

Scottish Affairs Committee

Oral evidence: [Renewable energy in Scotland](#), HC 51

Thursday 17 June 2021

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Members present: Pete Wishart (Chair); Mhairi Black; Andrew Bowie; Deidre Brock; Wendy Chamberlain; Alberto Costa; Jon Cruddas; Sally-Ann Hart; John Lamont; Douglas Ross.

Questions 38 - 79

Witnesses

I: Claire Mack, Chief Executive, Scottish Renewables; Matthieu Hue, Chief Executive Officer, EDF Renewables; and Lucy Whitford, Managing Director for UK & Ireland, RES.

II: Steven McMahon, Deputy Director, Electricity Distribution and Cross Sector Policy, Ofgem; and Bless Kuri, Head of System Planning, Scottish and Southern Electricity Networks.



Examination of Witnesses

Witnesses: Claire Mack, Matthieu Hue and Lucy Whitford.

Q38 Chair: Welcome to the Scottish Affairs Committee and our second oral evidence session in our renewables in Scotland inquiry. Today we have two panels looking at some of the issues around transmission and supply. First, our first panel, and I will let them introduce themselves and say anything by way of a short introductory statement.

Claire Mack: Thank you very much. I am very pleased to be here and to be able to give you some insights into the issue that we are currently discussing. I am the chief executive of Scottish Renewables. We are the trade association for the renewable energy industry in Scotland. I represent about 260 members in that space.

Renewable energy is very much a Scottish success story. We are now producing about 97.4% of Scotland's electricity consumption from renewable sources, which is not only helping us to reach our net zero goals for 2045 in Scotland, but also has strong associated economic and socioeconomic benefits.

Many important decisions will need to be made in the coming months and years to ensure that the transition to a society powered by low-carbon energy is completed, decisions at a UK level on that transition and on jobs. Figures that we have recently gathered tell us that about 22,660 jobs are supported by green energy here in Scotland, which is a great figure, and coming down the line are some great opportunities in renewable heat, which rightly deserves a strong focus as part of that energy transition discussion.

Matthieu Hue: Good morning. I am very pleased to participate in the Committee today. My name is Matthieu Hue. I am CEO of EDF Renewables, UK and Ireland. We develop, build and operate across wind, solar and battery storage assets. We have a gigawatt of assets in operation and about 800 MW of projects in construction. We have 500 MWh in operation in Scotland, and we have two projects in construction in Scotland. One is the Neart na Gaoithe, a 450 MW offshore project, and the second is a 30 MW onshore project called West Benhar. We are very ambitious about contributing to the net zero target and we are very pleased to be able to work with the Government and all stakeholders to make the most of the opportunities here in Scotland to deliver on net zero.

Lucy Whitford: I am delighted also to be here today. My name is Lucy Whitford, and I am the managing director for RES for UK and Ireland, responsible for the development and construction of our business.

Just a little bit about RES: we are the world's largest independent renewable energy company. We have been at the forefront of renewable energy development for almost 40 years. We are responsible for more



than 20 GW of renewable energy capacity and energy storage projects worldwide. We have developed 450 MW of renewable projects in Scotland. We are active in a range of technologies, including onshore wind, offshore wind, solar and energy storage.

Also important is that we play a critical role in ensuring the provision of electricity with our teams on the ground operationally and in our Glasgow-based 24/7 365 control centre, which is responsible for keeping 10% of the UK's operating renewable energy fleet running. We employ 500 staff across the UK and Ireland, working across the lifecycle of renewables—development, construction and support services.

We have been working in Scotland and across the UK and Ireland. We want to play a part in Scotland's energy future and ensuring our projects contribute to decarbonising the electricity system at the least cost to the consumer.

Q39 Chair: Excellent. Thank you all very much for being very clear and concise. Just to get things started, we have very ambitious targets in both Scotland and the UK. Do we have the appropriate policy incentives in place to ensure that you, as companies and stakeholders, can help the UK and Scotland meet these targets? How could these policies be made more effective?

Claire Mack: Our key policy for funding projects is the contracts for difference mechanism, which must continue to support investment to reach the levels of deployment that net zero requires. It has been an incredibly effective tool to date, bringing forward some pretty high volumes. One of the things that we need to be very clear about is that options must be kept open. We need to be very realistic about what the CfD does. It helps to back projects; it helps projects be able to draw in investment, because a lot of these projects are invested in from overseas and have multiple different stakeholders working with them. The volumes that the CfD mechanism bring forward creates a stabilisation mechanism that de-risks private investment, so it is very good at helping my members secure low-cost funding. The continuation of CfD is critically important, even for established and near-established technologies, because it is essential to how these projects are financed both in the short and the longer term, and because that predictability is very bankable, backing and giving confidence to new renewables projects, which we know we need to accelerate. The CCC is saying that a quadrupling of inputs into the system of low-carbon electricity is required.

There are some differences between Scotland and the rest of the UK that need to be accounted for. The objective of the CfD mechanism is fairly rigid, as it is to seek the lowest cost. We need to be very clear that there is a slight imbalance perhaps in the level playing field for Scottish projects due to an imbalance in the impact of the transmission charging costs that are imposed against Scottish projects. It penalises them to the tune of tens of millions of pounds each year, and that is something I am keen to unpack here with the Committee. A clear framework for those



future options will help sustain not only projects, but will sustain the supply chain and jobs, which will move us away from peaks and troughs in investments and help us to keep financing costs as low as possible, while bringing forward as many projects as we can to hit net zero and offer that kind of best value to consumers.

Q40 Chair: We will specifically come on to transmission charges later in the session, because we want to hear your views on this. Basically, on the general policy framework, Mr Hue, do you feel you are getting the necessary incentives to ensure that we are going to make progress with this? If not, what would you want to see improved?

Matthieu Hue: We very much welcomed the targets. We welcomed the announcement of Scotland targeting net zero emissions by 2045 and the UK's target to achieve the same net zero emissions by 2050. Targets are very important because they motivate the industry in the deployment of renewables, but a target is not sufficient alone. A lot can be done, and must be done, through policy and incentives, first to enable the deployment, but also to increase the pace at which it can be done, as well as reducing the cost. Policy is quite central to meeting net zero and doing it at pace and at effective cost.

I will take a few examples; there could be a lot more, I am sure.

On the planning side, there is huge potential for onshore wind in Scotland, as we know, but in the last five years it has taken, on average, 37 months to go through the process of getting a planning decision for projects. What does that mean? First, it delays projects, increases the cost and probably makes the projects unable to contribute as much as they should to the 2030 target in Scotland to reduce emissions by 75%. A number of these projects will either not be eligible for the CfD auction that is taking place later this year or are not able to compete because they will not have had the announcement in their planning. I think more can be done through reviewing the legislation around planning policy in Scotland, as well as resourcing the planning process to make it more effective.

I will take another example with the grid. More can be done to anticipate the investment needed to support renewable projects. We recommend a review of the grid system to make sure the investment required for the deployment of these renewable projects is anticipated and in a way that accounts not just for single projects but for the pipeline and potential across the UK. That doesn't apply just to Scotland.

Finally, radar mitigation is a clear example. We know it slows down the pace of deployment, but it also increases the cost. It is done on a project-by-project basis, whereas if it were done more centrally there would be a better solution at a lower cost for the consumer. Today a radar solution scheme can increase by 5% the cost of electricity produced by a renewable project. That is a substantial amount, which could be decreased significantly if it were managed more centrally and the onus



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was on the people managing the radar to facilitate renewable projects. There are very concrete examples here of what can be done to enable net zero, but also more quickly and at a lesser cost.

Q41 Chair: All very interesting and helpful proposals. We are particularly interested in the radar issue. We might come back to you on that and seek your views further, but the same question to you, Ms Whitford. Included in your answer, could you give your views on the 2020 energy White Paper, whether you feel that further incentivises the sector and whether you find its provisions useful in trying to ensure we get to these targets?

Lucy Whitford: I will try not to repeat some of the things that Claire and Matthieu have already said, but we feel it is very important to set targets. We are very supportive of the Scottish Government's ambition to achieve net zero by 2045 and the UK Government's by 2050.

To add to Matthieu's point, it is very important that the framework behind policy and regulation, or below those targets, is very clear so that delivery is not slowed down, otherwise we just will not make them.

The White Paper is heading in the right direction. It is a credible vision for how we can meet our emission reduction targets. I think we could do more with electrification, coupled with green hydrogen for those hard to abate areas of the economy. Green hydrogen could be cost competitive by 2030. I think there is an opportunity to deliver on the ambition, and to increase the ambition, by bringing green hydrogen forward. Policy and consistency on policy is key, particularly regarding the CfD. Not excluding certain technologies is going to be very important so that we get the investment and delivery towards net zero with the projects.

We need timings on auctions and volumes to be more certain, which is what we see in other countries that we work in. Very importantly, if we want to start moving the dial this decade, we have great ambition on offshore, but we could have shovel-ready onshore wind projects and they could come online faster. We shouldn't miss that opportunity. Just using an example, over the last decade industry has delivered an average of 208 projects a year, but in 2019 we delivered only 23 projects. That is all about the policy certainty piece being missing over the last number of years. That is probably key for me.

Q42 Chair: We got the news this week that the Scottish Government missed the target for reducing greenhouse gas emissions for 2019. I think the figures fell 51.5% against the baseline, well short of the 55% target. Do you think these targets are overambitious? How do you account for the failure to meet them and keep them on board?

Matthieu Hue: I don't think these targets are too ambitious. They are needed. It is just the co-ordination and the effort being put on policy matters, on what enables these targets to be met. We gave a few examples on the planning side, and 37 months is far too much for an



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onshore wind project. It is far less if we think of offshore wind, which are larger projects, so it is not that the impact is less. I think the regime to go through a planning decision is more effective.

The same could be said of the grid, and I took the example of the radar. I don't think it is this target being too ambitious at all. It is just being able to be focused enough on what will enable these targets to be met.

Chair: Does anybody else have any views about targets and the fact there has been slippage?

Claire Mack: I would largely echo what Matthieu and Lucy said earlier, which is that inconsistency in policy did see a drop in the number of projects, which is bad. It is bad all round. It is bad for us as a country trying to draw in investment, it is bad for our workforce, who we are obviously trying to move through an energy transition and a just transition, and it is bad for the energy system, as you can see. You start to see those kinds of impacts.

Not having worked as quickly as we could have done on electricity decarbonisation, for example, has meant that we have not moved into decarbonisation of transport and heat as quickly as we should have done, and heat is a very big part of that. That is the big plan that we need. We need to bring forward very high volumes of electricity to work alongside our proven technologies for decarbonisation of heat. That is exactly where you start to see that kind of mismatch.

I don't think the targets are too ambitious. You can never be too ambitious when you are playing with climate change, because we know the catastrophic effects that can come forward with that. We know what the window looks like, it is 10 to 12 years. That is what we have to deal with, but we have the technologies, the skills and the know-how to deal with this.

As Matthieu says, it is about accelerating things by using the enablers that we have, which are very much the planning system, which sits within the Scottish Government's competency, but also energy policy certainty, which very much sits with the UK Government, and an enabling regulatory system. At the heart of this, a regulatory system that is fit for purpose, that is fit for net zero, is essential to making sure that we don't miss any future targets.

Q43 **Chair:** Ms Whitford, already there have been a couple of comments about contracts for difference. That has been around for a long time. The last time we did an inquiry into renewables six or seven years ago, all the debate and discussion was around contracts for difference and how useful and purposeful it was to make sure that companies like your own were all going to be enabled. Contracts for difference, are they still fit for purpose as we go forward? Is it a system that enables in the way that you want to see the sector enabled?



Lucy Whitford: I think it is fit for purpose, but all technologies must be allowed to participate. I think it should evolve to allow hybrid technologies and potentially green hydrogen. That is the opportunity for us, as who can participate in it evolves, which drives scale. That is what we need. We need our projects to be built, and that allows certainty and allows us to bring projects forward.

Claire Mack: To build on exactly what Lucy was saying, absolutely, CfD has been a fantastically successful tool—I think I said that at the outset—in providing certainty to help us to draw investment. We are aware that it is quite a blunt instrument at times and that there are now interventions to look at building further commitments into supply chain delivery. Additional work is going on alongside things like the CfD mechanism, such as the offshore wind sector deal, which has committed to 60% local content, but the CfD mechanism is pivotal to driving projects. We don't get jobs without projects, and that is important.

We also need to think about exactly what Lucy was saying—different technologies and different tools. Green hydrogen is one, but we also need to think about something like pumped-storage hydro, which means thinking about a market mechanism in order to bring forward what it can bring to the new energy system, because this new energy system needs to be balanced in a slightly different way. The way that we are generating and using electricity is changing, and something like pumped-storage hydro helps us solve a very clear issue around long-term, long-duration storage, which is going to be a key feature of the new energy system, along with using something like green hydrogen perhaps to help work in that kind of balancing way. We need to think about a market mechanism for that, which probably won't be CfD. It will be something different, but we do need to start thinking about it.

The other space I am very keen for us to think about here is small-scale renewables. Again, the way we are generating and using electricity is being completely overhauled and is completely changing. The CfD mechanism perhaps isn't delivering on the small-scale renewables story as well, so we are keen to think about how we would use small-scale renewables. They have a very important role to play in getting to net zero, but those projects don't have a viable route to market since the closure of the renewables Obligation and feed-in tariff schemes, because the CfD only serves projects over 5 MW. We need to think about the route to market for smaller-scale renewables generators, because the next stages of decarbonisation, in terms of heat and transport, are going to come much closer to consumers and communities, and therefore we want them to be part of that new energy system. For them to be part of it, we need to think about how those projects will be set up and how the revenue will be generated to enable self-sustaining smaller-scale projects.

Q44 **Deidre Brock:** Welcome to our witnesses. It is good to see you here today. I have been asking questions so far about transmission charges.



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Mr Hue, you have already touched on this, but I want to get an impression from all of you about how transmission charges in Scotland are factored into decisions over whether a location within Scotland would be chosen for a renewable energy project. I might start with Mr Hue, given that you mentioned it previously.

Matthieu Hue: Good morning. Yes, indeed, a lot needs to be done on grid. We speak a lot about transmission charges, and they are an element that needs to be reviewed, because they can impact the competitiveness of projects across various locations. There is a reason for differences in transmission charges, and it is a cost to the consumer. The closer we are to the consumer, the lower the cost. I don't think that is necessarily a flaw in what it tries to address but, overall, it can impact the competitiveness of projects.

We would like an overall review of how the grid system works, because we are speaking of charges, but also speaking of resilience of the system. We need to be careful not to have too narrow a view of the challenges of the grid system. We need more investment to anticipate the deployment, we need to have a system that is resilient and we need to have a system that enables these projects to happen when there is potential and it is economic to the customers.

On all these elements, things can be improved. I think there needs to be a review of what is currently in place, a consultation on making changes to how the grid operates and is developed to enable the net zero target.

Q45 **Deidre Brock:** Ms Mack, could you share your views with us? What sorts of changes might a review be able to highlight and then bring about that would enable renewables investment in the future?

Claire Mack: This is a critical issue for us in Scotland, and members are speaking to us a lot about it because of the lack of a clear, consistent signal from the transmission charges network to developers. To give you a bit of an idea, we need it to enable that net zero transmission and, at the moment, it provides a penalty to the tune of tens of millions of pounds each year to projects in Scotland and seems to run entirely contrary to the Government's levelling-up agenda and the net zero agenda. The best of resources sit in the north of Scotland, which is where this problem is most acute. We need that transmission charging regime to ensure the transition to net zero. It was devised about 30 years ago in a very different era, when we did not have the renewables-led system that we are aiming for now. The incentive within it to place generation closest to demand does not fit with what we need now, which is probably to harness the best of resources as quickly as possible in order to achieve our net zero ambitions.

Scotland is the windiest country in Europe. When I say we have the best resources, that is what I mean. It has onshore and offshore resources that will help us to meet net zero, but the increased costs of TNUoS mean that when these vital projects enter into a process like the contracts for



difference—which, as I say, can be very blunt in seeking out the lowest-cost options, rather than thinking about the wider future scenario of what we might need—projects in Scotland are sometimes paying over £6 per MWh just in this year alone, compared to EU generators, who are paying just pence per MWh for transmission charges, and this gets worse as you move further up the country. We need 30 GW of offshore wind by 2050, so we need to think about what we are going to develop here in Scotland. The disadvantages of TNUoS mean that we risk some of these projects not being built at all. We certainly saw that in what came through the last auction round. TNUoS charges, the transmission charges, were very much part of the issue.

It is about the stability of the signal as well, not just about the level of cost. There are volatility issues here, too. When you are talking about projects like offshore wind projects with 20 to 25-year project plans sitting behind them, it is almost impossible for my members to be able to get those costs in a meaningful way into their projects, which then—

Q46 Deidre Brock: What do you think the solution is then? Is it just a fairer sharing of the costs across the network?

Claire Mack: It is probably time for us to have a very deep conversation about this. I would echo what Matthieu was saying, it is time for a full review. The one thing that I would absolutely urge is that you bring industry into that conversation from a very early stage. It is complex; the solution will be complex. What we are trying to do is ground-breaking. We are changing an entire system here, so it does need careful thought. I would like to see industry brought into that conversation all the way along.

Lucy Whitford: From our perspective, maybe taking what Claire said previously, it doesn't feel as if charging is fit for purpose anymore for us to deliver net zero. We have worked up some examples of network costs. The additional cost per annum of a 22 MW wind farm in Argyll versus one in Essex could be £500,000. Continuing in the current direction of travel on charging reforms could add another £120,000 per year to a project, so it is very significant. That means that, although Government ambition is there, the resource is there and the developers are there and want to develop the projects responsibly in the communities that they are working in, we may struggle to do that and it could be a barrier.

Q47 Deidre Brock: In relation to this uncertainty over the future of transmission charges, are you aware of any investment decisions that have been postponed or even cancelled because of that uncertainty? Is this something you are picking up from the industry?

Lucy Whitford: On an industry level, I think Claire has already said it is significant for the members of Scottish Renewables. From a RES perspective, we are trying to model it and make investment decisions for our projects, looking at the lifecycle costs. That is a very important part of it, but the delays coming through with changes in the charging in the



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consultations also play into the fact that it is hard to make investment decisions, because you don't ultimately know what those charges will be in the future.

It is important to add another comment. I agree that we need to overhaul and have a wider look. I don't think it could all be placed on Ofgem to do that review. I think it is wider and should be a whole-system review led by BEIS, with Scottish Government, Ofgem and other key stakeholders. We have seen an example of that with the Aviation Management Board, where those stakeholders have all come together to do that review. That is absolutely what we need to see happen to move this forward.

Q48 Deidre Brock: Are you picking up from the UK Government that there is an appetite for that?

Lucy Whitford: We haven't seen it yet, but that is what we would like to see. At the minute, Ofgem is doing a lot of work and has net zero there, but it would also be good to put a focus on net zero into its formal statutory duties. Across the board, net zero should be at the heart of every policy decision we make going forward.

Q49 Deidre Brock: Yes, a good point. The money from transmission charges, as you say, is unevenly distributed across the network, but are you seeing it being invested back into the grid? Are you seeing evidence of that, or of it being used for maintenance? Ms Mack, is this something you are aware of?

Claire Mack: The cost reflectivity point is one of the things that we are very keen to highlight. We are seeing a mismatch there. We find the current system slightly opaque, to be honest, in that the charges collected seem to be out of balance with the costs of the grid. Certainly that is what I am hearing from some of my members. The financial flows within that system are not necessarily transparent. You also have to remember that these grid investments are investments. They will help us to drive forward. Part of the phenomenal resource that we have in Scotland could be part of our export resource, too, particularly if you start to think about green hydrogen coming on to the system. Those investments are genuine investments that will pay back over time.

Where we come into a bit of a mismatch is that those plans probably outlive the investment windows that are set by Ofgem. That is not Ofgem's fault. That is how it is set up, that is the regime it is given to work with, but that is where we need to get a bit more transparency and clarity on the issue. Ultimately where we will fail will be with the net zero target rather than in any kind of regulatory sense. That is where Government probably need to find their impetus to get the motivation to start to look at this in more depth.

We also believe that, ultimately, longer-term costs to consumers will be higher if you take it out of the five-year window that we currently look through at the regulatory regime. If you look towards net zero just in



terms of system costs and additional costs, in terms of mitigation and adaptation to climate change, it will start to bear on consumers much more heavily in later years, so we need to take that longer-term view.

Deidre Brock: Anything to add, Ms Whitford or Mr Hue?

Lucy Whitford: I don't have anything to add to what Claire has said.

Mathieu Hue: I will just make a general point about what establishes and facilitates investment. We have seen the benefits of the CfD bringing stability into investment, reducing costs, increasing the volume of deployment. The same principle applies to grid. If we have stability and we can have visibility as to what costs will be incurred, when and by whom, deployment will be facilitated. The grid is central to deployment and net zero, and it needs to be looked at as a whole system. That is essential for net zero.

Deidre Brock: Great. You all seem in agreement on that. Thanks very much.

Q50 **Sally-Ann Hart:** Good afternoon to our panel. I want to look at the workforce and retraining. I will put my question to Lucy Whitford first. Obviously there is potential for thousands of renewable energy jobs in Scotland, and an opportunity—or rather a need—for oil and gas sector workers to retrain and reskill, which will take time. When is the critical point for having a sufficient number of people in the right jobs to meet the net zero targets? Is there an urgency as regards this workforce for the renewables sector?

Lucy Whitford: From our perspective, it is important for oil and gas to transition. We are more an onshore developer, although we do work from the support services side offshore, but I think there are key skills there that can transition. Through the pandemic we have seen that our sector has grown and continued to grow, so I think there are lots of opportunities. We recruited 132 new employees during the last year, and about a quarter of those are based in Scotland.

The willingness is there from the companies, we want to invest, and there are opportunities to change. An important point is that we are also seeing through our recruitment process that people are applying for jobs actively with us because they want to play their part in tackling climate change. That is a new dynamic that we are going to see growing.

Claire Mack: This is critical, and you are right to home in on it, because people need to be at the heart of the energy transition. We saw the catastrophic effects of a badly managed energy transition when we moved away from coal in the late 1970s and 1980s, particularly in the communities that were built around it. We know what we need to do and we know what we are trying to avoid here. It is important to let you know that, as an industry, we are well aware of what the commitment is here.



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The oil and gas sector reports there are about 100,000 jobs today. There are certain milestones along the way on this journey that we need to be very cognisant of, because the rate of change is very important. I think at the heart of your question is how we can meet that rate of change in a well-managed way to ensure that nobody is left behind in this process.

According to the sixth carbon budget, by the early 2030s we should start to see that all new cars, vans and boiler replacements will need to be low carbon, an EV or something similar, largely electric, so we need to think about what we need to do about generation to meet that consumer demand and what we need to do about our current gas servicing workforce, getting the people who service gas boilers into a place where they are able to work across dual fuel and then, ultimately, moving into low-carbon heat technologies in the future. They are the same as gas boilers are today and need to be serviced regularly, and we will need people to be able to do it.

By 2035 our electricity supply will be 100% low carbon. By 2040 we will be starting to look at the bigger and heavier goods vehicles in that transport change, which again points us towards the development of green hydrogen specifically to meet that challenge. Into that 2040 to 2050 timeline, we will be looking at the sectors that are very difficult to decarbonise—aviation and industry. We have a bit of an idea of where those milestones lie, and we also have the systems in place. We have skills development systems. We have Skills Development Scotland and the equivalents across the rest of the UK.

There is a lot of work going on by industry just now to try to understand where the crossovers lie between our sectors, because there are a lot of crossovers. Renewable energy projects are largely construction projects at times in their life. They start out on a desk, where somebody is thinking about planning and consents, then they become construction projects, then they are operations and maintenance projects for the largest part of their life. That is the 20-year part of it, the operations and maintenance part. That is the bit where we need to home in on what skills cross over between our current oil and gas workforce into that renewable energy space.

The great thing about this is that we have done a bit of work in this area with people who work in the oil and gas sector. They recognise that climate change will have an impact on their line of work—about three quarters of them—and have said that, but the same people are also very positive about making that step into renewables. Making sure we put in place the bridges for them to do that is critically important.

We will soon be bringing forward some work from a cross-energy grouping called the Energy Skills Alliance, which will hopefully inform a model that will help us to predict, through various scenarios and inputs, how that rate of change will happen. That is the key here, it will very much depend on the projects that come through that pipeline, how



quickly or how slowly we make that transition and how we then plan and manage that skills transition alongside it. Yes, a critically important part of this piece.

Sally-Ann Hart: Thank you, Claire. That was very comprehensive.

Matthieu Hue: Claire was very eloquent, but I can say it is already happening. In the offshore sector, a lot of oil and gas companies are already transitioning to renewables, so the supply chain of oil and gas, and we see oil and gas companies are investing. We see a lot of jobs being created by the renewables sector, offshore in particular. We had 26,000 people working in offshore by the end of 2020, and 30% were in Scotland.

What it needs is investment, investment in people but also investment in infrastructure. What enables this investment is visibility of the deployment. We have the example of Neart na Gaoithe, where we worked with BiFab on the fabrication of jackets for wind turbines in the Methil yard. You might remember that the company went bust and has been recovered with investment from Harland & Wolff. I am pleased to say that we have now put back a contract into the BiFab yard at Methil and 290 jobs will be created as a result, but there was a huge amount of work involved in doing that.

We need this investment to happen without as much effort as people have put in, because it is not very efficient. The amount of effort that has been allocated to enable the fabrication of jackets in that yard was enormous. What was missing was the infrastructure, so there was a need to invest in the infrastructure. The people had not worked for some time in that yard, so they needed to be retrained and the system and process needed to be upscaled and put in place.

There is a lot more to be done to enable renewables to attract the workforce and the know-how that was deployed in oil and gas. The lesson from oil and gas should be applied to trying to make more of renewables. We have opportunities with more offshore wind and onshore wind in Scotland, for sure. Floating offshore wind will be part of the picture for net zero, and there is certainly a lot of potential in Scotland for that, so I hope people will be central to that energy transition and more can be done through investment to make sure that people benefit from the growth in the sector.

Q51 **Sally-Ann Hart:** There is clearly a crossover between the oil and gas sector and the renewables sector, and you can retrain and reskill. Lucy and Matthieu said that both your separate companies have recruited recently. I think Lucy said over 130 jobs and Matthieu said 290. Lucy, have the jobs that you have created been taken up by people from the oil and gas sector or by graduates from university?

Lucy Whitford: A mixture. We will have seen some coming through from oil and gas. We are seeing some coming through from the military. We



are also seeing graduates. The development side of the business, the construction and the support services are different kinds of roles. What we have seen is a big expansion within our support services, so the operation and maintenance, the asset management of projects, either the projects that we have developed ourselves or are now working on for owners that were projects we had not developed. It is a mixture. We are only at the start of seeing the oil and gas industry transitioning or coming through. We will see more of that as we expand the support services part of our business.

Q52 Sally-Ann Hart: So it is not just the oil and gas sector that is a good place to recruit; there are other sectors like defence, the Army. Matthieu, do you have a breakdown of which sectors, whether it is oil and gas, the Army or new graduates, have been employed recently in EDF?

Matthieu Hue: I don't have a breakdown. We can certainly provide it as complementary information. The 290 jobs I mentioned are being created by Harland & Wolff for the jacket fabrication at the Methil yard, but we have also directly employed new people in the business. I echo what Lucy said, it is multidisciplinary. We have some people with a very technical engineering background and we have people with an environmental background.

What is interesting is the training that is available. A lot of people are now trained in a discipline where they are specialised for renewables. A lot of people that we will employ, be they technicians or commercial people, will need a significant amount of training to do the job. We also retrain and train the people once they have joined us, but it is very encouraging to see that a lot of graduates or people who seek to join the industry are seeking access to training information, a diploma, to be attractive to the job market. That is something we see clearly. The industry is attracting a lot of people who are very keen to join.

Sally-Ann Hart: I was wondering if Claire wanted to come back on any of that, or add to it.

Chair: Briefly. Thanks, Claire.

Claire Mack: I will be very brief, I promise. I don't have any detail of the kind that you get from developers about where people come from, but the key thing is that we want to attract people from everywhere. Diverse workforces are great workforces, we all know that, so it is about us being able to make ourselves attractive and being able to baseline.

I think there are some issues with data here. One of the things we have discovered is that trying to get good jobs data on the low-carbon transition has been hard, and we are trying to engage with ONS on that at the moment. We have done our own work. That figure of 22,660 came from work done by Scottish Renewables, but one thing is for certain, there is a great opportunity to create a high-tech, high-skill, high-value workforce off the back of something like offshore wind and the renewable energy transition, which can go forward across the rest of the world. That



is where we need to be very clear. Economies worth about £3 trillion have come to the point where they want to enact a green economic recovery off the back of Covid. We can seek to serve all those markets with a low-carbon labour force that we can grow right here in the UK.

Q53 Jon Cruddas: Good afternoon, everybody. My question follows directly on from Sally-Ann's, specifically around jobs, but with reference to supply chains, which has been touched on. I must admit to being slightly confused here, so excuse my ignorance. With the CfDs, the supply chain plan is assessed as part of the bid, yet the offshore wind sector deal established a 60% lifetime UK content—parts, labour and maintenance—by 2030, yet as far as I understand it, the most recent auction guidance lists the criteria that will be assessed, but doesn't specifically mention UK-based supply chains. Evidence we have received so far suggests that jobs in the supply chain are not necessarily in Scotland or the UK. How are you incorporating UK content and the UK supply chain for current and future projects? Will lifetime UK content deliver more jobs for the people of Scotland?

Lucy Whitford: I will probably not focus on offshore. I will just give you a couple of examples from onshore and probably defer to Claire and Matthieu for comment on offshore.

Supply chain is very important for us. We want to be a responsible developer, we want to work in the communities where we are building our wind farms and we want to utilise local contractors and supply-chain firms. I think you are right about some of the major components, certainly for onshore, still coming from outside the UK, but we are looking at local content as much as we can.

In the construction of our Freasdale wind farm on the Kintyre peninsula, we invested more than £6 million into the local environment. Another example, which I think is a good example, is maybe more onshore-focused than offshore, but again in building one of our projects in Dumfries and Galloway, we awarded the civil contract to a local construction firm, which had never worked on wind before. That was its first significant project, and it led to £8 million of investment in the area. It employed 45 local staff during the construction and has since been able to go on and win other contracts. That might not be quite how you have asked the question, but I wanted to give the onshore perspective.

Jon Cruddas: No, the point is well made.

Matthieu Hue: Specifically on offshore wind, although it is general to the renewables industry, we seek to support the supply chain at all levels, so that can be very local. On a project like Dorenell, which was smaller than 200 MW and which we built a couple of years ago, £40 million went into the local supply chain alone, so quite a significant amount. But generally, and more specifically maybe for offshore wind, I think there is a genuine desire to support the supply chain. Money is being made available through the new CfD contracts to invest into the supply chain, so that is



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the first one, which is an improvement on what we had before. The commitment to improve and increase the UK content of these projects is genuine.

There has been a review of the commitment that projects that are eligible and participating in CfD have to demonstrate that they will implement their plan. Incentives have been put in place so that, if this plan is not implemented, they need to be remedied or penalties are incurred by these developers. I think it is fair to say that the CfD was not quite delivering to the expectations, because the emphasis was on being competitive without very much time to prepare the supply chain development for investment, investment that is required to enable a competitive supply chain in Scotland and elsewhere in the UK. Progress has been made over the last 18 months to support the supply chain, investing in the supply chain, to make sure that the commitments that are made are significant and incentives are in place to ensure that it happens. We will see with AR4 if these measures that have been put in place have the effect we hope for, but I am sure the industry will remain and will seek to increase the benefit of this investment in UK content.

Claire Mack: Yes, absolutely, the supply chain is critically important. If I speak to any of my members, particularly in the offshore space, that is where a lot of the focal point of the discussion has been of late. They talk about partnerships with the supply chain, and that it is very important that they work effectively and efficiently.

One of the things we are very aware of—and Matthieu alluded to this earlier—is the level of investment over time in the supply chain, which has not been where we would have wanted it to be. Some of that is underinvestment, but some of it was to do with lack of visibility of the pipeline. I have to keep coming back to that for everything—visibility of the pipeline, and a strong pipeline of projects with certainty through the CfD mechanism, helps everybody across the board to know when to invest and what it is to invest in.

All our supply chain companies need to compete on quality, cost and reliability. We are in a global market and that can be challenging, but it also opens up opportunity. It opens up global export opportunity, too, so being able to be great on those kinds of fronts, on quality, cost and reliability, on specific elements of the process, sets you at an advantage. But everybody has a role to play in the development of the supply chain. It is not just the developers, it is Government, it is the supply chain companies themselves, and sometimes those investments that should have been made were not made and policies that facilitate that supply chain growth were not prioritised in the past.

That is not the case now. I regularly sit down with industry through groups like OWIC at a UK level and SOWIC at a Scottish level, where we have intense focus on supply chain development, because it is a critical part of the story. Again, it comes back to overall project costs. You might



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start to see that we have very strong interest in the ScotWind process, but something like TNUoS just eats up money. The regulatory system is eating up money that could go elsewhere, when it could go into innovation and into supporting the supply chain.

Industry and supply chain are around the table at the moment, particularly in the Scottish context, through strategic reviews of where we can grow our strengths and where we can work. There are a lot of success stories in this space as well, particularly if I think about ports. We have just come off the back of investments of around £40 million in the Port of Leith, and very similar investments in the Port of Cromarty. Also, Global Energy Group, at the forefront of Scotland's offshore wind journey, has invested £90 million in the last nine years to secure major storage and marshalling contracts.

Chair: I am just conscious of time, Ms Mack, sorry. I know you want to give us all these examples, and they are very helpful, but we need to move on.

Q54 **Jon Cruddas:** I have just seen on *The Guardian* online that there is apparently an escalating row in Brussels about the trade agreement and the 60% target for UK content. Is there an issue developing around future Government decision-making, the supply chains and the legacy of the trade agreement negotiated with Brussels?

Claire Mack: I don't know the detail of that conversation, but yes, of course, all the work we are currently doing on international agreements could impact on this. Again, it comes back to us making the right decisions, having the right pipeline here. You can see the vortex effect that comes. We have seen it in Humberside, we have seen it in the north-east around having a very strong pipeline and what that does for the supply chain. It brings money in. Also be very aware of all the different elements of the project, not just manufacture, assembly, commissioning, installation and maintenance, and obviously look to the opportunities from that freeports regime and the greenports regime that can come together to support exactly what we want, which is a thriving supply chain off the back of a phenomenal low-carbon transition.

Q55 **Wendy Chamberlain:** Good afternoon to all our witnesses. I want to talk about jobs as well, but I heard mention of radar and the average planning time for onshore wind farms. I want to come on to that, simply because I had an Adjournment debate in the Chamber on Tuesday on behalf of St Andrew's University, which had a planning application granted in 2013, but failure to agree radar mitigation with the MoD has prevented that project from going ahead.

Mr Hue, because you mentioned it in the first instance, what are we looking for from the MoD to improve things from an onshore perspective? Perhaps you might want to look at the content of Tuesday's debate as a result.



Matthieu Hue: Sorry, I am not aware of the specific discussion that took place. Generally, it is MoD, but it is also the airport radar. I think the challenge is that there is an onus on every developer to find a solution. The solution can be complex and the costs can be very high, so in some cases the costs are just too high to be supported by a single project. Then we need to find a coalition of projects or a portfolio of future investment to justify that investment in a radar solution, when again, if we anticipate the deployment, there is a clear case for investing in a radar solution, but that is better managed centrally than by individual projects alone. They can contribute to the costs, certainly, but the solution is way more effective if it is managed centrally. What we need is to have a discussion with the MoD and the airports on putting in these solutions that will cost less and enable more projects.

Q56 **Wendy Chamberlain:** For the project I am talking about, basically what they need is for the MoD to say what the mitigation would be and then the developer can determine what the costs would be like. Thank you very much. Do either of the other two witnesses want to come back on that? Thank you very much.

Moving on to the jobs perspective, there have been green recovery funds announced by both the UK and Scottish Governments. Certainly in the briefing that we have had in anticipation of our sessions, what is coming through strongly is the importance of the pipeline for jobs, because jobs in this sector are multidisciplinary. You need to be an engineer, and you potentially need to have some understanding of marine biology and new tech. I am interested, Ms Whitford, as I worked in military resettlement for a couple of years. At that time, service leavers had a particular interest in oil and gas, with an increasing recognition of moving into renewables.

I want to get your views on those green recovery funds. Are they going to help employers make that investment from a jobs perspective?

Lucy Whitford: From an onshore perspective, we have not seen them come through so much, maybe just because we are a little more established from the development perspective. In engineering and our roles, they definitely have a role to play in the future. As an industry, we could probably co-ordinate that better. Personally, I don't know a huge amount about them, so that probably makes me think we need to do more.

We have talked a lot about offshore and the transition, but renewable projects in more rural areas also bring investment and jobs. You will see that in the area of support services, where Claire has talked about the lifetime of the projects over 25 years. You have operation and maintenance staff or asset management staff looking after those projects. Being able to potentially stay in the area where they grew up and not have to move away is a very important thing and is something that the renewables industry can bring. You don't see that migration of



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skilled staff or skilled people away from the areas where they grew up and where they want to be based.

Wendy Chamberlain: Potentially alongside other workers who have different dynamics, post pandemic.

Claire Mack: Absolutely. I couldn't agree more that those funds are truly important. Scottish Renewables campaigned through the Scottish election for the introduction of the renewable transition training fund. We also support the establishment of a renewable energy skills centre for excellence to ensure that we can grow those skills, also welcoming the UK Government commitment to 250,000 green jobs. We are keen to see some detail around that, about just how much money is going to be available and how we are going to manage that kind of transition. We want to see that there is that provision in place.

I keep coming back to the fact that there is an attractiveness to the sector now. We have surveyed oil and gas industry workers, and 86% of them have said they would consider retraining to join the renewable energy sector if that was put in place, so there is clearly demand for that.

Just to build on the jobs that we already have, we are keen to keep underlining that renewable energy jobs are very valuable to the economy. They produce GVA per employee of £89,000, compared with the average across the Scottish economy of £50,000, and they don't have any kind of seasonal impacts that some of our other bigger sectors in Scotland certainly do.

We are keen to support the employment in onshore, offshore and hydropower that we already have, and to grow it as we go forward and start to look at new technologies, as well as building on the ones that we already have.

Wendy Chamberlain: Yes, so more detail and more communication.

Matthieu Hue: I very much echo what has been said. We very much welcome the support that has been made available for the creation of jobs. These are highly skilled, diverse and lasting jobs, everything you would like to get from new jobs, so we are very supportive of it. The industry needs more skilled and trained people with the courses that we see. We see that the job market is quite competitive, just to get the right people to do the job, so the more people we train, the better it is. We will be very keen to support such an initiative.

Wendy Chamberlain: Thank you, so sustainable in every way.

Chair: I thank all our guests this morning on our first panel. I hope you might stay to hear the second panel's evidence. Again, anything that you feel you could usefully contribute to this inquiry, please get in touch. There are a couple of things we might chase up on that have been said over the last hour or so, so we might come back to you on some of these issues, but thank you very much for this morning. Have a lovely



weekend.

Examination of Witnesses

Witnesses: Steven McMahon and Bless Kuri.

Q57 **Chair:** I can see our second panel, Mr McMahon and Mr Kuri. We will get straight into it, guys. Just for the record, say who you are and anything by way of a very short introductory statement.

Steven McMahon: Good afternoon and thanks, Chair. I am Steve McMahon, deputy director for electricity distribution networks and cross sector policy at Ofgem. As you will no doubt be aware, Ofgem is the independent regulator for gas and electricity markets in Great Britain. As part of our statutory remit, we have two equally important challenges: protecting consumers' interests today, making sure they get a fair deal from their energy, and protecting future consumers by ensuring enough investment to build a low-carbon energy system while keeping bills low.

I would like to make a couple of points on charging arrangements by way of an opening remark, reflecting on the previous session. First, how we pay for electricity networks is complicated. I think that has been recognised. It is not dictated purely by transmission costs. In line with the processes we set, the transmission and the distribution companies recover the costs associated with running the network as a whole, so to look purely at transmission costs is not necessarily the best way to ensure that we reach net zero efficiently. Overall costs are driven by a number of factors, including historical investments, the day-to-day running costs and the costs associated with upgrading the grid to accommodate more users and new connections.

Secondly, we absolutely want to see more renewable generation coming through in Scotland and across GB, building on the successes to date. We know we need to keep considering whether the current charging arrangements will remain fit for purpose for net zero or even a carbon-negative electricity system. Ultimately, our objective is a secure, affordable net zero system, where all the connected resources can contribute to their full and efficient potential and to meet system needs.

This is important: I think we need to secure a system at the lowest possible cost to consumers, and the impacts of any decisions on energy consumers are a key consideration. As Matthieu picked up earlier, it is not flawed in what we are trying to address in the difficult part of the discussion, that there is no solution where everybody pays less. The reality is that very remote projects can involve much more expensive network reinforcement and network costs. When we talk about potential costs to developers, I think Claire mentioned tens of millions. If we changed the balance of the charging arrangements and what is paid by the generators, these costs would have to be paid by consumers.



Bless Kuri: Thank you and good afternoon. My name is Bless Kuri. I am the head of system planning with SSEN Transmission. By training, I am an electrical engineer. I am responsible, day to day, for the efficient and timely system planning of connections to our transmission licence. That covers generators, demand users and other technologies. Also, I am responsible for the wider transmission reinforcement to accommodate the power flows on the wider transmission network.

SSEN Transmission operates under a licence held by Scottish Hydro Electric Transmission plc. SSEN Transmission own, operate and develop the high-voltage electricity transmission network in the north of Scotland. We are planning to invest at least £2.8 billion between now and 2026, and we have the flexibility to go up to £4 billion, depending on the need coming through. We are building a network for net zero to connect renewables and low-carbon technologies, electrification and suchlike to support the UK and Scottish Governments emissions reduction targets.

As a regulated business, we deliver critical national infrastructure. One of our strategic objectives there is to ensure it is done in a fair and just transition to a low-carbon economy. Our business plan is stakeholder-led, so we take seriously what stakeholders tell us. We explore to see what we can do to support them and what it means for our objectives going forward, so inevitably that touches on things like workforce, the economic benefits of our activities, the resilience, the national spaces we operate in and community wellbeing and wealth as well.

Through SSE plc, we have the endorsement. We are a proud sponsor of COP 26 and a signatory to the UN's Race to Zero campaign. We are the first network operator to be externally accredited for a science-based emissions target on reducing greenhouse gases, in line with the Paris agreement's most ambitious aim. We are the first also to develop and implement a biodiversity gain approach—

Q58 **Chair:** Mr Kuri, thank you for that. We don't need to go through all the questions around SSEN. We have lots of questions and we don't have all that much time, but thank you ever so much.

Can I kick things off? This is probably for you first, Mr McMahon. There are huge issues with the grid, aren't there? We are back to this convoluted debate about transmission charges. We are only a few weeks into this inquiry and we are already hearing lots of issues about access to the grid and difficulties with access. We have a grid that is basically designed to take coal to the centres of population in London and the Midlands, and we are expected to try to get to a situation where we are going to be net zero in the next couple of decades. It is not fit for purpose, is it? What do we need to do to get the grid equipped, in condition and in some sort of shape to accommodate what we need to do as we go forward to achieve and realise our ambitions?

Steven McMahon: I would say it is fit for purpose. Obviously we have to constantly evolve. There has been phenomenal success over the last 10



years around the decarbonisation of the power sector. We know electrification of heat and transport is going to bring new demands on electricity, and we need a grid that can support that. We need to make sure that any ambitions the Government have around that are not held up by a lack of capacity.

From our point of view, if you look at the price controls—the RIIO price controls, as we call them—that we settled for electricity transmission and the gas distribution networks last December, there is a £30 billion baseline of investment, with the potential for that to go up to at least £40 billion, so there is huge investment that is going to be coming through the grid.

Even a few weeks ago we had a green recovery announcement, with more on the local distribution grid, looking at what we could do on electric vehicle charging infrastructure, bringing forward investment from further down the line to make sure we could have faster progress on these decarbonisation targets. There is a lot happening. As a regulator, we have said we need to be agile. We need to make sure our regulation is fit for purpose and can respond to the challenges that lie ahead. I think that applies to transmission charging as well.

Charging arrangements go back a long way, but generally speaking there are two big costs to consider. One is the investment costs of the generation plant itself, and the other is the cost of connecting that plant to the grid. Yes, we want to meet net zero at lowest cost, and that means we need to send the right market signals that allow the generation companies to make informed decisions about how and where they connect to the electricity network. Without these signals, the overall cost of meeting net zero, which is ultimately paid for in consumer bills, would increase. That point has been made before. The further the electricity has to travel, the more expensive it will be.

Q59 Chair: Are the timescales for the grid upgrades reasonable, given the UK Government's target to reduce the UK's emissions? Just to clarify, because I know it was an exchange in the previous session, is the money from transmission charges being used to develop the grid? If not, why not?

Steven McMahon: Yes, they are. As I said, there are a number of reasons or a number of factors that charges pay for: the historical elements, which are effectively a sunk cost, then there is the reinforcement that you need to upgrade the networks and to support new users and new connections coming on. Absolutely, the money that goes into the grid is recovered. It has to be recovered, it is a zero-sum game, so it is paid either by the developers themselves or by consumers.

That point on the investment, this is based on the investment plans that the companies have brought forward, so the spend is well justified. It has been put there, that is agreed up front, but what we have also done now is make sure that we have enough flexibility to respond to things as they



change over time. It is an incredibly dynamic system that we have ahead of us, and the challenges that we face are going to move quite quickly and we need to be able to respond to that. We have built in mechanisms that will allow additional funding to respond to that over time.

Q60 **Chair:** The timescale for the grid upgrades, is it reasonable and on track?

Steven McMahon: Yes. We have just done a new price control for electricity transmission. It started on 1 April this year. These are five-year price controls, but we tend to take a long-term horizon, so it is not just purely about focusing on those areas, they are looking at what investment is required to deliver net zero in Scotland and the rest of the UK and what needs to be done now to make sure that can happen.

Q61 **Chair:** Mr Kuri, what is SSEN's view of the current arrangements in the grid? Do you believe it is in a situation and position where we can get to net zero? If not, what would you see in the way of improvements?

Bless Kuri: Yes, we believe we can get to net zero, including the 2030 target of 40 GW. However, we see that the current system is rather congested at the moment. Going at the normal pace, it will be very challenging to hit those targets, so we believe there needs to be some changes around how decisions are made about infrastructure proposals, the planning process itself and co-ordination between onshore and offshore special developments and suchlike.

Q62 **Chair:** What skills, training and development are needed to ensure that we get the necessary workforce in place to develop the grid to meet these net zero targets? Do we have the skills in place to do that?

Bless Kuri: We do. It is a tight market for resource at the moment. We see quite a lot of movement within the industry itself and coming out of, for example, oil and gas to join the industry. To give an example of some of the activities we undertake, if you look at system planning at the front end, like myself, and then you go into development, where you flesh out the designs, engage the local communities and apply technical standards and things like that, you need more people to do all this work. We see a need for ongoing training. We take graduates on, and we also take direct employment and retrain people if they join the business.

Q63 **Deidre Brock:** Mr McMahon, in the previous panel we heard from Ms Mack that Scotland is the windiest place in Europe and so clearly is best placed for the siting of many of these renewable projects, yet what I think people are having difficulty getting their heads around is the fact that, despite that, Scotland's projects are being penalised by these great additional costs for connections to the grid. Certainly from discussions I have with folk who aren't in the industry but are trying to understand what is happening here, they can't understand why those costs can't be shared across the network given, as I say, we are well placed to contribute to the net zero target that both the Scottish Government and the UK Government are keen to achieve. Can you expand a little more on that?



Steven McMahon: The further electricity has to travel, the more expensive it will be. Scotland is a net exporter. The network is effectively part of a service of enabling generators of electricity to transmit their energy to those they sell it to, so it is the foundation of the energy market. Therefore ensuring the costs are recovered fairly in a way that reflects the service each generator or consumer receives is important to the competitive market. It is based on economic principles of cost reflectivity and how far the electricity is having to flow.

It balances out on the other end, where consumers face higher transmission charges if the power they need has had to be transported from further away. Generally speaking, homes and businesses in Scotland typically benefit from this and pay much less in transmission charges as they are closer to the sources of generation. Conversely, consumers in south-east England, for example, would pay higher transmission charges as they are much further away from the source of generation.

Absolutely we recognise that, we hear what our stakeholders are saying and we are not entrenched on this. There are good, sound principles that inform our approach, but I think there is a recognition that with net zero there are new challenges ahead. We want to see more renewable generation. As part of our work on incentivising wider flexibility, we are testing whether the current transmission arrangements are going to be fit for purpose for the future. It is not a signal that any change is inevitable, but there is certainly that commitment to being agile enough to ensure that our regulation can respond to the changes that need to happen across the energy system.

Q64 **Deidre Brock:** At the last Committee meeting, I think all three witnesses who came along to speak to us recognised the fact that there had been no real research done into the grid and transmission charges for something like 10 years. They all felt there had been quite a lot of changes in that period and were very supportive of the idea of there being further research. I think one of our earlier panellists mentioned a review. Is that something you would be in favour of yourself? Is that something Ofgem is pursuing?

Steven McMahon: It is something we are pursuing. The foundation of transmission charging policy goes back to the start of privatisation, but there have been changes along the way that have had benefit to the Scottish generators and have helped support the achievement of decarbonisation targets that we have seen over the past 10 years. I don't think we necessarily see that our transmission charges are a barrier to achieving that. Absolutely, as I said, we constantly need to check that our regulation is fit for purpose, and we are looking at whether these arrangements remain fit for purpose for a net zero world, but there is a lot happening. It is not a barrier.

Professor Keith Bell gave you some stats in the last session in May that are probably worth repeating. We have about 6.9 GW of wind generation



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connected or under construction in Scotland that has used the rights to the transmission system, and then there is another almost 12 GW with consents or awaiting consents. Those projects have not been put off by the existing regime. There are some big examples that sit within that.

Q65 Deidre Brock: I remember that argument from Professor Bell, but it did occur to me that we don't know how many projects have been put off from investing in Scotland because of these transmission charges. That is something that is very difficult to quantify, isn't it?

Steven McMahon: It is, just in terms of establishing that counterfactual, but whether it has been a barrier to our renewable targets, I don't think it has. I go back to the point, because I think it is an important one, that if we reduce the charges paid by the generators, it has to be picked up in the bills. It is a zero-sum game. Those costs have to be recovered in full.

Q66 Deidre Brock: I want to move on to Crown Estate Scotland, the development of offshore leasing rounds and what work you do. What work do you do with the Crown Estate on that? Could you outline how that is working now?

Bless Kuri: Could I just add a bit on the question you were talking about just now?

Deidre Brock: Of course.

Bless Kuri: Our stakeholders, our customers, tell us that this is an issue for them in terms of achieving commercial viability for their projects. It is certainly not the only uncertainty they have, but it does add on. They bring up two specific issues. The first one, particularly in the very north of Scotland, is that the charges are very high. Obviously with the ScotWind offshore scheme coming through, where most of this generation is connected, there are real concerns within that community.

The second one is around the volatility, year on year, and the poor predictability of this cost going forward, so they add to the volatility or the risk, if you like, for the business cases for these projects. They cite these to us as specific challenges.

We also seek to understand what the reasons are when developers terminate their schemes or downsize. We do get, in some cases, network charges being cited, so I think it is important to recognise that.

Deidre Brock: Great, thank you very much.

Bless Kuri: Moving on to your question about the Crown Estate, at the moment we have what we call the ScotWind roundtable, where we speak with the Crown Estate and the Scottish Government in general, looking at all the bodies within the Scottish Government, looking at planning, marine and onshore spatial planning, trying to understand the leasing round, the specific location areas, how the grid might develop in those areas. What we have highlighted there, which is very important, and it is



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also being covered by the offshore transmission network review kicked off by BEIS, is the need for co-ordination.

If we are looking at 2030, given where we are today, there are quite a number of issues that need to be resolved for us to hit that, starting with who is going to develop the offshore infrastructure, because the current regime, you have the operators doing that, but there are certain things that need to be done for them to know for sure what they are doing there.

Clearly there are a number of things that need to be done. We are engaging to be co-ordinated on the ground in developing those solutions. There will need to be key decisions and endorsements from Ofgem and BEIS, in our view, to the plans that are coming out from the OTNR central design that is being undertaken just now. These will be helpful in order to give confidence to the industry and give certainty to communities, because they are critical for the consenting of these schemes, to stakeholders and to the supply chain if we are to meet the 2030 targets.

Steven McMahon: Looking at the challenges around offshore wind, we know that the contracts for difference process has been very successful in driving down costs. I think you have heard that already. What has been less successful is encouraging collaboration between companies and wider stakeholders. What we have is a kind of incremental point-to-point connection between the offshore wind farms and the onshore networks, rather than the development of strategically planned networks.

We need a step change in that if we are to hit the Government targets on offshore wind, particularly around how transmission is planned, developed, and connected. That will allow us to build on our success to date. We are, as part of that process, working with Government, industry and other stakeholders, including the Crown Estate, to explore the regulatory approaches that could enable that expansion of the offshore network at lowest cost. I think that will include consideration of a much more co-ordinated approach.

Q67 **Deidre Brock:** Is it your view, too, Mr Kuri, that more co-ordination is needed between all the different elements?

Bless Kuri: Indeed, but I think we also need to see bolder decisions being made by Ofgem in particular, because the current approach looks at certainty of need before investments are progressed. The slight challenge we have here is that there are lots of interdependencies. If we wait for that, if you get too much later in the decade before you make those concrete decisions, there will not be enough time to complete them.

Q68 **Deidre Brock:** I realise it is not necessarily something that you are directly involved in, but just on where things are with Crown Estate Scotland and the issuing of licences. I was approached by a company that was hoping to bid, and it seemed to be a rather slow process. Are you



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able to give any sort of update on where Crown Estate Scotland is with issuing permissions, if you like, for larger wind farms?

Steven McMahon: There are some examples. I think you heard previously about the Seagreen project, so there are things happening, but I will probably make a more general point—I think Matthieu touched on it—around planning. Network charges are not the only locational signal that projects face, so the ability for renewable developments to officially locate in places where costs are low, this is also a key consideration, and the planning regime and engagement with the Crown Estate on that is going to be an important consideration. There are these things happening, and it has some good examples about where this is bearing some fruit.

Bless Kuri: I would need to come back to you on timing, but I believe towards the end of this year there should be clarity on where these developments are going to be. That is critical in the network design, because until we know exactly where the capacity is, the grid design cannot progress.

Q69 **Wendy Chamberlain:** Welcome to both our witnesses this afternoon. My questions are primarily to Mr McMahon, but Mr Kuri, I will come to you as well. Both EDF, in its written evidence to the inquiry, and Ms Whitford from RES this morning indicated that they support making it a legal requirement for Ofgem to consider net zero in its work. I would be interested to get your view on that.

Steven McMahon: This is something that has been talked about for some time. The key point is that we operate under a statutory remit that has been set by the UK Government, so ultimately it is for them to decide. It might well be that there is a change in that remit to emphasise the importance of net zero and achieving Government targets. That is something we are very happy to engage with and, indeed, we are engaging with it. But our position is that we already have a duty to protect future consumers, which we interpret as a full commitment to achieving net zero at lowest cost. We are just getting on with that task, so the key point is we don't feel constrained in any way at the moment. We will keep that focus on keeping energy bills as low as possible while getting enough investment in the grid to build the low-carbon energy system that we need for future generations.

Q70 **Wendy Chamberlain:** You feel that you are already giving it due consideration as part of your current statutory obligations?

Steven McMahon: Absolutely, yes.

Q71 **Wendy Chamberlain:** Mr Kuri, what would SSEN's view be? Would it be along similar lines to EDF and RES?

Bless Kuri: First of all, I would like to say that we welcome the funding arrangements. The flexibility in Ofgem's funding arrangements for net zero are specifically organised to allow that to happen, so that is a



positive development. We still feel there is a case for the Ofgem remit to be widened to properly cover net zero. At the moment, we think there is probably more focus on the shorter term, and maybe on the costs borne by the specific consumers of electricity; whereas when you open the agenda to truly net zero it is not just electricity consumers, it is everyone affected. But again, I accept that there are clear lines to be drawn as to how far you go with that.

Q72 Wendy Chamberlain: Back to you, Mr McMahon. I understand that Ofgem recommended in January 2021 that an independent body be formed to lead on green transformation. Are you able to provide an update on that? What response has Ofgem had from the UK Government?

Steven McMahon: It is an important piece of work on system operation going forward. We are due to consult on that, I think over the summer. It is primarily through the UK Government and BEIS, but we are a big part of it. Proposals will be set out in the summer, and we look forward to all the stakeholders engaging in that.

Wendy Chamberlain: That is great, so something for us all to look out for, something coming in the summer.

Q73 Sally-Ann Hart: Good afternoon to our panel. I am going to follow on from Wendy, looking at the grid connection. I know Ofgem has indicated that it is accelerating investment in local electricity grids, so how will the costs of the grid connection and grid reinforcement be met?

Steven McMahon: There has been a discussion on green recovery and what the Governments are doing around green recovery. We had our own green recovery initiative. This was built over the last 12 months, following the initial crisis response to the pandemic. With the electricity networks we felt there was an opportunity, given the existing regulatory price controls still had some distance to run—up until March 2023—and that we could look at opportunities to bring forward investment that could help accelerate the decarbonisation benefits to consumers, particularly from an electric transport and heat point of view, while also delivering value to consumers and supporting a green recovery.

We were pleased that back in May we were able to announce a package of £300 million across GB, around £50 million of that in Scotland. That is effectively investment that has been brought forward from at least 2023 to support the net zero agenda. There are lots of individual initiatives that are included as part of that. As I said, EV is a big focus, but also decarbonisation of public transport and public services, like the Police Scotland fleet. It is effectively paid for through consumer bills. That is how we recover the charges, but the overall costs of that £300 million investment are very low, around 50 pence on the bill for the next two years and it falls even lower after that, but they are consumer-funded investments.

Another point to make is that of that £300 million investment, around half was from existing allowances, so underspends from the energy



networks, not in Scotland but across GB, so some of the money there is being unlocked that wouldn't otherwise have been committed.

Q74 Sally-Ann Hart: In supporting more local renewable generation to connect to the grid, what sort of renewable energy are you focusing on for individual properties? Is it solar panels or community wind farms? What is the scale? What things are you focusing on, Mr McMahon?

Steven McMahon: It is probably a combination of all those things. I suppose it depends on where you are in the country. It has been pointed out before that it is not always sunny up in Scotland, but what we are going to have in the distribution networks is access to resources that we just didn't have before. The idea of linear generation through the transmission networks into the distribution networks, that is not going to be how the local distribution grids operate in the future.

You will have much more local low-carbon generation connecting directly on to the local networks. That is something we should embrace and something we should exploit, because ultimately, if you maximise the use of those resources, you can lower the overall costs of enhancing the network to support, for example, new sources of demand like electric vehicles or heat. It would be a combination of all those things. The technology is probably going to be mixed, but it is just making sure that we can harness all those opportunities that are coming through.

Q75 Sally-Ann Hart: Mr Kuri, I don't know if this is a question for you, but please say if it isn't. How do you balance competing demands between ensuring cost reductions for consumers and the development of the UK supply chain to ensure a just transition to renewable energy?

Bless Kuri: Apologies, that is not one I can pick up just now, but we can certainly come back.

Sally-Ann Hart: That is fine. Can Mr McMahon answer that one?

Steven McMahon: The key point is that we need to be able to deliver net zero in a just and affordable way. The transition is something that will affect all our lives, and it is important that everybody can benefit from that. Making the transition to net zero is likely to incur additional costs in the short term as new investment is required and new technologies are rolled out, but these costs must fall fairly on consumers. Some examples of how we would do that: on the network side, for example, we are resetting the way we finance the network companies, including lower returns and pushing them on the cost efficiency to help achieve this, so finding ways to increase investment in the networks while trying to keep the overall bill impact as low as we possibly can.

There are also wider regulations in place, wider policies around the price cap, for example, that help give that further protection to consumers.

Sally-Ann Hart: We have to take people with us. Thank you.

Q76 Mhairi Black: Thanks to all our witnesses today. This has been very



informative. Just to pick up on something that has been touched on in the previous session and this one, I will come to you first, Mr Kuri. Could you describe the impact of transmission charges on SSEN's ability to invest in the transmission network?

Bless Kuri: This comes to the flows of money, which was discussed earlier. The charges come at the positive end, so we have our business plans approved by Ofgem, as mentioned earlier. As part of that, we are allowed to recover a certain maximum amount of revenue on an annual basis, and that is set and agreed by the regulator. The charges that are paid for by the users and how they are distributed is a function of the charging methodology, which is covered within the Connection and Use of System Code. Charges are affected by what we do in a kind of feed-forward process. I don't know if that clarifies the order in which things happen.

Q77 **Mhairi Black:** Yes, thank you. What do you think could be done to ensure that the transmission charges don't become a barrier for people looking to invest, or even just in the general success of a project?

Bless Kuri: I think the credible way to look at this is to start with what we are trying to achieve here. As was mentioned earlier, the current charging methodology was put in place 30 years ago when the disposition of generation on the network was different. Certainly the encouragement was for generation to be as close as possible to demand, to minimise the overall losses in transmitting and generating electricity.

Now we have the net zero agenda. How do we adjust that methodology to make sure we don't prohibit or impede the harnessing of the most efficient renewable resources that we have to meet the targets? This is why we are saying we think a reform is necessary and is needed now, because the stakeholders keep telling us that these charges are causing issues and not all projects are coming through. Yes, the pipeline is big, as has been mentioned by others, but even within that we see a lot of volatility. That uncertainty sometimes translates on to the grid as well, because until we get a certain level of certainty about projects going ahead, we are not able to make a robust investment case in the grid, so overall, we see delays coming through the system and we think we should remove all barriers as practicably as possible.

Steven McMahon: We consider the views of all stakeholders very carefully. I think we have a constructive relationship with the industry, but it is inevitable that we are going to disagree on some things. What we can see sometimes is them being selective in the presentation of the story. I think you have heard that before.

There are a couple of points that are relevant. First, there are vast amounts of renewables connected to the grid already and much more waiting. If transmission charges were a barrier, I would expect to see a slowing down of generation development, but I don't think we have necessarily seen that.



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Second is a key point about the impact on energy consumers and their bills. Network charges have to be recovered. The corollary of lowering the transmission charges for generators is that consumers will need to pay more, so it is a zero-sum game. I have made that point: you can't make everybody better off. That is not to say that we will not change things. There are always different trade-offs that we have to look at, but these are the sorts of considerations we have to make in looking at the transmission policy regime.

Q78 Mhairi Black: You said we would have to see evidence of a slowing down in investment before Ofgem would even take a look at the transmission charges. Where would that line be for Ofgem?

Steven McMahon: I don't think it is necessarily the case that we would have to see a slowing down. It is more about the principles. Within the network charging arrangements, they need to align to the competitive market. We need to ensure that they work together and that they have the investment and behavioural price signals in the right place to drive the changes that are going to be needed for a net zero energy system. We know that we need low-carbon investment, we know that we need investment in the networks and we know that we need flexibility to deliver this future world that we are approaching. Network charging needs to underpin that. I think it is about being able to look across these issues and test whether the existing arrangements will not just get us there, but get us there in the most efficient way.

Q79 Mhairi Black: Lastly, just following on from that, do you think there is any way in which the current transmission charging system could better align with the UK and the Scottish Government's priorities for net zero? Is there anything you think could be better?

Steven McMahon: We have a set of principles that talk about cost reflectivity. We would argue against any suggestion that they are fundamentally opposed to the Government's ambitions at the moment. It is also the case that we go through reviews. There are different elements of charging that we look at over time. We can always consider if there are immediate changes that we need to make outwith any longer-term considerations. That is something that we are doing now. We are looking at net zero. We are looking at full chain flexibility and our programme behind that, and thinking about how all the component parts need to fit to make sure that we have the right set of regulatory arrangements to set us up for the next 10 to 15 years.

Mhairi Black: Excellent, thank you. Mr Kuri, do you have anything to add?

Bless Kuri: No, thank you.

Chair: Thank you to both our witnesses. It has been a fascinating session this morning. This is only the second oral evidence session that we have had in this inquiry, and I think we better understand a range of these issues. I know Lucy Whitford is still listening in, so I just want to thank



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you, too, Lucy, for coming along this morning. It has been very interesting. I know there are a couple of things we might want to follow up on, and I am sure the Clerks will get in touch with you if required, but for today, thank you for your time.