not lose out on free allowances due to the impact of Covid on production in many sectors.

Secondly, the instrument will update the benchmarks that are used to calculate free allocations: it will retain current benchmarks for 2027, with the intention of adopting European Union benchmark values from 2028. This will ensure that recent emissions efficiency improvements are reflected in free allocations, while aligning with the EU—which is the Scottish Government's position, and called for by stakeholders—to support linking negotiations.

Thirdly, to ensure that all carbon leakage mitigation measures work cohesively, including ETS free allowances and the UK carbon border adjustment mechanism, the instrument will gradually reduce free allocation for sectors that are covered by the UK CBAM—the aluminium, cement, fertiliser, hydrogen, and iron and steel sectors—to ensure a smooth transition for those sectors.

Finally, a clarification to current legislation makes clear to operators of installations that cease to be free allocation installations as a result of either permanent cessation, as is currently provided for, or the surrender or revocation of the operator's permit, that, even if they cease operations before the end of the relevant scheme year, they are required to report final year activity levels. This requirement will ensure that free allocations align with actual emissions and prevent overallocations.

These technical changes will ensure fairness and accuracy in free allocation distribution, while continuing to support those sectors.

I have to let the committee know that I am aware that the Welsh Senedd's Legislation, Justice and Constitution Committee has identified a minor error with the instrument. The issue does not impact the operability of the instrument. One word—"period"—should have been erased as it is being replaced by another term.

The authority is working to determine the best option for amending the instrument, seeking resolution at the earliest opportunity, and the Scottish Government is working with other members in the authority to ensure that we improve the ETS SI drafting and legislative process in future. However, as I said, the issue does not have any material impact on the operation of the instrument.

I am happy to answer any questions that the committee might have.

The Convener: Thank you very much, cabinet secretary. Before I ask any questions, as the instrument relates to fertiliser, I remind members of my entry in the register of members' interests that I am a farmer in Moray, and I use fertiliser.

To go to the final point, on the drafting error, first, perhaps you could give me some clarity. Although the issue is only with the word "period", I am told that it has quite a large impact. What is the solution to that? Will all four nations work together to come up with a new SI, which will be laid for the committee to consider? How will you get around the issue?

09:15

Gillian Martin: I will bring in Norman Munro, because he knows all the vehicles that might be available to the UK Government. However, the error does not impact the working of the SI at all—it just duplicates the meaning of another term.

Norman, could you take us through the solutions that have been presented?

Norman Munro (Scottish Government): There is consideration across the UK ETS authority on the appropriate vehicle to correct this error. Vehicles that are being considered include a correction slip and finding a suitable legislative vehicle. This is the UK ETS's 14th instrument since it was established, so instruments are always available if amendments need to be made at a later point. Those are the two vehicles that are being considered to remedy the error at the earliest convenience.

Gillian Martin: I will give you the exact phrasing. The issue relates to the term “relevant period”; “scheme year”, which is meant to replace the word “period”, has been inserted, so the extraction of the word “period” is required.

The Convener: I recognise that the issue is only a single term. I was trying to understand it.

Norman, every day in the Parliament is a learning day for me, because I have never heard of a correction slip. Help me—is that a term that we use in the Scottish Parliament? People might not know it; I certainly do not.

Norman Munro: Yes, we use it in the Scottish Parliament. Once an instrument is made and has been laid before the Parliament, a correction slip can be added if an error of a minor nature is perceived. It goes on legislation.gov.uk alongside the instrument, and the necessary amendment is made. A correction slip is often used in areas in which there are parts of the instrument that cannot be amended, such as footnotes.

The Convener: Does the committee have to consider that? I have been convening committees for 10 years, but I have never come across a correction slip. I am just delving into the issue so that I understand it. Does the committee have to look at it again? Is it like bringing the SI back?

Norman Munro: I am afraid that we do not use correction slips an awful lot. More often than not, the intention is to make an amendment through an amending instrument. Correction slips are relatively rare, but my understanding is that they would not undergo formal process as a full instrument would.

The Convener: Every day is a learning day for you as well, Norman. The clerks tell me that it is not a normal procedure but that it can be done. Once the solution is identified, I would be interested to see the best way to take the matter forward.

From what you said, cabinet secretary, I am getting that you are confident that the instrument can progress, and that you know full well that there are errors, but they could be corrected in the short term. Would that be done before the end of this parliamentary session?

Gillian Martin: I will need to write to you once we have bottomed out the method by which we will take this forward. We are still looking at the potential methods. Whether we use a correction slip or something else, we will write to let the committee know.

The Convener: Thank you. I will continue my learning process on how this is done. This SI has had quite a messy birth, given that it was withdrawn a couple of times before we came to it.

Sorry, Sarah, did you have a question on the procedure? You caught my eye.

Sarah Boyack (Lothian) (Lab): I did, convener, because I had not heard of a correction slip either, so I wanted some clarification on it. It is useful to have had that clarified on the record that such a matter can be addressed in two ways. Neither is significant, but as long as the solution gets the support of all four nations, it will be workable, and the committee will be informed. Having that on the record is really important.

The Convener: Thank you, Sarah. The possible difficulty in getting all four nations to agree might extend the process, so the resolution might come after the time that I am in the Parliament, but I hope not.

I turn to the substantive issue. What are the main impacts that Scottish businesses will feel as a result of the changes to the free allocation that are brought about by the instrument?

Gillian Martin: A business regulatory impact assessment—BRIA—has been done for the instrument. The ETS instrument is designed to protect businesses that have high emissions but that are performing a necessary function in producing what they produce. Free allocations are given to high-emitting businesses that industry needs to operate. Also, the CBAM is coming into force. That will put additional levies on top of imports that are produced in countries that do not have a similar ETS, which will further protect businesses.

All the high-emitting industries in Scotland have substantial free allocations associated with them. When it comes to their competitors outwith the UK, the new mechanism that the UK is bringing in—the CBAM—will be phased in as the free allocations drop, which will effectively protect businesses from competition from imports that come from countries that do not have the same emissions trading function or procedure that we have in the UK. *[Gillian Martin has corrected this contribution. See end of report.]* If we did not have that, that would put businesses here at a disadvantage.

The Convener: So you are pretty sure that the effects on Scottish businesses are actually good and not bad.

Gillian Martin: Yes. If they are high emitting, there are more free allocations associated with their business.

The Convener: In the past four or five years, I have heard constantly that things change very quickly, which does not give any certainty for businesses to invest in what they are doing. Does the instrument give businesses in Scotland the certainty that they need to invest in making the changes that they are being required to make?

Gillian Martin: Yes. The instrument addresses issues that have been brought to the attention of all four Governments. One thing that the instrument does is to mitigate the impact of the two years in which Covid inactivity was highest—the instrument adjusts that so that businesses do not have to take it into account. It also updates the benchmarks that are used for free allocation to reflect emissions efficiency improvements. That involves looking at emissions efficiency for each applicant. The instrument will also enable the reduction of free allocation annually in the period from 2027 to 2030 for some installations that will be covered by the CBAM. It is, in effect, a phased approach for which businesses can plan.

The Convener: Thank you for explaining what the instrument does. I am looking for you to clarify that final sentence on the record. You believe that the instrument gives businesses certainty to invest in the future and that the scheme will not be changed again. I cannot remember how many iterations the scheme has had.

Gillian Martin: It is not really in my gift to say what the UK Government will do. Obviously, the ETS and the CBAM are UK Government measures, although the four nations are kept in the loop by the UK Government on the direction of travel.*[Gillian Martin has corrected this contribution. See end of report.]*

The ETS is not new. The UK ETS was a replacement for the EU ETS as a result of Brexit—it was brought in by the previous UK Government to replace that mechanism. That was because it was understood that, if we did not have a replacement, that would leave businesses vulnerable. There has been a long period since the end of the previous session of Parliament, when I was sat in the chair that you are in now. At that time, five years ago, we were looking at the implementation of a UK ETS to replace the EU one, because we were exiting the EU. That is a great deal of notice. I guess that the uncertainty at that point, five years ago, would have been about whether the UK ETS was going to work but, of course, it has been working for the past five years.

The Convener: Okay. I am looking to see whether any other committee member has a question.

Douglas Lumsden (North East Scotland) (Con): Fertilisers are within the scope of the instrument. I just want to get some assurance that there will not be an increase in the cost of fertilisers to our farmers when this comes into play.

Gillian Martin: I do not see that the instrument would have any effect on the cost of fertiliser. It is difficult for me to predict what will happen in the markets, but, as a result of this instrument, the free allocation to businesses that manufacture in high-emitting areas in the UK will continue to be protected. Obviously, quite a lot of fertiliser is imported. In fact, I think that the vast majority of fertiliser is imported. Whatever happens in other countries will be the thing that drives any price increases. Of course, as a result of the CBAM, there is a fairness associated with any imports that come from countries that do not have an ETS. A fertilising company that was set up in the UK would not be put at a disadvantage because another country from which we were importing fertiliser had the advantage of not having to be involved in an ETS.

Douglas Lumsden: Will the instrument make any changes to the cost of imported fertiliser?

Gillian Martin: I could not possibly answer that. I do not know what will make changes to the cost. There will be other factors involved in the cost of fertiliser, not least the cost of fuel, which has an impact on the cost of anything that is imported.

Douglas Lumsden: I understand that there are other factors, but I am asking whether there is anything in this instrument that will increase the cost of fertiliser to our farming community.

Gillian Martin: I find it impossible to say with any certainty what it will do to the cost of anything. My officials can maybe come in and assist me, but, according to the business impact assessment that has been done on the instrument, it is about protecting businesses in the UK. There are many factors that would increase the cost of fertiliser, not least energy security issues or global impacts, but I do not see the instrument making any material difference in that respect.

The Convener: Cabinet secretary, Lucy Geoghegan keeps looking for an opportunity to come in. It is not for me to bring her in, but just in case you want to.

Lucy Geoghegan (Scottish Government): I will back up what the cabinet secretary said and clarify what is in the SI. It is about how free allocations that are given to any UK fertilising producers will be phased out gradually over a nine-year period as the UK CBAM is introduced, so that the price difference does not impact the costs that are applied to imported fertiliser. As the cabinet secretary said, whatever happens to the cost of imported fertiliser is down to the UK CBAM, which is a UK Government reserved policy area.

Douglas Lumsden: Which is not part of this SI.

Lucy Geoghegan: It is not part of this SI.

Douglas Lumsden: Okay, thank you.

Sarah Boyack: I will follow up on the question that the convener asked about the extent to which the instrument will incentivise businesses to invest now, given the changes that are going to take

place incrementally, but actually quite significantly, over the next few years. I was thinking particularly about the hydrogen sector and the discussions about grey, green and blue hydrogen. To what extent will the instrument support investment now because these changes are taking place?

Gillian Martin: I am not entirely sure that this particular instrument does anything to incentivise or otherwise. It is not really about that. As Lucy has just said, the main thing is the phasing out of the free allocations as the CBAM is brought in. If there is any incentivisation, it is about the fact that, for example, we are not disadvantaging hydrogen producers in this country in favour of importers of hydrogen that comes from more high-emitting processes. I really do not think that the SI does anything in the way of incentivisation. It really is about protecting and, as has been pointed out, giving fair notice of the CBAM implementation and the gradual phasing out of the free allocations in a way that will not put businesses at a disadvantage.

The Convener: Cabinet secretary, I note what you said about the drafting error in the instrument being a minor change. Before we move on to the next stage, if you wanted to pause and bring the instrument back next week when you have had a chance to look at it, I, as convener of the committee, would take every opportunity to allow you to do that. However, if you feel confident that it is a minor issue and you want to move the motion today, I will not stand in your way. All I am saying is that we will do what we can to help you with that minor drafting error if you request the time from us, so do not feel that you have to go to the next stage.

Gillian Martin: I will move it today because not doing so would have an implication for all four Administrations. I would like to move forward.

The Convener: Our decision on the instrument has to be made by 10 February, so we could do that next week. I have made the offer, cabinet secretary, and you have made your decision. That is fine.

Motion moved,

That the Net Zero, Energy and Transport Committee recommends that the Greenhouse Gas Emissions Trading Scheme (Amendment) Order 2026 [draft] be approved.—[*Gillian Martin*]

The Convener: Do any members want to make a contribution at this stage? Most of the debate has been had, especially about the drafting area.

As there are no comments, I assume that the cabinet secretary's summing up and response to the debate will be very limited.

Gillian Martin: I have no need to sum up.

Motion agreed to.

The Convener: Before we finish, I invite the committee to delegate authority to me as convener to approve a draft of our report on the instrument for publication. Are we all happy with that?

Members *indicated agreement.*

The Convener: I thank the cabinet secretary and her officials, and I suspend the meeting briefly to allow a changeover of witnesses.

09:31

Meeting suspended.

09:40

On resuming—

Draft Climate Change Plan

The Convener: Our fourth item of business is an evidence session on the Scottish Government's draft climate change plan, which sets out how the Government intends to meet its carbon emissions reductions targets. The committee is leading a cross-committee effort to scrutinise the draft plan, and the Government has said that it will lay the final plan before the end of March, when the Parliament goes into recess. Everyone who gives evidence today will contribute to a report that we will publish in late February, with a debate in the chamber to follow.

I welcome Claire Mack, chief executive of Scottish Renewables; Gemma Grimes, director of policy and delivery for Solar Energy UK; and Professor Matthew Hannon, professor of sustainable energy business and policy at the University of Strathclyde. Thank you for attending the meeting.

We will focus largely on how renewable energy relates to the draft climate change plan. I will ask the first question, which is always an easy one to make you feel relaxed. What are your overall views on the draft plan? Is it good? Is it bad? What is the most important thing that the Scottish Government should include in the plan? What would you like to have seen more of in the plan?

Claire, you have had the longest to settle in, so I will bring you in first.

Claire Mack (Scottish Renewables): My focus is on the energy supply element of the plan. It is recognised that that is probably the area in which we have made the greatest gains and the most progress to date. The draft plan's strength is that it sets out a vision and targets, and it details the policies and plans that are in place to support progress in that area.

We have made a number of great gains, but a key point to make is that the context has shifted significantly over time. That would be true of any long-term plan, so we must be alive to that. There is much greater focus on consumer costs, the just transition and the geopolitical shifts that have driven seismic changes in energy supply as a whole, never mind in the Scottish context. It is worth acknowledging that the context has shifted substantially, so it is quite hard to create a plan that can weather those challenges. However, that is the task at hand.

We have detailed policies and plans, but we need to be clear about how we track and measure them. In the overall plan, we have a number of quite detailed stops along the way. We have progressive targets to reduce emissions in the period from 2026 to 2045—from 57 per cent lower than baseline levels to 94 per cent lower than baseline levels—and budgets have been set in line with independent advice. I am keen to explore the piece of the puzzle relating to how we measure the detailed policies and plans. We need to know how those policies interact with each other in order to genuinely understand how they will contribute to the figures for the five-year emissions limits that are set out in the plan.

09:45

The Convener: Matthew, is it a good plan or a great plan? What is missing?

Professor Matthew Hannon (University of Strathclyde): The plan outlines the ambition. There are some pretty punchy renewables targets on onshore and offshore wind and solar photovoltaic, as well as on supporting infrastructure such as battery technology. I commend the cross-sector focus. It is not just a renewable electricity plan; it is a sector-wide and energy system plan and a consideration of the supply and the demand sides. In that sense, it meets the need to enact and accelerate a system-wide transition. I also commend the consideration of justice and a just transition throughout. There is specific mention of communities and the need to benefit and engage with them.

As ever with draft plans, there are opportunities to strengthen and tighten. For me the big issue—Claire Mack possibly alluded to this—is that we are inhabiting a very different political realm at the moment, not just regarding headlines but regarding the general public's mood on climate action and climate change. The Scottish Government's climate survey shows majority support for climate action, so we stand on a very strong bedrock. However, the UK Government's attitudes tracker reveals some subtle and quite concerning changes. In the past three years for which data is available—from 2021 to 2024—there was a 5 per cent swing among those surveyed, from considering climate change a concern to being unconcerned about it. We could argue about whether that is driving the political sphere or whether the political sphere is driving those changes in attitudes, but we are where we are.

We must consider the fact that, on average and in general, people's lives have become harder and harder over the past few years. Claire Mack alluded to the changes in energy prices, which have made the cost of living rocket. For most families, climate change is not the first thing in the inbox that they need to deal with that day, that week or even that year. We must consider that, and we need to think much more carefully about the social contract that we are presenting to the

public and how that shakes out at local, regional and national levels. Core to that is that communities—you and I and our neighbours, family and friends—feel the tangible benefits of climate action sooner rather than later, and that they understand and can connect the positive changes that they are experiencing to changes in Government policy.

I was encouraged to see the just transition measures included in the draft climate change plan. That is a really thorny issue to get into. Individually, some of the measures make more sense than others, and we can talk about that in more detail, but my overriding concern is that they are not connected as a coherent whole or system of indicators that try to track changes against three or four core tenets of justice. We need to consider what types of justice we are trying to shift the needle on and how we are connecting those to policies. There is work to be done there, and I am happy to talk more about that.

If I may, I will just add that there is a lot to say about community benefit funds and how payments from commercial or private as well as public and community-owned renewable energy developments are raised and distributed. We have done lots of work on that and have found that one of the key issues facing communities is how much is falling into their hands. The expected payment per megawatt installed has not gone up with inflation, compared to the baseline year, since the payments were introduced. Therefore, communities are missing out on that. I am happy to talk more about that later.

The Convener: I think that you will get a chance to do so later in the meeting—I would not be surprised if you did.

Gemma, what do you think of the plan?

Gemma Grimes (Solar Energy UK): We very much welcome the plan. However, it is missing solar. There are a few references to solar, but there is no outright target, objective or level of ambition.

We were hoping to see the solar vision that was developed in draft a couple of years ago, but that has not come to pass, so we really want the final climate change plan to contain a much bolder vision for the role of solar.

The Convener: Before we leave the subject, I do not know whether you have watched any of the previous evidence sessions on the climate change plan—

Gemma Grimes: No.

The Convener: Well, it will come as a surprise to you, Gemma.

This question is for all the witnesses. Let us go to page 51 of annex 3 of the climate change plan, which is the summary of the costs and benefits under the plan. In it, the Government says that there are

"no … costs to government from energy supply policies".

It will all be driven by the market, but "significant investment" will be needed. It says that there will be no benefits and no cost to Scotland from what will happen on energy supply—it is the only section of the plan in which that is the case, I think.

Based on what Matthew Hannon said, one of my concerns is that, for people to buy into the plan, they need to understand what it will cost them. As householders, Claire, what will it cost us if we buy into the plan? There are no costs and no benefits to the Government. Some of the benefits that the Government has given in other sections include benefits to the national health service from reduced treatment and so on, but, apparently, there are not even any of those benefits in this section. What are the costs?

Claire Mack: Costs come in many different forms and are spread in many different ways around the economy. I would again observe that, as we move further along the pathway with the plan, the next phase is tougher than the one that went before, because most of what we have done so far has happened behind the curtain, if you will. It has happened at systems level, with the driving factor very much being energy supply.

In the future, there will be a much heavier focus on demand, which requires investment at different levels, and there will be paybacks to these things. At the moment, I am making my own personal home investment in solar battery and a heat pump. As we move further along, we will have a bit of reliance on newer technologies such as hydrogen and carbon capture, utilisation and storage, particularly in the industrial decarbonisation space. As we move along, there will be a much heavier reliance on private sector finance and on individual household-level finance, too, which will require choices, so you are absolutely right that the benefits case needs to be crystal clear.

We have talked about changes that have gone on around us, and one of the key changes that has happened is the increase in volatility of consumer bills. Another contextual shift is about creating a stronger focus on security of supply. Where we started with the climate change plan and climate change journey was a very different place from where the imperative is now.

There are a number of unseen benefits, one of which is the health benefits that you referred to. There is also energy security, which has a direct financial benefit through being able to stabilise the

cost of energy to remove volatility. In recent years, there has been an increase in costs of around £183 billion, I think, from importing oil and gas into the UK.

The Convener: I want to drill down to the Scottish household level. If we take a house in the countryside that does not have double glazing or insulation, the household will have to transfer everything into putting in insulation, double glazing and LED lights. They will probably have to raise the floor to keep the heat in and they will have to insulate the roof. It might cost some £40,000 or £50,000. Actually, they will have no idea what this will cost them or the length of the payback period. It could be 60 years, meaning that they are investing in the next generation—rightly so, as you will say—but there is no return on that, and there is no idea of what it will cost. Is that a failure of the plan?

Claire Mack: I can tell you this from direct personal experience, because, as I said, I am on that pathway right now. The cost to me personally has been around £34,000. I have had support for some of that, and I am lucky to live in a home where I did not have to change the underfloor heating, change all the radiators or insulate.

One of the key issues is that there is a huge variation in cost and it depends on house type. I do not shy away from the fact that we have done a lot of good research in Scotland on our housing types and what the changes will cost, and that research is available to the Scottish Government because it was carried out by the Scottish Government. Costs will therefore vary depending on the house type and, as I say, mine was—

The Convener: It could be substantial.

Claire Mack: It could be substantial, and you are absolutely right that consumers need to understand what the cost and benefits are, as well as the payback period because, if they are going to change something, they need to enter into a long-term mindset. However, it is about achieving a better energy performance rating and lower operating costs for your home. My electricity costs topped £1,000 a month, which is why I am doing what I am doing, and because they are so high, I imagine that my payback period will be a lot shorter than that of the average consumer.

The Convener: That a 20-year payback period might be acceptable for you—he says, tongue in cheek—but I fear that I will be long gone by then. I might be a pessimist, but I am going on the statistics for life expectancy.

Michael Matheson (Falkirk West) (SNP): And on that happy note—

The Convener: It might be a happy note for you, Michael, but it will be less happy for me.

Matthew, did you want to come in on that?

Professor Hannon: If I understand the maths of the numbers that the Scottish Government has in the climate change plan, it is presenting a net financial benefit when the costs are traded off against the direct and indirect benefits, in which there is also the co-benefits. Its workings suggest that there is a system-wide benefit. The CCC's analysis and its backwards S-diagram present the front-loading of the costs and show how they will yield financial benefits as cuts to energy bills and the lower running costs achieved by the shift from the internal combustion engine to battery.

For me, the sensitive time is right now. The next year or two in the political and policy cycle will be a sensitive time in which the nation will have to invest up-front to generate these savings and achieve these benefits. We should not forget that we are doing this in the first place to avoid catastrophic climate change, the costs of which are unbearable and unthinkable. The science bears that out. We have to make the case, however, that the benefits will be felt as soon as possible.

It is not just about the timing of that but about who benefits and who pays, and that really comes down to justice. There needs to be a sense across Scotland, across the UK more generally and internationally that we are paying our fair share and that we are going to reap our fair share of the benefits. If we bring it right back to home, geographically, it will not work if one locality such as a small village or town is enjoying the fruits of net zero and not necessarily paying its fair share in investment, while three miles down the road we see an inverse situation. There needs to be a rebalancing at the local and national level to make sure that fairness is writ right through the system and the raft of policies. We also need to consider the likelihood of their costs and dividends because, as we know from an investment standpoint, everything carries a risk.

It is about how we articulate all this to the general public. There is a really big piece to be played in how we communicate it to the general public in a way that makes sense to them and in such a way that they feel that it will benefit them.

The Convener: Gemma Grimes, you get a chance to speak now—not to agree with the point that Michael Matheson made that it might be good news that I will not be around in 20 years, but on the costs.

10:00

Gemma Grimes: I want to go back to the points that were made about domestic energy and retrofitting, to highlight one key example. We know that the Government is very focused on

decarbonising heat, with the heat in buildings bill proposals, and there is also the Home Energy Scotland loan and grant scheme. Moreover, with the announcement last week of the UK warm homes plan, we know that there is up to £1.5 billion for use across Scotland and Wales. The details are still to be confirmed, but there is at least some money coming in this direction from the warm homes plan. It might be the start of things.

However, one challenge with the Home Energy Scotland loan scheme is that it does not apply to solar any more. It now applies primarily to heat pumps, but it has been proven that the installation of solar along with a heat pump can significantly reduce running costs by about £1,000 a year. It would be a great way of demonstrating the benefits of just transition, and of reducing the cost of energy, to the widest number of people if we could reinstate something equivalent to the Home Energy Scotland loan that enabled solar to play its part. It would also help to bring down bills immediately through on-site generation.

The Convener: Okay. I have no idea about the costs of solar—I am sure that we will find out about them shortly.

Sarah, do you want to ask a brief question before I move to Kevin Stewart?

Sarah Boyack: Yes, I have a follow-up question. I appreciate the comments that Gemma Grimes has just made; indeed, I know of constituents who were about to put in heat pumps and then, when the funding for the solar went, they stopped. It was all about joined-up thinking—it was about getting an incentive and then making that investment. That raises issues about supply chains and, potentially, jobs and confidence, so I very much agree with what you have just said.

You also mentioned the just transition. Some research out there suggests that, if people on lower incomes had solar panels, it could result in quite a significant benefit to their homes. Should we also be looking at homeowners in this respect, too, and trying to more solar in situ right across the sector, as it will be good for the economy, help the just transition and bring down climate emissions at the same time?

Gemma Grimes: Absolutely. When it comes to energy bills, the fact is that the less money you have, the bigger proportion of your income goes on the cost of energy. For those who have the least money, the ability to cut energy bills—via solar and heat pumps, for example—will make a real difference, and it has the biggest impact on those on the lowest income.

The Convener: Kevin, I think that you have some questions that you would like to ask.

Kevin Stewart (Aberdeen Central) (SNP): Thank you, convener. I want to look at whether the industry is optimistic or pessimistic at the moment and to discuss any particular barriers. In the last contracts for difference allocation round, no ScotWind projects came into play, and I know that the industry has said that rising transmission charges are undermining the economics of Scottish offshore wind projects. How do we get over that? The Scottish Government does not control transmission charges, and the carbon plan is not just Scotland based but UK based. How do we deal with that, Claire? What does the UK Government need to do? What should it be listening to in order to get this right and to provide optimism rather than the pessimism that I am hearing?

Claire Mack: You are absolutely right. Had we been talking a couple of weeks ago, I would have highlighted a recent success in allocation round 7, but you are dead right that, prior to that, it was 2022 before we had a Scottish fixed offshore wind project come through that system.

You are absolutely right to point to transmission charging as being the reason for that, because it represents a volatile and variable cost in the lifetime operation of a project. As we have talked about, our shifting the dial on energy supply is heavily reliant on private sector investment, and the transmission charging issue is right at the heart of a lack of confidence in that sector

As for the question of where industry is just now, and whether it is optimistic or pessimistic—or just pragmatic—one thing that we need to be really clear about in relation to the recent success versus the abject failure in the previous two rounds is that it was lucky. It did not happen by design.

It was lucky because the UK Government did a lot to change the parameters of the most recent auction to make the potential for Scottish projects a lot higher than it was previously by offering a Scottish clearing price. That gave us the ability to set a different price in the energy system, which ultimately tracks back into the consumer pocket, for Scottish projects. That was to alleviate the additional cost—the penalty charge—that sits against Scottish projects, even though they sit in the most abundant resource areas of our country and therefore have a rightful role in making a contribution to the future energy mix.

On what we want to do about that, one problem is that the regulation has been in place for a long time and reflects the energy system of 30 years ago, when it was set.

Kevin Stewart: Is that not one of the major problems that we have? The UK Government, the UK pricing regime and the regime as a whole are stuck in the past and do not take into account what

we need to do to reduce climate emissions. There is also a level of unfairness to communities, as Professor Hannon pointed out earlier.

Claire Mack: Exactly. We have the tenets of socioeconomic benefit and just transition but, if we cannot get projects in Scotland, we will absolutely fail on those two missions. The transmission charging issue has been talked about for a long time, and we have been trying to speak to the UK Government about how it could enact change in that system. We are continuing to speak to it about that and about how we can encourage projects in the right places at the right price at the right time, without having to create special measures in an established system to get those projects through.

Kevin Stewart: I turn to Professor Hannon in relation to optimism and pessimism, although this is not about industry; it is about communities, which he mentioned in his initial answers. Some communities have been pretty optimistic, but that optimism has disappeared when benefits have not come to fruition. One of the prime examples is Shetland, where a huge amount of work has gone on and there has been a lot of production, yet Shetlanders still face some of the highest electricity bills, so they have not seen the fruits of the likes of the Viking project. We need to turn that around, and a lot of that is down to the UK Government's pricing regime. We need to get that right for communities, do we not?

Professor Hannon: That is an important question. Over the past 10 or 15 years, a focus has emerged—not least from the Scottish Government although we will now see it replicated, certainly in relation to transmission, by the UK Government—on community benefit funds as a mechanism to try to instil optimism and hope in communities that host infrastructure or will do so in the future. There is a sense of rebalancing the costs and benefits.

The issue thus far has been that the benefits are hyper-localised. The boundaries of a community benefit fund are determined through discussions between the community and the developer, and they can be as narrow or as broad as that discussion entails in the underpinning community benefit agreement. Where the benefits are very localised, that can create the asymmetry that I mentioned, in which you have one glen where community A is a winner and another glen where community B is not.

That is being rebalanced to an extent as regional funds are starting to emerge. Last week, I gave a keynote speech in Cumnock as part of the 9CC Group's inaugural conference. The group's role is to bring nine community councils together, along with the community benefit funds that they hold, to make more regional, strategic and larger-scale investments. That can then start to create a sense that, as a region, those communities are in it together and that, although they are hosting infrastructure—in their case, it is predominantly onshore wind—they are all recouping some of the benefit.

There are two further points to make—well, there are many, but I will begin with two. One is about who controls that money and decides how it is spent. That is associated with trying to track and understand those costs, which is important for understanding the impact. Another is about the amount of money that the developer then shares.

I will finish with the point that the really big question underpinning community benefit is who owns the land and who owns the asset. Although the predominant model is one of commercial ownership of land and commercial ownership of assets, such as onshore wind, with predetermined donations to communities, where there is community ownership, or in some cases such as the Quanterness wind farm in Orkney, public ownership, we see donations being made at a much larger scale. Studies have pointed to that. The committee has probably heard of the one from Aquaterra Energy, and a recent study commissioned from Platform London points to the dividends coming back to the community being somewhere between 10 and 100 times the amount from commercial donations.

When it comes to optimism from communities, the big question in terms of how much is coming back is who owns the asset and the land that it is installed on.

Kevin Stewart: Ms Grimes—pessimism or optimism?

Gemma Grimes: Optimism, in that we should continue to see more and more ground-mount and rooftop renewables projects out there, and we should therefore see benefits accruing from those. There is greater emphasis across all the nations of the UK on community benefit, and on renewed discussion around shared ownership and community ownership. There is a place for them all; one size does not fit all.

I take Matthew Hannon's point about community, but wholly community-owned projects tend to be relatively small comparatively. We cannot do everything solely by community projects, so we need a combination of everything.

Kevin Stewart: I want to look at other benefits in relation to the transition, particularly for the north-east of Scotland. Obviously, we do not want to see a cliff edge for the oil and gas sector, because that sector ceasing would inevitably play badly when it comes to finding the right skills for the transition to take place, but, equally, we want new skills to be developed. The convener and I

were in Aberdeen last Monday and went to the energy skills hub, where we saw apprentice welders, and I believe that one of the courses there is being sponsored by Ocean Winds. That is an obvious benefit. How do we get the benefits out of the new skills that are required? How do we ensure that we do not lose the oil and gas industry too early, so that we can use those folks' skills in our energy future?

Claire Mack: We have been on the record recently with my colleague Dave Whitehouse at Offshore Energies UK pointing to the man-made harm that comes from certain policies, one of which is transmission charging, which you have already alighted on; another is the energy profits levy, which is fast tracking the decline of the oil and gas sector.

We have highlighted that there a need not just for the deployment of renewables—we have seen some stutters in the pipeline there—but for the managed decline of our basin and operation, because it does not just sit in the north-east. I hail from Falkirk, and Grangemouth is a critical facility in this, as is Sullom Voe in Shetland. Across the country, there are key facilities, workforces and skills that we need to protect as assets to ensure that they can contribute to the just and energy transitions. That is very important. I am glad that you had the opportunity to visit the energy transition zone supported facility—the skills hub—because it forms one of the major benefits that come alongside the energy transition.

10:15

One of the other elements to this, which is worth highlighting, is that last week's AR7 auction was accompanied by an additional funding pot. All the developers have been asked to make contributions through a clean industry bonus, with a ratio of £1 of public sector money to £17 of private sector money. That is designed to create more strength in manufacturing supply chains in the UK, as well as to contribute towards skills and upskilling the workforce, in recognition that those aspects form a key part of our critical competitive advantage in energy, which sits largely here in Scotland as part of the UK.

Kevin Stewart: Some folk out there will be surprised to hear you say that you want to see the demise of the energy profits levy. However, all this is interlinked, is it not?

Claire Mack: Yes.

Kevin Stewart: If we do not get it right for the future of the oil and gas industry, we will fail to get the right skill sets for our renewables future, will we not?

Claire Mack: If you look at it from a purely climate perspective, yes, that would be an odd thing to say, but I am looking at it through an economic perspective. Scottish Renewables is a trade association, and I am here to support my industry and recognise that we have a key dependency alongside the oil and gas sector. Any policy—whether it is transmission charging or the EPL—that is causing detriment and damage to industries that support economic growth and workers in this country must be examined more closely to understand its impact.

Kevin Stewart: Thank you.

Professor Hannon, you used the phrase "a coherent whole". In order to get our future right, we have to be coherent and look holistically at all this. Your focus in some of your answers has been about communities. If we do not get the change right and deliver a just transition, that will have a major impact on communities across Scotland, particularly our poorest communities, will it not?

Professor Hannon: Absolutely—I could not agree more. We have to strike a balance. We need a national-level coherent plan that bakes in justice and a just transition at its heart to ensure that, at a top-down level, those communities will not be left behind. However, the plan also needs to be flexible enough to understand the essence and characteristics of communities, their history, strengths and where they require investment. This is where community action plans and local place plans—those types of place-based and place-specific planning—are so important for drawing down the principles that are laid out in the climate change plan and other white papers surrounding it. Things need to be tailored to individual communities because, otherwise, something gets totally lost. If you travel from one constituency to the next, and even just from one village or town within that constituency to another, there is a very different context. We need to be flexible enough to consider that.

I will give you one example from the community benefit funds. A community has significant control—ideally, it would be complete control—over how those funds are spent and those can be aligned with its principles.

If I return to skills and my example of the 9CC Group operating in Cumnock and Doon Valley, it is looking to invest in apprenticeships. There is a real opportunity there through several low-carbon and circular economy companies, such as the Emergency One Group and Egger. Those companies can upskill employees in situ, which means that they retain them in that rural community. The climate change plan and the just transition policies that it contains must ensure that

we keep such communities intact and help them grow and evolve.

Kevin Stewart: Thank you. Mr Grimes, what is the industry doing to invest in the skills aspects of solar? How are you capturing skills that might already exist in some places?

Gemma Grimes: Currently, around 800 full-time equivalents work in solar and storage in Scotland. We expect that number to increase to around 11,000 by 2030 or 2035, depending on when we reach 6 to 9 gigawatts of solar capacity. In order to do that, we need a significant increase in the workforce and the number of available training places.

We have many skills challenges. A skills workforce has been set up for the deployment that we are currently doing, but if we are to upscale—we need to do that to achieve, as we talked about, the cost reduction benefits for grid-scale energy as well as domestic and commercial uses—we need to train more electricians and increase the number of grid connection engineers and high-voltage technicians. Construction workers are also needed more widely, and welders are needed in the solar sector.

Outside the oil and gas industry, a just transition requires enabling people who come out of schools in rural communities, where we might site projects, to consider the renewable energy industry as a job opportunity. We need to ensure that there are not only apprenticeships and college courses but practical on-the-ground work experience opportunities. That seems to be a tight pinchpoint at the moment: people come through the system to train as electricians, for example, but they are not able to get work experience. The industry—not only renewable energy but wider built environment sectors—should collaborate on training people, because we need many more electrical specialists, but we also need built environment specialists more generally.

Kevin Stewart: Thank you. Perhaps the industry needs to consider doing what Ocean Winds has done in Aberdeen.

Michael Matheson: This is a question for Claire Mack. You mentioned transmission network use of system charges and the drag that that they create on the industry, particularly for Scotland-based projects, which can clearly have a significant economic impact on Scotland. I was not clear from your answer what exactly Scottish Renewables wants the UK Government to change and what that would need to look like in order for it to work for the industry in Scotland.

Claire Mack: To take you back to the outcome of the AR7 auction, we saw one fixed-bottom site, Berwick Bank, connecting into one of the two lowest TNUOS zones in the country. When I said that offshore wind projects were lucky, that is why. There was a set of circumstances that cannot now be replicated.

We also recognised that other projects in the north of the country, such as West of Orkney wind farm, said that they did not bid in the auction because they could not make the project economics work. That is the nature of the problem and what we want the UK Government to look at. We need to reduce the volatility of those unpredictable charges, but we also need to reduce their level. There are different ways to approach that. We could create a standardised cost across the whole country.

The charges are climbing for lots of reasons. One relates to the way in which the energy system has evolved, with certain bottlenecks and constraints in the system creating costs. That is a feature of our having created supply ahead of demand. We can discuss whether that was the right way to do things. It probably was, because the last thing that we want is to end up with a pinch point and to not have enough energy to go around the country. Some constraints have led to costs at this point in time, but those costs will be alleviated by building further transmission infrastructure.

We are creating a wholesale change in the energy system. That is at the heart of where the costs come from. The change will allow us to take back control of our energy costs and to do self-generation at a micro level, as we have talked about, and at a macro or country level. That will create more security in our energy system and allow us to feel confident in that security.

As I said, the costs could be treated in different ways, but one thing is certain: at the moment, the costs are too high and too volatile for projects to be financeable. Transmission costs get baked into the project cost, which makes those projects non-competitive when we get to the CFD level. That is evidenced by the fact that some projects are not bidding in what is an excellent system. The CFD system has generated £60 billion of private sector investment since its inception. That money should, rightly, sit within the economies of Scotland and the rest of the UK.

Michael Matheson: Do you have a preference for the model that should be adopted?

Claire Mack: We are working with the industry and have been speaking to the UK Government about a set of principles. At this point, it is hard to see a transmission charging regime that would take us from today, where we are building an exceptional level of infrastructure, all the way through to the point at which we had an operational system and had built most of the infrastructure that we would need, including subsea cables and

reinforced overhead lines. However, we have put together a set of principles relating to predictability, projects being investable and prices being kept level for the industry.

Michael Matheson: That issue with renewables in Scotland is not new; it has been kicking about for the best part of two decades. Why has the position not changed?

Claire Mack: Part of the issue is that any regulatory change comes with disbenefits and costs, because it brings disruption. At the heart of the conversation with the industry has been the question of how we could make a wholesale change in the regulatory and financing system work. We are also in the middle of a transition, so the country still has an energy mix, and there is the question of when we start switching over.

We have now reached the point at which the costs will become a barrier to moving forward on the energy transition journey, so it is time for us to think about the measures that we want to put in place either for an interim period or to provide a signal all the way through. Energy is a long-term game. We are expecting our developers to make investments in projects for 20 to 30 years, so we need to provide regulatory certainty by having a clear view of how we see the energy system evolving. The UK Government has the ability to direct the UK regulator in order for that to happen, but I guess that that has not happened.

Michael Matheson: Are you confident that it will happen any time soon?

Claire Mack: I am confident that we are having all the right conversations—

Michael Matheson: Conversations are great, but will they lead to an outcome?

Claire Mack: In relation to the AR7 auction round, the fact that a remedial measure was introduced to mitigate transmission costs tells me that somebody in the Department for Energy Security and Net Zero in the UK Government recognises that there is a problem. I cannot be critical of that department, because it worked very hard with us and the sector to ensure that Scotland could get a fair bite of the cherry in AR7.

Michael Matheson: Yes, well, recognition and doing something are two different things.

Claire Mack: Yes.

The Convener: We are only at the end of question 2 and there are 20 questions. We are about 40 minutes into the session, so it could be a long one. I hate cutting people off and I hate telling them that time is short. I am not going to cut him off, but I will tell him that time is short. Mark Ruskell, the next questions lie with you.

10:30

Mark Ruskell (Mid Scotland and Fife) (Green): I will pick up the pace, convener.

The Convener: Perfect.

Mark Ruskell: Let us turn to the National Energy System Operator's strategic spatial energy plan. Does the industry welcome that? Is it pitched at the right level? What involvement have you had in developing that?

I ask only Claire Mack and Gemma Grimes to answer that question, unless Professor Hannon definitely wants to come in.

Claire Mack: NESO is a necessary entity in the modern age and our more strategically planned energy system. The journey over the past few years has shown us why we need a more strategically planned energy system and that we cannot rely on the volatile fossil fuel market to deliver what we need for consumers and to deliver the energy transition. The strategic approach gives strong signalling to the private investor market, which is a critical delivery partner in all of this. As a sector, we are therefore pleased to see NESO.

However, we need to be more circumspect in thinking through Scotland's role in any strategic spatial energy plan. We have a number of different energy pathways and lots of different ways to reach net zero, including lots of different ways to power this country. Scotland has a unique set of gifts that it can offer to the energy system, one of which is an abundance of onshore and offshore wind power, as well as having key strengths in solar in certain geographies. We also have hydro power, which is pretty unique to the Scottish landscape and which has a strong part to play in the energy system, as well as contributing to reducing costs by providing large-scale and long-duration storage.

These different energy pathways mean that many choices could be made, and we have to be clear that some pathways will include the technologies that we excel at here, in Scotland, and some will not. It is absolutely critical to ensure that our voices are heard at the table, and I want to be very clear that we need to be clear-sighted on what the governance of NESO looks like in the Scottish context and where and how our voice gets heard at that table. From conversations that I have had with the Scottish Government, I understand that it is very much a soft power. The analysis that goes into these different pathways could be critical to our future economic growth and success, so it is an important issue that needs careful consideration.

Mark Ruskell: Is the level of detail in the strategic spatial energy plan appropriate? The national planning framework is still waiting for the

energy strategy and we have council development plans. I have sensed a concern within the industry about planning to the nth degree and going down the route that Wales went down some years ago with technical advice note 8 designing exactly where wind farms should be. Is there an appropriate level of strategic guidance in the spatial energy plan and does it give the industry comfort and confidence? Also, does it give communities an element of knowledge about where energy development is likely to be and the extent of it, without saying, "It's going to be this wind farm and it's going to be over there"?

Claire Mack: You are absolutely right that we probably would not want the strategic spatial energy plan to go into that level of detail. It needs to be viewed alongside some of the other policy instruments that are in play, one of which is connections reform, which is a step change. I have to be clear that we have done a lot of great work on policy in the energy space in a short period of time, and it has been exhausting for anybody who is involved in the sector.

Connections reform is helping to create a filter along with the strategic spatial energy plan, which will limit the level of development that might go on in this country, particularly in Scotland. The connections reform plan and activity are designed so that whatever sits on top of what is a valuable grid connection is necessary and ready to connect, so that we can manage the energy transition instead of just taking forward a clutch of projects and realising that we do not have the storage to make them work, or that we are now creating constraint costs because we have added so much generation without adding storage in tandem in order to manage it.

On top of that, to give confidence to people in different communities and locales, we have local planning, which is designed to be a robust mechanism to ensure that the right things are built in the right places.

With those three different mechanisms, there is a limitation on what gets built.

In Scotland, through the ScotWind leasing programme, we have created a number of absolutely exceptional floating offshore wind projects. That is a newer technology, so it is a more expensive technology. We need to think really hard about this, and, whichever approach is taken to whichever pathway, we must be clear and up front about the cost-reduction pathway for things such as floating offshore wind—because it is not just about creating that technology but what that technology creates, which is supply chain benefits. That is our opportunity to reindustrialise manufacturing in parts of Scotland and the UK, particularly in north-east Scotland, which is strong in terms of supply chain companies with offshore and subsea expertise.

Mark Ruskell: Gemma, do you want to add anything on the back of that?

Gemma Grimes: On your question about how granular it will be, it is very hard to tell at the moment. We are not that far progressed through the process and, to be frank, the information that we are getting from NESO is not of the detail that our industry feels that we need in order to give useful commentary back to NESO.

Mark Ruskell: Is solar in it? Will solar feature?

Gemma Grimes: Yes, solar is in there, based on the clean power 2030 action plan, which was published at the end of 2024, but we do not know the details of how solar is playing out in the modelling or, indeed, how any technology necessarily plays out in the modelling that is gradually being whittled down by NESO.

A key concern about visibility—meaning visibility for everyone—is that only one plan or pathway will be consulted on, which we feel narrows down the focus too soon. We need to see some options and must be able to interrogate those options before we consider a preferred approach.

Going back to the balance between Scottish Government scrutiny and NESO's authority in this, we are concerned that so much authority and, to be honest, so much pressure is being placed on NESO at the moment to do so many things. There is strategic energy planning, of which the strategic spatial energy plan is a part; there is the connection reform process; and there is wider network reform. We are all trying to grapple with so much stuff, and NESO is having to take the bulk of it. We do not have confidence that NESO is able to be as clear and communicative as we need it to be to enable us to understand the options that are in front of us.

Mark Ruskell: Matthew, do you want to add anything?

Professor Hannon: No.

Mark Ruskell: Let us turn now to the consenting process. We are talking about projects of more than 50MW, which means the involvement of the energy consents unit. I am aware that the ECU has increased its staff capacity, and there was a commitment to reduce the time that it takes to make judgments on consents. Has that had an impact? Are there still significant delays for projects of more than 50MW, or are there signs of the system picking up while, at the same time, maintaining the important involvement of communities and stakeholders in contributing to evidence taking?

Claire Mack: One of the great things about the energy consents unit is that it is a specialised resource. I am not taking anything away from the role of local authorities, but we have to be realistic and recognise that a lot is being asked of them in constrained times, particularly due to the acceleration in pace of the roll-out of renewables. We must be clear that the investment—there has been an investment—in the additional specialist resource of the ECU is welcome. We all recognise that it is a specialism and therefore will take time to develop and grow, as well as that we are also grappling with relatively unusual and different situations in consenting larger projects and associated infrastructure. There is huge dependency on the transmission infrastructure, such as new substations and overhead lines, which are all connected parts of a jigsaw. That would be my only observation.

We have had good interaction. I am the chair of the Scottish offshore wind energy council, and Gillian Martin, the Cabinet Secretary for Climate Action and Energy, is the co-chair. As Adam Morrison probably would have talked about had he been here today, the transmission infrastructure upgrade that is required to facilitate the offshore projects is unprecedented. I know that that word is used a lot, but it is, and it is also an incredible investment programme, with £22 billion-worth of investment that is, today, creating jobs and providing skills investment at an exceptional level. Our support for that is really important.

With planning, the devil is always in the detail. We have a strong framework in national planning framework 4, and we have real strength in things such as the ECU and being able to have that process. Through various sectoral plans and deals, we have tried to add certainty on timelines. That is what industry has always asked for, and it has come forth, through the 52-week decision-making period for section 36 applications.

Again, the policy is there, but it is about the execution. For example, we are starting to hear about cases in which one year could turn into two, depending on things such as requests for additional information rather than supplementary information—I said that it is about the detail—and whether that subsequently triggers a rework of a public inquiry, which could then extend the timelines. The problem is that, with every extension of the timeline for grid infrastructure, you push the projects back even further. Being able to monitor and track how that is all happening as a whole is complex, but it would be helpful in understanding how planning is enabling the energy transition.

Mark Ruskell: Is the 50MW threshold for the use of section 36 too high or too low?

Claire Mack: That is an interesting question, and it is something that Matt Hannon will probably have more to say on. Reaching 50MW is now an awful lot easier, because the technology has changed. That means that we are now asking a lot of local authorities, given the requirement for more specialism and more resource in general, as well as the ability to understand wider impacts, such as the environmental impacts and socioeconomic benefits of some sites.

The threshold is under consultation at the moment, and we will add our response to that. I understand the reason for the proposal to increase it, and I understand that things move on and need to change. We also need to be very clear-sighted about what that change will require of the system that sits below it—that is, the local authority planning system.

Professor Hannon: I do not profess to be all over the detail of the consultation, which came out at the close of last week. However, the general principle of translating some of the responsibility from national to local authority level strikes me as a potentially more democratic approach, at least in the place-based context. That might start to create a sense among communities—certainly if they have voted for the local authority representatives and feel greater representation at the local to regional level—that they have more agency in relation to the decisions.

However, that cuts against some of the realities. One issue is how well resourced local authorities will be to deal with the additional time and resource pressure on them. Obviously, dealing with the consenting process will be very complex.

Stepping back to the point about NESO, I think that, if you are planning for a low-carbon electricity system, and you are doing so by connecting supply to storage to demand, there needs to be a strong system architecture. If you let it all unfold organically and evolve without any degree of system architecture, you might not end up with the system that you need not only to deliver on your carbon reduction targets, but to keep the lights on and to ensure that energy is affordable.

10:45

So, we end up in a kind of tricky position. We want to provide communities, local authorities and the representatives who lead them with the ability to make decisions about what happens on their patch, but at the same time, what happens on their patch has a knock-on effect on the grid, on stability, on resilience and on affordability. We need to find a balance between the two aspects, and we cannot assume that having the pendulum swing from one side to the other is going to be the fix.

Mark Ruskell: Okay. Gemma?

Gemma Grimes: Just to pick up on the points that Matthew Hannon has just made, I think that that is where it is intended that the strategic spatial energy plan, along with the regional energy strategy plans and local plan making, will help. However, a huge issue is the lack of resources and training. As with the TNUOS discussions, there are some things in this industry that keep on giving, and the lack of resourcing in local authorities is one of them. I would include statutory consultees in that, too, to be honest—there could always be more resource and more expertise.

Mark Ruskell: Coming back to the climate change plan and the assumptions in it on the roll-out of renewables and the electrification of society in the years leading up to 2045, do you think that the architecture of consenting processes, responsibilities over transmission charging and so on align with the CCP? Are the assumptions in the CCP solid, based on our current planning and consenting architecture, or are there any challenges coming up? Are the assumptions around how much generation capacity we can bring in over the next 10 or 15 years going to stand up, given our situation right now with markets, planning and the rest of it?

Claire Mack: You have alighted upon one of the key points that I was hoping to make. Something that needs to be uncovered with regard to the issue of the stops along the way as we get from emissions that are 57 per cent lower than baseline levels down to emissions that are 94 per cent lower is the question of what will do the heavy lifting at each of those stages. I just do not think that is clear. Also, what will enable that heavy lifting to take place? We will have to be hard on ourselves when we look at whether the policies that are outlined in the plan are doing what they need to do. Are they efficient? Are they effective? Are we tracking them, and are we able to track them?

The other thing that the plan is possibly missing is a list of key dependencies. There is a reliance on new technology, on private sector investment, on the relationship with the UK Government and on the relationship with local authorities, and none of that has been quantified, as far as I can see. I know that that is hard to do, but the plan does not even acknowledge that a number of key players and a number of key activities and actions—and assumptions, as you have said—sit within it that probably could do with being uncovered in a bit more detail.

Mark Ruskell: One example of that is onshore wind. We are meant to be rolling out 1GW of new capacity each year to get to the target, and I think that that has been incorporated in the climate change plan. Are we on track for that?

Claire Mack: Again, it comes down to a number of key assumptions. Yes, we have the number of projects that we need; in fact, we have more projects than we need, and that is where connections reform and other such things will come in. However, are they deliverable? Are they deploying? That is something that we need to keep a really close weather eye on.

We now have this key link. For the first time, we had, with the CFD mechanism at UK Government level, some real analysis of what we needed to get through in order to stay on track for 2030, and there are similar mechanisms in Scotland that are within devolved control that we, too, should be using to try to track things. For example, are we giving consent to enough projects to go into CFDs at the right pace and at the right level?

Another great, and nearer-term, opportunity here in Scotland is repowering, but it will need a particular style of management. It will not be the same as what we have done before. It is about having fewer but taller turbines, but a complete rework of some sites will be needed in order to optimise that.

We know more than we did before, and our technology is better. However, the question is whether our planning system is geared up to enable the replacement of sites that go offline. It is not just about building new sites; it is about ensuring that we maintain the static base, because we are adding to it.

Professor Hannon: The purpose, or at least the focus, of the climate change plan is about laying out the broad-brush direction of travel, the emissions reductions that are associated with that and some of the costs, and then pointing to some of the mechanisms that will be able to deliver that. I agree entirely with Claire Mack. The boffins and the wonks out there want to get into some of the detail, such as the quantification of what a policy will cost and what it will deliver in terms of carbon reductions and broader co-benefits or indirect benefits to Scotland more generally. I assume that that is coming down the line.

A wider observation is that, obviously, this process is happening just before the next parliamentary election, and there is a question about the extent to which the climate change plan will be followed through after that. If any time is lost, that will naturally raise concerns about meeting our legislated-for carbon reduction targets. We want to see the detail on how the policies will be enacted, although I assume that that will not happen for a time. Certainly, we will have to wait for the dust to settle on the electoral results. That raises a concern about timing generally, and we have no time to spare.

Gemma Grimes: It is possible to meet the targets in ways that are perhaps faster than has traditionally happened. There is no clear focus on the role of solar and batteries in the climate change plan. Lots of battery storage has already been installed, and there is a lot in the pipeline. However, batteries have a role in addressing the curtailment issue, and we are talking to NESO, DESNZ and the Scottish Government about the fact that having a lot of batteries in Scotland is not a bad thing and is a great way of trying to address the constraint issue. Further, batteries tend not to take as long in the planning process, for various reasons.

There is potential to co-locate solar with wind, which is something that the Scottish and UK Governments and NESO need to think about a lot more. In theory, solar and wind use the same connections and are generating at different times. If you use battery as well, additional power that is not needed at any given point can be stored. That is a great way of using the infrastructure that we already have more efficiently. However, because of the way in which NESO, distribution network operators, transmission operators and so on think about these things, they see it all as additional capacity that needs more wires, but that is just simply not how it needs to work.

Now that we have basically decarbonised much of the grid—although, obviously, we are still not there, as everyone is demanding more energy—the built environment and transport will be huge areas of decarbonisation in the next phase, and things will get harder. There could be a much greater focus in the plan on not only the things that are defined as clean heat by Government, but expanding that to on-site generation, so that we can bring down the costs of heating. We can take pressure off the existing grid by powering lighting and cooking and so on, and not just heat.

Solar has a huge role to play in the built environment and in charging electric vehicles—a heat pump will not charge your EV. If you have solar, battery and a heat pump, you basically have your own little power station, but that is not acknowledged in the plan, even though there is huge potential in that approach.

Mark Ruskell: We need something that speaks to householders about what they can do to cut their bills and their carbon emissions.

Gemma Grimes: Yes—and about the benefits for them.

Mark Ruskell: Thank you.

The Convener: I have a specific question for Claire Mack about a comment that she made. Everyone probably agrees that, if we are to get the public to sign up to the plan, they need to be invested in it, and we need to move at pace, as Matthew Hannon said, because there is no time to spare.

We talked briefly about the ECU. In previous days, you were able to submit an objection to the ECU by email, but the information was never published because there was never time to publish it, so members of the public never knew whether their views had been taken into account. We now have an online portal, and I am never quite sure whether the information on it will be published. The timescales for objecting to consents are particularly short, which affects people who want to object, because they might not have time to look at the massive documents that are submitted in support of some projects. Do you reckon that that is fair for the people who have to put up with the infrastructure?

Claire Mack: We inhabit a different world now. My previous career was in communications, and things now move a lot more quickly than previously in relation to community involvement and people being able to avail themselves of information and facts. Given that we do not use letters any more—we use email—there probably is a case for expediting some systems.

We need to get our heads around the need to focus our efforts on responding to genuine concerns. When I speak to my members, I hear a lot about objections that have been generated by artificial intelligence. Those objections might well reflect the views of the communities, but, before we get to that point, I hope that—I do not just hope; I know and have seen this—my members will have been out with boots on the ground, standing in town halls, village halls and everywhere else, explaining themselves to the people who would have the projects sitting on their doorsteps.

The sector is changing rapidly and there are different characters and players in it. You will see a different approach from Ocean Winds, for example, as it resources up and deliberately puts itself out into communities when it is investing in assets there. In other parts of the system, asset managers are quite prevalent in relation to battery storage, for example, because that relates to the changing shape of land use. These things can be used in different ways, and people engage in different ways.

The key message to our members is that they should engage early and often, and they should have a clear set of answers to questions such as, “When will this reduce our bills?” “What does this mean for our energy system?” “Why are we having to do this?” and “How will this impact us in the long term?”

The Convener: In most cases, your members are probably quite good at that. However, as a

surveyor, with planning being one of my core activities, I find it difficult to read through all the documents. I know how much aggravation such issues cause constituents and that the high-handed approach of some of the transmission companies that build the lines really annoys constituents on the ground. I will hold up my hands and say that I have been at the sharp end of somebody saying, “Do this or you will get a compulsory purchase order served on you.” I do not think that that represents negotiation.

On that note, I will pause the meeting until 11:05 to allow people to stretch their legs. We are on question 7 of 20, and we have 40 minutes left—you can try to work out what that means if you want to.

10:59

Meeting suspended.

11:05

On resuming—

The Convener: Welcome back. We will move on to the next set of questions, which will be asked by Douglas Lumsden.

Douglas Lumsden: We have touched on this issue already. What are your views on the allocation round 7 results for offshore wind, which came out last week? Let us start with Claire.

Claire Mack: As I said, I am really pleased with those results, but I am worried that they are not replicable, because of the transmission charging regime.

We got two exceptional projects out of AR7. The Pentland project, which is a floating offshore wind project, and Berwick Bank bring pretty unique characteristics to the Scottish energy market, from the point of view not only of investment, but players and economic activity.

Berwick Bank is undoubtedly a challenging project, because of its size and its location. It will quickly make us aware of how effective our strategic approaches to managing the environmental impacts of larger-scale commercial projects are.

The project has been split into two. It was successful partly because of where it connects to the grid and how that affects transmission charging. That was a key tailwind, which is not replicable. Another strength of Berwick Bank is the involvement of SSE Renewables, which has already delivered a significant number of offshore wind turbines in Scotland. The company has a good understanding of ground conditions, of supply chain management and of the technology in general and how it operates and is maintained. We were very lucky in that that contributed to a keenness of price in the AR7 auction.

With the Pentland project, it is great to have something that will be critical in stepping us up in the floating market, which we need to make the most of in Scotland. We have exceptional strength in the diversity of projects in the ScotWind portfolio, which gives us a credible scale-up pathway. It is essential that we have a scale-up pathway, because we want supply chain work to be delivered and our workforce to be deployed on energy projects. If we make the most of what we have set in place in the ScotWind leasing round and put that into deployment, we stand to be able to grow our supply chain and manufacturing strength, which we are desperate to secure as a result of the energy transition.

Douglas Lumsden: Floating offshore energy has huge potential, but the CFD cost of floating offshore wind is almost three times higher than the wholesale price of electricity. How do we get the cost of energy from floating offshore wind down to a point at which it is not more expensive than other forms of electricity, so that we can rely on it more? Is the issue all about the supply chain? Is it simply a matter of trying to industrialise the process? How do we get to a point at which energy from floating offshore wind is much cheaper? Given its present price point, we cannot deploy it too much, because that will result in everyone’s electricity bills increasing.

Claire Mack: That is an absolutely fair point, which shows a good understanding of how the CFD process works. That process has been really successful in providing certainty and investability for projects. It has done that very successfully for fixed-bottom developments, although, in relation to such developments, it can be argued that we probably did not gather along the way the supply chain benefits that we wanted to. What we got was a rapidly reducing price, which was exceptional.

With floating, we are hoping to do things slightly differently. We hope to create a staged scale pathway to floating projects in order to make sure that they can deliver supply chain benefits. To be clear, if we want additional things to come with projects that come through the CFD, they probably will come with additional costs alongside them, but that is what the CFD is there to manage, which it does in lots of different ways. For example, by creating certainty and investability, you reduce the cost of capital, which is one of the key components of cost in our current energy sector because of the reliance on private sector investment. You are absolutely spot on when you mention getting more clarity on which technology choices we are using and making them as cheap as possible through dealing with the TNUOS issue, which is a

particular issue for floating projects because they sit further offshore.

A lot of new plans are coming together around things such as offshore generation and transmission hubs, which may well add costs in terms of innovation but will create a better overall system for us to enable in the future. However, stripping out costs along the way through creating a credible project pipeline of scaling up floating projects as we go is one of the key ways to do this work.

Douglas Lumsden: How much work are your members doing to move forward and innovate to reduce those costs as much as possible? Are more CFDs required in the short term to decrease that cost in the long term?

Claire Mack: Again, there are multiple factors at play here. I mentioned the clean industry bonus, which is a pot of money that is sitting alongside the CFD and is contributed to largely by developers who are successful through CFD bids but also by Government. Part of that will fund onshore UK manufacturing, which will come with a level of cost reduction within it, because we will be able to exploit economies of scale and scope. That is really important.

The other programme that I would point to is the FLOWEX programme. It has a few new missions: one is to look at cost reduction and another is to look at innovation in terms of the technology to try to fast-track those pathways. We recognise the need, if we are going to rely on floating projects for their cost reduction pathway, to be as rapid as possible but not to lose the key component parts that we want, which are to embed the supply chain and manufacturing here in the UK, as we go.

Douglas Lumsden: Can Great British Energy play a part in reducing the cost of floating offshore wind in the long term?

Claire Mack: I think that everybody across the sector has a role in all of this. GB Energy has multiple different functions and it sits alongside other entities such as the national wealth fund and the Scottish National Investment Bank, which has made clear investments in, for example, the Pentland project, which is great to see. When such entities are involved as shareholders, not just stakeholders, they have a hand in how those projects are deployed and how we derive more of the benefits as we go along the project pathway.

Douglas Lumsden: Matthew, for how long will we need CFDs? When will we get into a position where projects can stand up on their own two feet? Oil and gas do not have CFDs. They have to produce what will make money at the end of the day. They are not guaranteed a price for each barrel of oil, for example. When will renewables be in the same situation?

Professor Hannon: Claire's point about certainty of price is the key. Depending on the strike price and then the wholesale price of the market, you will see these technologies either paying back or being paid to meet that strike price. I do not think that it is fair to frame the CFD in the round as a subsidy for all technologies. Sometimes they might be topping up, but sometimes they will be drawing back. That is really the way to think of it.

We know, anecdotally, and I am sure that you have also had witnesses saying it—Claire has said as much—that certainty is everything and that it builds confidence and investment. We need to be clear that the CFD prices for different technologies reflect their maturity. You made a point to Claire a moment ago about floating wind having a higher CFD strike price. That is absolutely correct, but the question is why that is so. For a start, it is a less mature technology. If we believe that there is a place for it in the energy system of the future—which is a whole separate discussion that I am willing to get into if need be and time permits—we need to invest in it to bring those costs down for all the reasons that Claire mentioned.

11:15

In time—by which I mean the next allocation round or the one after that—we should see strike prices falling. However, floating wind technology has not been in the marketplace for as long as ground-piled offshore wind, and it should not be standing shoulder to shoulder and competing with it on pure cost terms, if we want to grow and blood that market.

That said—and I might add that this holds for many other immature technologies and growing industries, not just energy—we need to ask ourselves, "Where is the UK's domestic content associated with this? Is this going to feed back into Scotland plc and tax returns? Is this something that we have a stake in? Will it generate manufacturing, fabrication and installation jobs?" Those are all legitimate questions to ask when thinking back to your original question, which was about why we are investing at such a heavy premium against this technology, and to which I think that I have given you the answers.

Douglas Lumsden: When it comes to floating offshore wind, what should we be aiming to manufacture in this country? Should we be thinking, say, "Let's not touch the motors—we can get them in"? Perhaps we should be focusing on some of the stuff that we already do for oil and gas—for example, the moorings and everything

else. Should we try to go after everything, or should we be more focused?

Professor Hannon: That is a very good question, and one that we have been asking ourselves for a long time.

We are where we are. There are manufacturers providing these technologies and component parts at a cost that can be delivered against the strike prices. If we had to establish, from a standing start, entire new aspects of that supply chain, that would take time and would likely incur significant cost.

However, I want to come back to the thrust of your point, which is that we should be manufacturing wherever possible, and we should be looking to understand exactly where we can add value to the supply chain and where we can grab domestic content. In that respect, I want to make a broader point about the geopolitical challenges and shocks of Russia's invasion of Ukraine, the impact on oil and gas prices and our reliance on imports. I am concerned more generally about the geopolitical issues and our being so reliant on non-domestic supply chains, but we are where we are. We want to provide our consumers with value for money, and we want to buy the cheapest, best-quality components to deliver these projects as quickly as possible.

Again, we are in an imperfect situation, but where domestic content can be invested in and grown, I would strongly commend such an approach.

Douglas Lumsden: So, thinking about this—and staying with you, Matthew—I have to wonder how we get everyone's electricity bills down in the next five to 10 years. What do we need to do?

Professor Hannon: If we are looking at domestic supply—and your average voter is thinking about their dual-fuel energy bills—what will probably happen when we electrify is that, in the round, our electricity bills will go up, but our gas bills and the fuel bills for our vehicles will go down. The hope is that, with an electrified world, we will drive our cars or heat our homes in a more efficient way, and that will bring costs down. However, a lot of that is bound up with many of the market and wholesale cost issues that we have already talked through.

How do we do this? Really, it is all about getting affordable electrification technologies into people's homes and, at the heart of it, that is all about economies of scale. I think that the UK Government's warm homes plan is a real change in tack from the previous Government, because what it is about—and I am not, I might add, suggesting that it is 100 per cent correct—is moving and shifting away from a fabric-first approach using loft and wall insulation, double glazing and so on towards electrification, or getting heat pumps and batteries into people's homes. I should also mention rooftop solar; I think that, by 2030, the UK Government is looking to get that into three times as many homes across the UK as currently have it.

Such an approach will really supercharge those supply chains and start, I hope, to bring down the costs of those electrification technologies. You can say the same about electric vehicles, and lower bills should then follow from that. That is the theory, and I think that we are starting to see it unfold, but we are still in the very early stages of it.

Douglas Lumsden: We are not really seeing electricity bills come down, though. Perhaps the cost of heat pumps is going down—I am not sure—but electricity bills are not lower, are they?

Professor Hannon: It depends on which level you ask about. Households that have fully electrified their homes are probably seeing a reduction. I am talking about energy bills—if households have electrified their homes, their electric bills have gone up, but their overall year-on-year, month-on-month energy bills are likely to fall when you include EV, in-house batteries, solar PV and heat pumps. However, they are paying back the capital cost, and as Claire said at the very beginning, that can be significant and might take many years to repay.

The question is, who picked up that bill in the first place, and how is it being paid back? Both the Scottish Government and the UK Government, with the advent of schemes such as the warmer homes Scotland scheme, are committed to offering low or even zero-interest loans through bodies such as Home Energy Scotland, which I have personally used. Those loans are a fantastic way to remove the initial cost barrier, which allows households to repay the capital over a very long period by taking a slice of the resulting savings.

Douglas Lumsden: How do we get electricity prices down, Gemma?

Gemma Grimes: My view is much the same as Matthew's. The challenge with the renewable sector has always been that the capital costs are very high, compared to the on-going fuel costs. In the case of a domestic household, the on-going running costs after making a change are very low, but the up-front capital costs are quite high, or higher than people are used to. It is about finding ways to make that up-front investment less significant, whether through loans or, as is sometimes the case for the poorest groups, through grants that remove the cost. That is how we will have to pay for it. There will have to be a lump—an increase in overall costs—before they come down, just because of all the things that we are trying to change at the moment.

Douglas Lumsden: Thinking about solar, how do we get to a situation in which people do not need grants or incentives, because they just think that it is the right thing to do and think, "I will save money"? Currently, it seems that people will only do it if they get a grant, which, I guess, means that everyone else has to pay more in order to pay for that grant.

Gemma Grimes: At the height of the energy crisis in 2022, after the invasion of Ukraine, we saw a huge spike in the cost of electricity and lots of people installed solar for the first time at a rate not seen since the height of the feed-in tariff 10 years ago. If the energy costs are high enough, people will do it themselves without needing support or a lower finance option, but we do not want to be in a situation in which energy bills are crazily high again.

The Convener: Douglas, I promised earlier that I would not do this, but I have broken my promise. I will have to start reining people in. I think that you have another question on onshore wind, which I will push you to ask because we are rapidly running out of time.

Douglas Lumsden: I think that everything has been covered in the questions.

The Convener: Do you want to ask about onshore wind at all?

Douglas Lumsden: No, we covered it in the AR7 question.

The Convener: Thank you. I am sorry, but I hope that I will not have to do the same to you, Sarah.

Sarah Boyack: I have a bit of a cold, so I hope that my voice will not disappear. What have the benefits been of the significant increase in renewables over the past 10 to 20 years? What lessons have been learned with regard to those benefits? I also want to ask about where we have missed out, but perhaps we can start with the benefits. I will go to Claire Mack first, as she represents the sector.

Claire Mack: I will be as quick as I can. Bills are not coming down because gas sets the price for electricity 85 per cent of the time, and gas is really expensive. That is why bills will not come down in the short term.

For people to reduce bills in the immediate term, their household must use less or generate more. I have made that choice. As we have all accepted, that involves a capital investment, but that means that my house, which is my main asset, is now worth more than it was before, because I can sell it with a clear head and say, "This house is cheaper to run than it was when I took it on."

Looking to the next five to 10 years, I would say that we need to flood the system with more and more cheaper fuels. That is the solution here: to push out generation as quickly as possible and to add as much transmission infrastructure as possible. The lack of transmission infrastructure is adding costs within a complex system. That is the way to go with that.

What have we missed out on? I would say manufacturing. There is an enormous opportunity in that regard. Douglas Lumsden asked what we should be doing in this country. We now have a cables factory here. It is not that long ago that we were manufacturing grid switchgear here in Scotland, and we could be doing that again. HVDC—the high-voltage direct current stuff—is utterly necessary for long-distance transmission from floating offshore wind farms and so on. That is an incredible sector, with incredible manufacturing prowess, and it is one that I would love to see operating here in Scotland. There is no reason why that should not be the case.

Sarah Boyack: There is also turbine production. You mentioned Berwick Bank. We could build the kit in Leith. How can we provide certainty and ensure that that actually happens? That involves not only approving a project, but ensuring that the renewables developers follow on, do the manufacturing and develop the supply chains. They will have the confidence once their project has been approved.

Claire Mack: A lot of questions need to be asked about the level of local content in the £22 billion grid programme that is currently on the books of Scottish and Southern Electricity Networks. As we know, the levers for ensuring local content in the sector are quite light—that is the case in any sector; it is not unique to the energy sector. Local content is difficult to ensure, as the levers are not as strong as we would want them to be.

However, the EU, in particular, is developing new policies to enable onshore manufacturing. The north-east of England has had strong success in building factories. A number of different entities, including GB Energy, the National Wealth Fund and the Scottish National Investment Bank, are ready and willing to invest. So far, they have invested a lot in ports, which are an essential part of not only the offshore but the onshore wind story. Make no mistake—the components are getting bigger and bigger, so transporting them by boat is definitely becoming more prevalent.

It is a question of blending together all the different sources of funding, including private sector funding. That is utterly critical, because we do not want to be in a position in which the public sector is funding everything. We want there to be

private sector funding, because we need the private sector to be a key stakeholder. We want investment in something that the private sector sees as an asset and that it can see has a future.

In all honesty, absolutely anything is possible, if you want to make it happen. There are certain specialisms—for example, it has been said that it could take seven years to get somebody up to speed with the HVDC stuff. If we do not do that now, we will still not have it in seven years' time. It is critical that the Scottish Government thinks very hard about having a supply chain development plan to sit alongside the energy transition plan.

Sarah Boyack: Matthew, would you like to respond on what opportunities exist, what we have delivered and what more we could have done?

Professor Hannon: Yes. Thank you—it is a very good question. I will briefly touch on jobs, and I will then come back to community benefit funds and look at the issue through the lens of benefits.

The information that is outlined in the draft climate change plan points to jobs, both in oil and gas and in renewables. I found it enlightening to learn that the figures are roughly the same. The figure for full-time equivalent jobs in renewables is about 47,000, according to the information that has been presented, which I think comes from the Fraser of Allander Institute. I think that the total for oil and gas jobs is 53,000. That is a mix of indirect and direct employment.

There we have it. Part of the puzzle with regard to benefits is that there are thousands and thousands of households where food is being put on the table through the renewables industry. Obviously, there are questions about what that displaces and so on. We will not have time to talk about that, but the industry is paying those pay cheques.

11:30

Community benefit funds are the primary mechanism, or at least one of the most high-profile mechanisms, for generating benefit for local communities. We have taken these numbers from Local Energy Scotland's community benefit register, which is a fantastic resource, so hats off to Local Energy Scotland for pulling this together. It is a voluntary register. We think that around one in two projects that have CBFs are included in this, but we are still running the numbers on that. Adjusting for inflation, just over £40 million of community benefit fund money went into Scottish communities in 2024.

Interestingly, the value per megawatt installed is roughly at the level that the Scottish Government asked developers to put it, which is £5,000 per megawatt. That grew quite dramatically after the Government introduced the good practice principles back in 2014, which it updated in 2019. As I mentioned, sadly, that baseline has not kept in line with inflation, so there is actually a shortfall of around £2,000. If that baseline value of £5,000 in 2014 had been adjusted to the current day, it would be much closer to £7,000, so communities are missing out on potential benefit.

It is also important to say that we have run the numbers in an attempt to correlate where that money is falling against indicators of social deprivation across Scotland. The headline is that there is a weak to very weak correlation between where that community benefit fund money is falling by constituency and how deprived socioeconomically that constituency is. To put it in simpler terms, the money is just as likely to fall in a constituency that does not need it as it is to fall in one that really needs it from the point of view of levels of deprivation.

There is an onus on us to ensure that we design, structure and govern those CBFs in a way that prioritises progressive investments and targets tackling that deprivation. That is why we have worked with Foundation Scotland and the University of Strathclyde to pull together our "Guiding Principles and Actions for Enhancing Community Benefits from Community Benefit Funds". Foundation Scotland manages roughly £1 in every £3 of community benefit fund money that falls in Scotland. We have come up with a set of principles and underpinning actions to ensure that those funds are managed by the people and for the people, and that they build community wealth and tackle socioeconomic deprivation where it is most keenly felt.

My final point is about ownership. What is interesting about the community benefit funds is that they do not provide only money; they can also provide in-kind benefits, which may take the form of shared ownership. However, very few of those projects are coming through. There is a huge pipeline of potential projects—roughly 1GW-worth of projects—but, when it comes to what is on the community benefit register, we identified only 58MW of shared ownership across eight projects, which is around 0.6 per cent of the total capacity on that register. There are big questions about why that is the case.

Sarah Boyack: I will ask a question that I was going to ask much later, because it fits in here.

The Convener: Just before you do, the deputy convener wanted to come in, so I will bring him in and then come back to you for your next question.

Michael Matheson: I want to follow up on the issue of how critical supply chain opportunities are to delivering a just transition. It strikes me that the elephant in the room, which we have not touched

on much—time is against us, so we may not be able to—is the scale and nature of the grid infrastructure that needs to be delivered in order to unlock projects and supply chain opportunities.

I want to ask Claire Mack about the industry's perspective on this. If the level of grid capacity that is required, whether for SSEN or SP Energy Networks in the south, is not delivered, what risk does that pose for the renewables industry and the potential unlocking of the supply chain opportunity?

Claire Mack: They need to be aligned. The point is that we have heavy levels of constraint in Scotland because of our lack of investment in the grid. The only way to create a coherent system is to add more grid infrastructure and more storage. Once that has been done, people will be able to bring forward their projects.

A project will find it exceptionally hard to attract investment if it has no clear sight of grid. The point of connections reform is to introduce more certainty to the situation by providing assurance that grid will be delivered when we say it will be, which will help to chew away at the cost of capital, as well as enhancing the ability of projects to reach financial investment decisions.

The Convener: I will bring Sarah Boyack back in.

Sarah Boyack: I will come straight back in on that answer. Do we not miss out on joined-up thinking regionally? Is there more that the Scottish Government could do on that? You have all mentioned heat pumps in the context of heating, but you have not mentioned heat networks, which could be a good way of using electricity to provide heat where that electricity is produced.

Furthermore, on transport, EVs have been mentioned, but not railways or other big infrastructure projects that could use power close to where it is generated. I ask Claire Mack to briefly come back in on that, and then Gemma Grimes, who I see is nodding her head.

The Convener: I like the word "briefly" in that question.

Claire Mack: I will answer quickly by snapping the question into two parts.

The Highland Council area is one part of the country where we have seen the most development as well as the best strategic planning. Highland Council has recognised that the industry has a lot to offer it in terms of jobs, skills and wider socioeconomic benefit, and it has assimilated that thinking into its local development plans, which are pretty vast. That is a helpful way to think about things, because it allows us to have conversations about housing. Creating massive projects in that area will put pressure on other services, such as housing, and it has been really helpful to be able to have a clear sight of that.

On heat networks, you are absolutely right. We have not done a lot of thinking about how demand will change and shift over time. Thankfully, the creation of NESO and the regional energy spatial plans will help us to do a bit of that. Again, there is a bit of a knowledge gap with regard to what the drivers are. Heat networks are an excellent way of creating bang for buck, and Scotland is really pushing ahead on them.

Given what happened with regard to the heat in buildings bill, you will have noticed that the Scottish Government has altered its view of things such as heat pumps and changes at individual household level. However, it has maintained support for things such as heat networks, which form part of joined-up infrastructure plans at local authority level and also connect the community to the process. One of the most successful projects that I have seen is in the port of Esbjerg, where the heat network is housed around the port. In Scotland, we have lots of opportunities to use rivers and the sea as power sources for heat networks, which will involve incredible civil engineering projects that will deliver jobs.

Gemma Grimes: I see that there is a lot of emphasis on heat networks, but although they have a significant role to play, I would be nervous about putting most eggs in that basket when there are other ways of decarbonising the built environment that may be faster and cheaper. If we want to reach our targets in a timely fashion, we might need to reconsider that balance.

On your point about decarbonising transport, there are private wire agreements that can be established between individual generators and energy users, such as the rail network. In London, there is an initiative to decarbonise the underground. Many community energy groups are selling some of their power to the underground, and such initiatives could take place all over the country. Co-operatives are doing lots of good work in that regard already.

Sarah Boyack: That leads me on to my next question, which is about the community benefits and community ownership angle.

Professor Hannon, you said that there was a missed opportunity there and that we were not moving forward in relation to how we get the right community benefits that will benefit people in the way that is needed. Is there not a mix of community benefit opportunities and community ownership opportunities? For example, at a recent cross-party group meeting, we heard about Point and Sandwick, which has huge community benefits compared with other projects. Is there a

way for the Scottish Government to encourage more community or shared ownership of renewables projects, so that the focus is not just on community benefits but on community ownership, which could involve councils, individual communities or co-operative models? How could that be delivered in practice?

Professor Hannon: First, on the benefits piece, we need to consider from first principles what impact the project is having locally and regionally, and in which quarters it is seen as a boon or something that is undesirable.

I will give the example of Whitelee wind farm, just south of Glasgow, near me. Of a weekend or of an afternoon, you will see plenty of people up there walking their dogs, going for a run, mountain biking and all the rest. It has become a space that is used by the local community and beyond. That has nothing to do with its community benefit fund, which has separate arrangements. We also need to look at the impact that it is having on natural capital and ecosystem services down the line.

We need to start by going back to first principles and asking what impact the project is having on the community. The secondary consideration is how we address that and rebalance things so that it is seen as beneficial to the local community.

There are a wide range of opportunities, and I emphasise that in-kind benefits are just as powerful as money—in fact, they are sometimes more powerful than money, because when money comes to the community, it has to be managed, administrated and distributed.

I absolutely recognise the point about ownership. We have spent a number of years at UK Energy Research Centre's financing community energy project, which I was part of. We broke down all the different types of ownership model and all the different types of finance that can make up a community energy organisation. There are myriad forms, all of which have their own respective strengths and weaknesses. Communities need to have a clearer sense of what options are available.

Given the time, this will be my final point. Ownership can involve other partners alongside the community. Those partners do not have to be private; they can also be public bodies, such as local authorities. That public ownership piece is a really interesting model. The Quanterness wind farm is a good example. Public finance has been obtained through the National Wealth Fund, there is local authority ownership, and the funds are being distributed to community councils.

In many ways, that is a third model. The first model is the purely private one. Model number 2 involves private ownership with a community benefit fund, but public ownership is also possible. There is a real blend of options available, which people should be open to. They should blend those accordingly, given what is on the table in front of them.

There is a risk and reward piece here as well—any community that wants to step in and own must accept the risks as well as the rewards.

The Convener: I will briefly bring in Mark Ruskell, if he wants to ask a question on community benefit, but I am afraid that it is one question with one answer.

Mark Ruskell: Sure. I will probably target this more towards Matthew and Gemma. Should different technologies, such as solar, be required to pay out at a different level, depending on the economics?

With regard to wind farm repowering and life extension, do some of those historical community benefit deals, which were set at maybe £1,000 per megawatt, need to be revisited, perhaps with a £5,000 per megawatt rate or whatever is the current standard? Matthew, could you make some quick points on that?

Then I will probably go to Claire Mack, because I mentioned onshore wind.

Professor Hannon: I will keep it brief.

The Convener: I am sorry, Mark, but I was looking for one question and one answer, and you asked two.

Mark Ruskell: They are about the same thing.

The Convener: Yes, I know, Mark, but there are other people on the committee who are waiting for answers.

Mark Ruskell: I know, but it is the same point, and he could have answered it by now.

Professor Hannon: Different levels are already being paid by different technologies. As far as I understand, or at least the last time that I checked, solar PV is not on the community benefits register. Some technologies have higher values than others. Onshore wind, for instance, has a higher value than hydro, and hydro has a higher value than offshore wind.

On repowering, I will defer to colleagues, but I assume that, once a site is repowered, there might be a renegotiation of the community benefit agreement, which might yield a different value per megawatt installed.

I think that that answers most of your questions.

11:45

Gemma Grimes: Yes, there are different levels, and there will need to be different levels for solar and wind. We can go into the details of that.

Claire Mack: Absolutely, but we need to recognise that project costs have gone up across the board, so we need to be clear on the viability of projects.

Mark Ruskell: Thank you.

The Convener: Bob Doris has the next question. You have been waiting patiently, Bob.

Bob Doris (Glasgow Maryhill and Springburn) (SNP): Yet again, the committee ends up squeezing about 40 per cent of the questions that we have to ask into about 20 minutes. It is like speed dating for politicians at this stage, as I have said previously.

I want to briefly go back to community benefit, as I was reading through my notes on that. My question is about developing technologies. Offshore floating wind is really impressive, but there is uncertainty around it. That currently provides a tiny amount of community benefit, and it is not obvious which communities would be impacted by that.

There are many communities in Scotland where people are on low incomes and have high energy costs but, because they cannot see a wind farm in front of their noses, they do not get the community benefits. Is large-scale offshore floating wind an opportunity for a wider range of Scotland, particularly communities that are blighted by high energy costs and low incomes, to benefit from Scotland's natural windfall? Any comments on that would be helpful.

Claire Mack: I will be super quick. Benefits come in many forms. Some of them are less tangible, as Matt Hannon said, but some are about jobs and spurring the manufacturing business that we have talked about. Another contribution—Matt touched on this—is the rental money from offshore wind. You are right that it is quite difficult to identify the community in that case. Once operational, offshore wind farms in Scotland will pay about £171 million per year in rent to Crown Estate Scotland. That means that, over the lifetime of the projects, Crown Estate Scotland will receive about £6.6 billion in rent, which is the equivalent of about £4,700 per megawatt per year. In that way, some form of community benefit is going in, through rents.

Discussions are going on about shared ownership, and there are strong and innovative shared ownership models in the floating wind market, certainly through some of the Nadara projects that we are aware of. Notwithstanding that, there is also the power to reduce bills. I talked earlier about flooding the market with cheaper energy, and floating offshore wind is exactly the vehicle to do that. That will mean that gas will set the price less often, which is how you bring down bills.

Bob Doris: I will skip Gemma Grimes and go to Matt Hannon—apologies, Gemma. Matt, do you want to comment briefly?

Professor Hannon: It is a tricky one. The first point is about how to define the community and what the boundaries are. Obviously, offshore wind raises a number of questions about that. There is also a broader point, which I think has got a little lost, about what the community benefit fund is. The funds started to rear their heads 15 years ago, and that has happened with many other industries, and not just in the UK or Scotland. For example, it has happened with mining, landfills and oil pipelines. What are those funds for? Are they to compensate people for being located next to those things?

The Scottish Government framed community benefit as not being a form of compensation. That is there in black and white, yet I cannot see how else the funds have emerged in a context of pushback against certain types of renewable technologies. If they are not for that, what are they for? Are they in lieu of ownership? Are they about redistributing the benefits that come from renewables to make them seem more acceptable? If so, at what level? Is it local, regional or national?

For me, if community benefit is about blight, why is offshore wind commanding a lower CBF value per megawatt installed than onshore wind or hydro? There is perhaps a reason for that, and I am not suggesting that it should be the same, but we need to look into that. We need to go back to first principles and ask what the funds are for. The next question is: how should they be structured going forward?

Bob Doris: Those are all helpful points. Thank you for that.

I will roll my questions together and ask them of each witness once, and then I will have had my time, convener.

Oil and gas has come up a few times. We heard some evidence from the renewables sector that the energy profits levy might be counterproductive more generally because of its impact on the economy. We have also heard about links with skills and the skills sector, and how renewables can wash its face financially in the same way as the oil and gas sector can, although I would note that, over the years, oil and gas has had significant and deep tax cuts, and billions of pounds of taxation has been forgone to promote the development of oil and gas. We need to be

balanced when we talk about the subsidies that the different sectors have had.

The Scottish Government does not have powers over licensing and production in the North Sea, because they are reserved to the UK Government, but I would be interested to hear your views on that and it would be good to put them on the record. I would also be interested to hear whether the levels of activity in the oil and gas sector have a direct impact on renewable energy more generally. It would be really helpful to get some of that on the record.

Gemma Grimes, I will start with you, as I did not ask you the last time.

Gemma Grimes: I do not really have anything to add on oil and gas. Admittedly, I was not expecting to answer questions on it. I will pass to others.

Bob Doris: My apologies for not taking you in on the previous question.

Claire Mack: On that issue, my point is about dovetailing what we need for each sector and ensuring that it is there for us when we need it.

I will give an example with more details. Last year, I went to Shetland where there are key facilities such as Sullom Voe, and there is also potential for a ultra-deep water port. Such a port would be helpful in relation to any of the conversations that are going on about tiebacks and the oilfields that sit in that region, and helpful to any potential floating offshore wind farms in the future. I can see that there is a need for us to be clear about which assets are critical to my sector and to the oil and gas sector and to work through how we manage that. We should not take it as bluntly as thinking about whether we should or should not license—it is about managing the decline of one sector and the growth of another.

Bob Doris: Professor Hannon, do you want to come in?

Professor Hannon: No.

Bob Doris: As Professor Hannon does not want to comment on that, I will push you slightly further, Claire. Are you suggesting that, if the UK Government grants any licences in the future, there should be a clear business case, which should make explicit the impact on the renewables sector, show a clear and direct benefit for the renewables sector, and show how the project would dovetail? If you could elaborate on that, it would be quite helpful.

Claire Mack: To be clear, I do not represent the oil and gas sector; I am in Scottish Renewables. We have genuinely not made a pronouncement on the point about licensing, but I agree with your comment that it would be exceptionally helpful as part of the transition story of Scotland and the UK to understand what the strategic assets and benefits would come from managing that transition more strategically.

The Convener: Sarah Boyack, I believe that you have a brief question.

Sarah Boyack: Yes—it is it just a supplementary question for Claire Mack. A few minutes ago, you mentioned the benefits of looking at innovative shares. The vast majority of the ScotWind projects are owned by countries outwith Scotland. When I say “countries”, I mean that some Governments outwith Scotland are getting really good benefits from investing in ScotWind projects. How do we get more of those real benefits for Scotland? You talked about the national wealth fund and SNIB. If the Scottish Government took a share in projects, would there be opportunities that could give us an economic benefit as revenues come in over the years?

Claire Mack: I am not clear what the funding mechanism could be for that, but if we think about what is already in train, the Scottish National Investment Bank is effectively becoming a shareholder in Pentland. I suggest that the area in which there is greater scope to explore is, as Matt Hannon referenced, funding models. My colleagues and friends in the Highland Council are thinking about that at the moment as part of their strategic development plan and how to apportion risk for some of the big projects.

The reason why there are massive entities such as Governments and some of the oil majors in the ScotWind programme is their ability to weather the financial risk that goes along with that. That is central to the question of how you encourage further shared ownership. I have seen more conversations on shared ownership fail than go forward, and Matt spoke to the numbers on that. As the projects get bigger, they become riskier, and we have started to see even established players fall out of the market. Even last week, EnBW, which has government at its heart, has walked away from a number of offshore wind projects because it simply cannot weather the ever-changing costs that go along with them. That includes transmission costs and rental levels being set quite high by some colleagues down south, which was a real issue in that particular case.

The ability to create financial models that would enable the risk to be shared in the right way and allow other entities to come into the projects is central to this.

Sarah Boyack: You mentioned very big projects. Presumably, there are opportunities in smaller projects, for example in towns, cities and urban areas, where you could develop community-owned solar rooftop projects. There are other

opportunities out there. It is a question of moving those up the agenda and making them more investable.

Claire Mack: A really important part of the whole piece is city decarbonisation and creating opportunities for cities to be part of this. That is a really important next step that we need to think about. I have taken a decision as a householder, because I want to have control of my transport and energy costs, including my heating costs at home. I think that everybody should have that opportunity.

To speak to Matt's point, I genuinely believe that there are many ways in which we could tweak the current system to make the distribution of community benefit funds more equitable, improve how we identify suitable sites with access to cheaper fuel sources, where possible. That might be ones that sit off grid—in cities, you quite often have that capability to think about that.

Perhaps Gemma Grimes has more to say from her sector's perspective.

Gemma Grimes: One of the funding approaches that has been announced fairly recently is GB Energy potentially taking a role in community energy. We do not know the exact form that that will take, and I do not know the extent to which the Scottish Government will be working with GB Energy, but there is the potential to take public-owned shares of those projects or, indeed, to own them outright.

Sarah Boyack: I should probably just put on the record that I am a member of the Edinburgh Community Solar Co-operative.

I will stop here. I appreciate your indulgence, convener.

The Convener: My twitchiness is because I have one minute and 30 seconds to ask two questions.

The first one is simple. The committee has taken a lot of interest in hydrogen and its development in Scotland. We have not really had a chance to talk about it this morning, but considering that things are changing with the climate and we have less water available, will hydrogen become an important part of energy production for renewables through offshore and onshore wind and solar? Will it help? I guess that I am looking for a yes or no answer from Claire Mack and Gemma Grimes.

Claire Mack: Is it a yes or no answer? Yes, we need to understand where the demand is coming from for hydrogen and therefore build the finance models that will enable it.

The Convener: Okay—so you think there is a role for hydrogen.

Claire Mack: Yes.

Gemma Grimes: I agree.

The Convener: Perfect. That allows me to get in the last question, which might be the simplest question of the whole session.

We do not have an energy strategy in Scotland. I think that the draft energy strategy and just transition plan was laid in 2023. Last October, we had an update in which we were told that everything was changing very quickly. Does the climate change plan provide adequate clarity for future investment, given that we do not have an energy strategy? I put that to Claire Mack.

Claire Mack: I would not have said that the climate change plan could replace the energy strategy—it is really important that we get our heads around that, particularly as part of the conversation around a strategic spatial energy plan. It is not just about having policies and strategies; it is about having the analytical capability in the civil service and in Government to understand which parts of the strategic spatial energy plan we really need to be at the heart of, and to understand Scotland's role in the future energy mix. That is really important.

Gemma Grimes: No, it is not sufficient. We absolutely need an energy strategy. To link back to what was said previously, we need a supply chain strategy to go alongside it. I think that the skills strategy ran out last year, so we need another one of those.

Professor Hannon: No, it is not sufficient, but I was not expecting it to be. Whatever energy strategy comes out needs to sit alongside other strategies—such as those for transport, buildings and agriculture—and then those need to be mapped against the just transition plan and a robust set of indicators that can gauge how much progress towards net zero and beyond we are making in each sector.

The Convener: The cynic in me might say that it could be very difficult to produce an energy strategy just before an election and might wonder whether that will be held off until afterwards. I am sure that that is incorrect.

Thank you very much for the evidence that you have given. I am sorry that I have had to rush you, but I cannot control the clock—I wish that I could. Thank you for all the time and effort you have put into this morning.

12:01

Meeting continued in private until 12:58.

Corrections

Gillian Martin has identified errors in her contribution and provided the following corrections.

The Cabinet Secretary for Climate Action and Energy (Gillian Martin):

At col 6, para 6,—

Original text—

When it comes to their competitors outwith the UK, the new mechanism that the UK is bringing in—the CBAM—will be phased in as the free allocations drop, which will effectively protect businesses from competition from imports that come from countries that do not have the same emissions trading function or procedure that we have in the UK.

Corrected text—

When it comes to their competitors outwith the UK, free allocations will gradually drop from when the new mechanism that the UK is bringing in—the CBAM—is implemented, which will effectively protect businesses from competition from imports that come from countries that do not have the same emissions trading function or procedure that we have in the UK.

At col 7, para 3,—

Original text—

Obviously, the ETS and the CBAM are UK Government measures, although the four nations are kept in the loop by the UK Government on the direction of travel.

Corrected text—

Obviously, the CBAM is a UK Government measure, although the four nations are kept in the loop by the UK Government on the direction of travel.

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