



Scottish Affairs Committee

Oral evidence: [Renewable energy sector in Scotland](#), HC 745

Wednesday 24 February 2016

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Written evidence from witnesses:

- [Scottish Renewables](#)
- [Edinburgh Centre for Carbon Innovation](#)
- [E3G](#)

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Members present: Pete Wishart (Chair); Mr David Anderson; Kirsty Blackman; Mr Christopher Chope; Margaret Ferrier; Chris Law; John Stevenson; Maggie Throup

Questions 1-67

Witness: **Niall Stuart**, Chief Executive, Scottish Renewables, gave evidence.

Q1 Chair: Good afternoon, Mr Stuart, and welcome to the Committee. This is our opening evidence session on Government policy on renewables in Scotland, so we are very grateful to have you along as our first witness in this inquiry. I hope you are going to be gentle with this Committee today when we are asking you some questions. The intention of this session is to get an overview of the sector and there are a few questions that we want to ask, obviously, about what we see as the impact of Government policy, which has been restated of course in the past few months. I do not know whether you have any opening statement you want to make, and perhaps tell us who you are and who you represent.

Niall Stuart: Yes, of course. My name is Niall Stuart. I am the Chief Executive of Scottish Renewables, which is the representative body for the renewable energy sector in Scotland. We represent 260 organisations involved in the sector, from members of the Big Six right down to individuals and small companies in the supply chain and very small developers.

The key thing I would like to get over right at the outset of today, and right at the outset of the inquiry, is that the terms of reference talk a lot about the policy framework required to maintain stability in Scotland's renewable energy sector. I would also encourage the Committee to think about the policy framework that is required, so that Scotland's renewable energy sector contribute as much as possible to the Government's overarching aims in energy, which are ultimately around cutting carbon emissions, keeping bills down for consumers and, of course, increasing energy security. I am sure all of those things are going to form part of the questioning over the next 45 minutes to 60 minutes.

Q2 Chair: They most certainly are. Could you give us a flavour—this is the first question that this inquiry is going to ask—and an overview of the scale of the renewable energy sector of Scotland and what its contribution to the Scottish economy is in your view?

Niall Stuart: Renewable energy is now Scotland's main source of electricity. It generates the equivalent of over half of the annual demand for power in the country. Our estimates are that there has been over £1 billion invested in the sector each year over the last few years. BIS commissioned research last year, which suggested there are 21,000 jobs now supported in the sector, so I think it is clear that renewables are now a major part of Scotland's energy sector and also a significant part of our economy and a significant source of employment in Scotland.

Q3 Chair: You said in your evidence that the growth of the renewables sector in Scotland has been down to support of policies both at Holyrood and Westminster. What specific policy has been most effective in enabling the new renewables sector in Scotland to grow? What have you observed that things have worked?

Niall Stuart: There is a whole package of support and I think it is important to remember—again, right at the outset—that renewables are not necessarily an end in themselves but they are absolutely a means to an end. Those ends are: cutting carbon emissions, increasing energy security and keeping bills down for consumers. If you think about the policy framework that has driven the growth of the sector, I think you have to go all the way back and all the way up to the European targets for renewables, and the UK's target of 15% of all energy use coming from renewables by 2020. That is the overall aim in terms of renewables. That in turn required a whole series of interventions. Probably the most important of those at a UK level has been the Renewables Obligation, which has driven the growth of the sector. That is really what has seen the sector in Scotland triple between 2007 and 2014. It reached the levels of output that I have talked about.

If you widen it out from electricity there is a massive challenge in terms of how we increase the proportion of heat we get from renewables. Heat is something like 50% of Scotland's energy use and only 4% of the heat we use comes from renewable sources, so there has been fast, relative growth—again, a tripling between 2009 and 2014—of renewable heat. We are still on that 4% but again the renewable heat incentive is what has driven that.

Q4 Chair: I am looking at some of the figures, which I think you supplied, suggesting that it contributes around 0.7% of GDP in Scotland, and there is an estimated 21,000 people working in the sector. What sort of jobs and activities would these people be doing?

Niall Stuart: Again, there is a massive range of skills employed within the sector that the sector pulls in, so there is a massive spread from people in advisory services, professional services. I think if you speak to many people in that sector, they will say that the growth in renewables came at a massively important time with the big downturn in the property sector and that renewables allowed us to maintain many, many jobs in financial services and legal services, which we would not otherwise have had. It has been a massive boost to the civil engineering sector. Scotland has developed a real expertise in many aspects of technical and environmental consultancy, so you have companies like Sgurr Energy and Natural Power, which are based in Scotland but operating all over the world, managing windfarms all over Europe, and designing windfarms all over the world. It is a massive spread and of course now, with increases in the small scale renewables, you increasingly see small construction firms specialising in solar installations or biomass boiler installations, so it is very difficult to give you a clear sense of the range of skills but I think in many ways it probably touches just about every part of Scotland's economy. The other thing about renewables is of course those jobs are incredibly widely spread around the country. They are not all in Glasgow or Edinburgh and Aberdeen. They are diffusely spread all over Scotland.

Q5 Chair: The sort of thing that interests this Committee is the range of skills and jobs and the employment opportunities that exist in every community and in every constituency in Scotland—I represent Perth and North Perthshire and I see that all the time—and we are hoping to try to discover a little bit more about what makes that work and how these function, what part in the economy they play. Do you have a view: if there wasn't the support given by both the Scottish and Westminster Governments, could you see that this sector would have grown in the way that it has grown in the course of the past 10 years?

Niall Stuart: There is no question that the sector would be anything like the scale it is today. We would have seen marginal growth at best over the last 10 years if it had not been for the supportive environment here at Westminster and also, of course, the supportive environment in terms of the overarching aims and objectives of the Scottish Government, its 100% target, the previous 50% target, and the approach that they have taken to making sure that we get as fast a growth as possible of renewable energy in Scotland.

Chair: Thank you for that.

Q6 Kirsty Blackman: I want to ask a few questions about the impact of recent policy announcements. Obviously there is the closure of the Renewables Obligation for onshore wind, the delay in the Contracts for Difference, the next round of that, and restricting the Feed-in Tariff scheme. Can you tell me what impact these have had?

Niall Stuart: The early closure of the Renewables Obligation for wind, paradoxically, is unlikely to decrease by a huge amount the number of megawatts that will ultimately get built under a Renewables Obligation, but I think it has undermined investor confidence in the sector and made people nervous about what decisions there may be in the future. That announcement was made eight or nine months ago around early closure of the Renewables Obligation, and here we are four weeks before it is due to take effect and we still do not know the terms by which it will take effect because the grace periods have yet to be defined in law. I would guess our members will probably have a week's notice in terms of how the grace periods are defined in law when the Bill finally reaches royal assent. All of that has been very damaging and, as I say, paradoxically, I think has made a very small

difference. I think DECC's own impact assessment suggests it will save something like 20p a year to consumers¹. I would say the negative impacts are disproportionate to the very small potential financial benefits.

In terms of the Contracts for Difference mechanism, I think the issue really is uncertainty. It was always expected that we would have the first allocation round, which concluded and was announced last February. It was expected there would be another allocation round beginning last summer concluding winter 2015-16. That has not taken place. It took until roughly then for Ministers to set out when there would be a future CfD allocation. At this stage there are many more questions than answers, so we know the rough timetable for the auction to take place. We don't know what budget will be available, so people don't know what budget will be available to support their projects. We don't know the prices that are likely to be set as caps in that auction. We don't know if the Scottish Islands Renewable Project, for example, will be able to bid into that auction and, therefore, we are still waiting to know if we will have a framework in place to get Scotland's islands connected.

There are also questions around, if there is an auction this autumn, when will the successful bidders be able to build because it may be that those projects are for this side of 2020 and will make a contribution to the 2020 targets, or it may be that DECC say there is no more budget available this side of 2020 and, therefore, projects will not be able to commence until the 2020s, so there are a huge number of questions around the future CfD allocation round and if I could encourage the Committee to make one recommendation to Government, it is to provide as much detail on these things as soon as possible.

Q7 Chair: When they prepared the manifesto, whichever party, that they are now only honouring, surely you should have been ready and prepared for these types of announcements and policy changes looking forward. I know they brought ROCs forward a year early but, other than that, was there not an expectation this would happen?

Niall Stuart: The Conservative party manifesto if I remember correctly said, "We will end new subsidies to onshore wind". That could have been done in many, many different ways. In fact, subsidies to onshore wind through the Renewables Obligation were due to finish anyway in 2017. My understanding of a manifesto is that it is normally for a programme of Government and commitments are made for that five-year term of Government. I don't think you can say that it was a clear statement of intention by the Conservative party that if they came into Government they would close the Renewables Obligation a year early because that is not what the wording in the manifesto said.

On the question around the Feed-in Tariff, there has been a comprehensive review of the Feed-in Tariff that has resulted in pretty drastic cuts to the number of tariffs for different technologies, so again I would encourage the Committee to monitor the impact of those tariffs because I know, for example, members in the hydro sector have said that they believe that the tariffs that have been decided on by DECC make future investment in that hydro sector unviable, and I think it is important that we monitor just what happens and if tariffs do prove to be unviable that we revisit those at an appropriate time.

¹ Witness correction: DECC's impact assessment suggests this would save 30p a year to consumers.

Q8 Kirsty Blackman: I have a few more questions to follow on and expand on some of the points that you mentioned. There are obviously several different changes to fiscal policy and to subsidy, I suppose. Do they hit different areas of renewables differently or separately, or is there a cumulative impact on one particular sector or is it just across renewables in general?

Niall Stuart: The lack of information on future intentions is probably equally damaging across the sector, but if you start to break out different bits of the sector, for example, I have not talked about renewable heat yet. There is a renewable heat incentive in place to support investment in renewable heat and until November of last year we did not know if there would be any budget beyond 31 March this year, so you had businesses with questions about investing, whether to go ahead with schemes or not go ahead with schemes because it was not clear five months out whether or not there would be a budget in place to support that scheme into the future. We now have clarity. There is a budget in place and what it is but we are still to see what the changes are.

If you look at offshore wind the Secretary of State was fairly clear in her reset speech that there would be an allocation round later this year, which will allocate money to pot 2 within the CfD framework, which means there will be budget for offshore wind to bid into, so they know there is an auction taking place. They know they will be able to bid into it but we do not know what the timescales will be for the successful projects or what budget will be brought forward and, therefore, what size projects are able to be taken forward.

If you look at onshore and solar, I think both of those sectors are left with no real answers as to whether they will form part of the future Contracts for Difference framework and, if so, on what basis. Therefore, projects that do not already have a Contract for Difference or projects that cannot make the Renewables Obligation deadline, as we understand them to be, are left with the choice of investing speculatively in the project until we see what policy framework there is to support it or deciding that they will walk away from their project. It is different for different sectors because the mechanisms to support different sectors are different.

Q9 Kirsty Blackman: Picking up on the revenue supported options, do they have research and development impact and, if they do have a research and development impact, does that mean that in future renewables will not be able to get as cheaper as they would like to get? That is really badly phrased but—

Niall Stuart: One of the very positive aspects of the Secretary of State's reset speech is that there was very much an emphasis on research and development and innovation, and a real commitment to put significant financial investment into research and development in clean energy in general. Around half of that I think was pledged for research into nuclear and specifically small modular reactors, but the other half is therefore open for technologies in the renewables sector or in supporting sectors like storage, so I think there is an opportunity to increase the levels of research and development.

To answer your question in a slightly roundabout way, I think the issue is that there is a danger of a real hiatus in the industry. We saw the first Contracts for Difference allocation round deliver serious cost reductions: onshore wind reducing costs by something like 15%, solar by more than that. The tragedy for me in all of this is that we took something like five years to develop the electricity market reform programme. We developed the CfD framework. In the very first round of allocation under that framework we saw it deliver exactly what it was designed to do, deliver significant cost reduction for consumers, and I

think the tragedy is if we had had future allocation rounds where onshore wind and solar and other technologies could bid in, you would start to see significant further cost reduction. Then renewables could really start to put some daylight between themselves and what other people might see as an alternative such as nuclear, with wind already at £80 a megawatt hour and nuclear at £92.50 under the deal for Hinkley Point. But I do believe if we have further allocation to onshore wind and solar you will see significant further cost reduction and significant further daylight between those technologies.

Q10 Kirsty Blackman: Just one last question: in terms of what the Government and the UK Parliament could do in order to ensure the future of the renewables industry and I suppose increase investor confidence—because that is one of the things that I am having raised with me the most—is to have a long-term plan, so a five or 10 year, “This is what will happen” and have that written down and make sure that that is what does happen. Would a long-term plan be the best thing?

Niall Stuart: Again, as I said in my opening remarks, I don’t think the Committee should be here to necessarily look at what the renewables sector needs. I think you should be looking at what policies need to be in place so that the renewables sector can deliver to the very clear objectives of Government around energy security, cutting carbon and keeping down bills. To do that the Energy and Climate Change Committee have said you need significant further growth on renewables, probably around a doubling of renewable electricity capacity, from what we have today, to what we need in 2030 to hit the fifth carbon budget. To me it is about what policy framework you put in place to deliver that and, as I have already talked about, it is long-term certainty. It is giving people clarity on the Contracts for Difference framework and it is around putting in place a framework that continues to drive down costs for consumers, continues to scale up the industry and that does not artificially throw out the cheapest forms of renewable energy, that is, onshore wind and solar.

Q11 Chair: We are hoping to speak to the Energy and Climate Change Committee and Policy Exchange during the course of this inquiry. They have both recently stated that policy should proceed on the basis that onshore wind will be subsidy free by 2020. Scottish Renewables have argued that the early withdrawal of subsidy means that the onshore wind sector cannot continue the current trajectory of reducing those costs because of lack of confidence and the lack of investment that might be given because of recent policy announcements. Is that something that you recognise?

Niall Stuart: I think you have to go back to the principles that underlie and inform the electricity market reform process. That was clearly around reducing risk for renewable energy projects by doing so, lowering the cost of capital, allowing people to take a long-term view, giving people a longer line of sight and therefore certainty, driving down risk and driving down the cost of deployment over the longer term. All those arguments still apply to onshore wind and solar. Again, I come back to the task at hand, which is decarbonisation of the energy system at the lowest cost to the consumer. I firmly believe that continuing competition for Contracts for Difference across all forms of renewable technologies is the most cost effective way to achieve that.

Q12 Chair: On recent Government policy announcements, I think the UK Government’s intention to end support for onshore wind a year early came as quite a shock and surprise to

Members of Parliament here. Was that equally a surprise to the sector when it was announced?

Niall Stuart: Yes, because, as I have said already, the manifesto commitment was around ending new subsidy support to onshore wind. There were a number of ways in which that manifesto commitment could have been implemented one of which was to allow the RO to continue to 2017 as was already scheduled. Yes, we were surprised when that announcement was made. I think we were also surprised at the means by which it has been implemented; that is, an Act of Parliament that has resulted in the situation that I have already outlined where, with four weeks to go to the new deadline for the RO, we still do not know what the grace periods are because they are still to be decided in the final stages of the passing of the Energy Bill.

Chair: Thank you for that.

Q13 Chris Law: It is of particular concern to me, because the city of Dundee has been trying for the last few years and it is in the middle of a bidding process just now to get long-term renewable jobs into the city. I have a few questions, and one of them is regarding the forecast published last July that indicated Government spending would be about £1.5 billion over, which is going to be over the limit set by the Levy Control Framework. The Energy and Climate Change Committee said the cap is set at a level that is sufficient to meet 2020 carbon targets. However, I would add that they did say, “Action to limit spending could risk undermining investor confidence”. Would you agree with this position?

Niall Stuart: I am not quite sure which part of the question you want me to focus on or which position you want me to—

Chris Law: The first part being about the cap of £1.5 billion and also the Energy and Climate Change Committee saying the level was sufficient to meet 2020 carbon targets.

Niall Stuart: I think there is general consensus that we will meet the intended level of renewable electricity in 2020, which is 30% of the UK’s electricity coming from renewable sources. I think there is also consensus on the wider question of whether the UK will be within its carbon budgets at that stage? The Secretary of State herself has been very open on our not being on track to meet future carbon budgets later than the 2020s and, of course, is actively considering how we meet the fifth carbon budget, which was published by the Energy and Climate Change Committee last autumn. If you look at 2020 I think there is agreement that we are on course to hit carbon budgets. The big and more difficult questions are beyond that and out to 2030 and, as I have already said, the scenarios that the Energy and Climate Change Committee have published show that the most cost effective way of meeting those targets is significant further growth in renewables.

Q14 Chris Law: Do you think there would be alternative ways of reducing expenditure other than what was put forward by the UK Government proposals?

Niall Stuart: There have been a series of changes since May. Among those, for example, has been a decision not to continue the competition for capital support for CCS. That money was not included within the Levy Control Framework, but we understand there was provision made within the future Levy Control Framework for revenue support for carbon capture and storage once those schemes were generating. I think we also understand there

was likely to have been provision made, for example, for the Swansea Bay tidal lagoon. Most commentators would agree it is extremely unlikely that we will have carbon capture and storage generating this side of 2020. Therefore, that provision probably is not needed.

There are questions to be asked around other commitments that were maybe in there a few months ago. I think the key thing for us is, when we have the Budget next month, that we do get a clear update on where the Levy Control Framework is at that moment in time and what have been the impacts of the changes that have been made over the last six to eight months, and also detail on how those conclusions are reached. Again, there is a sense within the industry that the Government and the OBR have published a number but it is very difficult for us to get behind that because there are no detailed calculations made available to understand that £1.5 billion potential overspend in the Levy Control Framework.

Q15 Chris Law: That leads to my last point: obviously you pointed out the conflict between the UK Government's withdrawal of support for onshore wind and its desire to control costs of renewable electricity, and of course they have brought that forward a year early. What do you think motivated this?

Niall Stuart: There are different things we can look at. The narrative has been around cost and I find it hard to accept that you save costs by excluding the two cheapest technologies. A lot of the talk has been about onshore wind but you can equally apply that to solar. A lot of talk has been around the fact that wind is a mature technology, yet we are still happy to subsidise nuclear, which has been around since the 1950s and 1960s and we are happy to subsidise nuclear at a significantly higher cost. So I am not the right person to ask about the motivations that lie behind that decision but I don't think it is consistent with the Government's overarching objectives that I have already outlined.

Q16 Chair: We have had conversations and debates within Parliament—and you do not have to comment about this—about this particular Government's attitude towards onshore wind. There does seem to be an almost ideological element to that, where there is a sense about protecting local communities, about windfarm applications. Is there not something included in the Energy Bill that communities would have the last say on any windfarm proposals? I don't know if you have a view about how helpful that is as a way forward. You do not have to discuss or tell this Committee about the politics of any of that because we will obviously be asking respective Ministers about their approach to these things, but is this a part where politics meets energy, meets energy security and means making sure that we are able to meet energy targets?

Niall Stuart: I think that relates to the last question because another argument that has been put forward has been views on the visual impact of onshore wind development. My argument would be: use planning powers to control and guide development to the right places or to places where you can ensure that things only go ahead if there is clear and demonstrable local support. Do that through the planning system rather than through the Contracts for Difference mechanism.

In terms of your question, energy is an inherently political debate. I remember being asked a similar question or a witness making a similar comment in a Scottish Parliament committee. I think all the questions around future energy policy are, by definition, political. Whether you back the growth of nuclear power or whether you back the growth of renewables, whether you

believe in Climate Change or you don't believe in Climate Change, and the actions that you believe should follow, all of these are inherently political questions.

Chair: We will leave it there.

Q17 John Stevenson: I have a follow up on that: how does the renewables industry in Scotland find the local planning authorities in different councils up and down Scotland?

Niall Stuart: The planning authorities obviously have a process to follow and they have a clear and important responsibility in terms of the management of development. I think our members have to and do understand that. Where there are frustrations is where members perhaps feel that the process has not followed the agreed guidelines, it has not followed agreed standards or has taken longer than they would generally see as a reasonable timescale to consider their application. But I think on the whole our members understand that local authorities and planning authorities in general have a difficult job to do in balancing up many, many, many different responsibilities.

Q18 John Stevenson: As I understand it, in Scotland there are a large number of renewable projects in the planning or construction stage. Clearly you are concerned about the policy framework around that, and whether momentum around is lost in terms of future programmes and the ones that are already underway. What do you think needs to be done to ensure that there is that momentum continued to ensure that the momentum does continue?

Niall Stuart: I think the reset speech set out some of the fundamentals to achieve that. The Secretary of State said there would be three CfD allocation rounds in this Parliament. That was the Government's intention. What we need now is some clarity as to what those allocation rounds will look like. As I have said already: what will be the scale of the budget? What capacity will that take forward? Will there be allocation to pot 1, which is where onshore wind and solar sit or will the allocation be made to pot 2, which is where offshore wind sits? Will projects be able to commence generating this side of 2020 or after 2020? That is not an academic question because there are a number of projects, for example, which have been offered European funding that have to meet certain timescales to comply with that funding. If the money is not this side of 2020 that potentially causes them difficulty. Projects have signed grid agreements. When you sign a grid contract you enter into a contract that has liabilities on you as the developer long before you start generating, and they have signed those contracts based on their best assessment of the likely outcome at that time. It is really to know when they will be able to bid for a Contract for Difference and when that Contract for Difference will be able to be accessible.

One more difficult thing is a sense of direction of travel—not just immediate decisions around what is coming in this impending Contract for Difference allocation round, or the one after, but what is Government's overarching sense of ambition for renewables and what role does Government see for renewables in the overarching objectives of energy policy?

Q19 John Stevenson: Do you think the recent policy changes have stopped the momentum that there was, and do you think that the clarification, which you are suggesting is coming from Government, will improve that?

Niall Stuart: I don't think there is any question that once we see the projects that already have a CfD, projects that can make the RO deadline, once those projects are built or as we get close to those projects being built, there is inevitably going to be a loss of momentum. I think the priority for us as an organisation—and I would like to encourage the Committee to do the same—is not so much looking back but looking forward at the things that would restore confidence and restore momentum to the industry.

Q20 John Stevenson: What would your priority on that score be?

Niall Stuart: It depends on the question earlier around different parts of the sector. For large-scale renewables, it is clarity over the intentions of the CfD allocation framework. What is the future Levy Control Framework? When is it going to be released? Which technology is going to be eligible and what are the timescales they are going to work within? Will islands be able to bid in? On the smaller scale end: what is the process for monitoring the impact of the Feed-in Tariff and the impact that has on deployment? For the heat sector we understand the Department of Energy & Climate Change intends to publish a consultation on the future of the renewable heat Incentive, and changes there will again have a big impact on the future of the sector.

Q21 Chair: The Energy and Climate Change Committee are currently undertaking an inquiry about confidence in the sector. Presumably you will be having some sort of input into that too. Before we lose this point on planning: I think all of us and particularly the Scottish Members of Parliament of this Committee have been approached—I have certainly been approached—by windfarm developers who are currently in the planning process. They have come to me seeking clarity or are confused as to exactly where this leaves them. They have described it as a limbo period or process, where some of them have secured planning permission and can now go ahead but are concerned about the support they are going to secure or receive through ROCs or CfDs. Is that something you recognise, and how many businesses and developers are possibly in that limbo situation just now?

Niall Stuart: It is hard to put a precise number on it but, essentially, any developer who has a project that cannot make the Renewables Obligation closure deadlines and who does not have a Contract for Difference is, to a greater or lesser extent, in the dark at this moment in time. If they are in an offshore project hopefully they will get some clarity in the coming months when we see the notice for the next allocation round.

In terms of onshore and solar, the first Contract for Difference allocation said that there would be a future allocation and there would be a budget made available to pot 1. The latest information we have come from the Secretary of State's appearance in front of the Energy and Climate Change Committee where she was asked if she thought that onshore wind would form part of the next allocation round, and she said, no, she didn't. All that people in the onshore wind sector know right now is that they cannot expect to be part of the next allocation round and we do not know what is likely to be in place thereafter.

Q22 Chair: What is likely to happen to them then? What will I say to developers who are coming to me as a constituency Member of Parliament concerned about that? What is your view about what is likely to happen?

Niall Stuart: You might have to make why that is a challenge to you, why that is a problem for the country, very, very evident to the Secretary of State, so that the Government understand that they cannot allow the industry to continue to be in the dark around the future policy framework to support investment in renewables.

Chair: Thank you for that.

Q23 Mr David Anderson: Can I start by saying I was hugely impressed in reading the brief at just how much of a market renewables are delivering. Obviously I understand hydro is a source that most of us do not have. As you said, you are delivering more than half of what is actually used in Scotland. If there had not been these policy changes, how much more do you think you would have been delivering than you are now?

Niall Stuart: I don't think it would have an impact today. I think the impact is very much looking ahead. For example, there is roughly 700 megawatts of onshore wind projects in Scotland's islands, which can only go ahead if there is a Contract for Difference mechanism that they can bid for. There is something like 3,000 megawatts of offshore wind projects across three projects in the North Sea, all of which is waiting to know if it will be able to bid for a Contract for Difference depending on the budget that is set out. We produced some analysis last year that showed the Scottish Government's target is by 2020 for Scotland to generate the equivalent of all the power consumed in Scotland.

Mr David Anderson: Through renewables?

Niall Stuart: Yes. It is impossible to say that if there had not been the changes we would have met that target, but it would have given the offshore projects a chance to bid for contracts already and potentially to have won contracts already and be in the process of getting ready to build out the projects before 2020. That probably could have made the difference between reaching where we think we will be, around 85% by 2020, and hitting that 100% target. But right now the challenges we see are around the future.

Q24 Mr David Anderson: Yes. Whenever we have this debate people always go on about base supply. If you move to where you are, the 85% or 100% over a period of time, what would you say has been supplemental to locate the base supply there in case you need it or when you will need it?

Niall Stuart: The target, like the UK's target, isn't that it is all generation. The target is that our sector produces the equivalent of 100% of demand. I think it is likely that we will still have potentially a gas-fired power station at Peterhead and potentially two nuclear power stations at Hunterston and Torness in 2020. What that would allow Scotland to do is to carry on being an exporter of electricity. Last year Scotland exported roughly 25% of the power that it produced. It is not about Scotland being 100% reliant on renewables. It is Scotland generating the equivalent of 100% renewables and, in so doing, making as big a contribution to the UK's renewables targets and climate change targets as possible. Certainly last year and, we reckon, out to 2020, Scotland will be roughly 30% of the UK's renewable power output.

Q25 Mr David Anderson: The other things that we understand the Bill has to consider is that, by and large, we have done quite well in getting electricity generation through

renewables but two of the bigger issues are heat and transport. What is being done to try to deliver on that?

Niall Stuart: A number of things. Probably the first line of attack is actually migrating demand for heat and demand for transport to electricity, so you see an increase in electricity vehicles and that becoming increasingly important in the future. You see people moving away from fossil fuels for heat to use things like heat pumps, for example. We see an increase in demand for electricity and a move away from fossil fuels for heat and transport to power. Then there are lots of other things we can do in terms of using waste to create biofuel, for example; much greater use of biomass, for example; potentially combined heat and power; potentially district heating. Again, a bit like the power sector, there is no one answer to the challenge of how you decarbonise the heat sector. You need to do all of these things and more.

Q26 Mr David Anderson: Would you have the capacity to do that? One of my worries is the constant change, and this has gone on for a long, long time, where markets effectively have paid for one thing and then another thing. My classic example is carbon capture and storage, which we have talked about for so long. It has a longer beard than me. Now it is just not going anywhere. If you want to get on with this, the sort of things you are talking about, do you think the industry would buy into it because you are asking them to take big risks, aren't you?

Niall Stuart: Sorry, I didn't catch that.

Mr David Anderson: You are asking industry to take big risks if you are saying they should start diversifying into other areas, if they are not sure the policy framework is going to support them going forward.

Niall Stuart: On that basis, I think this inquiry comes at a really opportune time because the kinds of decisions I have been talking about will be made over the coming weeks or months. It is the consultation on the renewable heat incentive, for example, which will determine the future market for renewable heat. It is the Budget that is likely to set out the magnitude of the future Levy Control Framework to support further growth in low carbon electricity, including renewables electricity. I think roughly by May or June the Secretary of State must publish the allocation round notice setting out the terms of the auction process for Contracts for Difference, if we are to meet that quarter four timeline that she outlined in the reset speech.

So we can look back and we can rake over all the decisions made, but the key thing for me is that we look forward and we assess exactly how we do what you have just outlined, which in summary is effectively give people confidence to invest in the future and put in place the capacity of low carbon and renewable power, heat, transport that we are going to need to meet the fifth carbon budget. That to me is the task at hand.

Q27 Mr David Anderson: One last one: in terms of heating the home, I am guessing—but it is probably right—that proportionately there will be more people living in Scotland off the grid than probably the rest of the UK put together. Are people buying into it in a big way do you think? One of the things is going to be cost for people. Are they being helped? Are they being supported or are they working on it?

Niall Stuart: It was always intended that the renewable heat incentive's initial focus would be on homes and businesses off the gas grid, because they were the ones who were forced to use the most carbon intensive heating and the most expensive carbon intensive heating. I think it is partly that, therefore, that has driven a higher uptake in Scotland. I think Scotland has 20% of registrations under the renewable heat incentive, so it is partly that. I would guess there is also potentially a much stronger local supply chain and local links between suppliers of wood pellets, suppliers of biomass heaters and the communities they serve and, therefore, it looks and feels like a more logical solution for consumers than maybe it does in other parts of the UK.

Q28 Margaret Ferrier: Niall, I would like to focus on the co-ordination between the UK and the Scottish Government. Given that they have their own carbon emissions targets and energy strategies, effective co-ordination and energy policy is obviously extremely important. So do you believe Scottish and UK energy policy is joined up?

Niall Stuart: In some areas I think it is and it has been. For example, the Islands Renewable Delivery Forum has been co-chaired by the Minister for Business, Energy and Tourism in the Scottish Government and the Secretary of State here at Westminster, and has got us to the stage where we can see that links to the islands are viable if projects and islands are able to bid into the Contracts for Difference mechanism.

I think there have been examples of where Ministers and officials have identified problems and worked closely together. However, on the wider objectives, I don't think there has been a huge amount of co-ordination over the last eight to nine months.

Q29 Margaret Ferrier: How would that impact then? You have probably covered some of it already but how would that impact on the renewable sector, and is there any advice you can give them as to how co-ordination could be improved?

Niall Stuart: The key thing for me is to come back to that statistic of Scotland providing 30% of the UK's renewable electricity. By definition, it has a key role to play in the UK achieving its renewable energy targets. We would like a sense of a more joined up and shared sense of the challenges ahead and, therefore, a shared sense of the solutions that we are going to put in place to encourage and keep the momentum of the sector and continue the growth of the sector.

Q30 Margaret Ferrier: I have one more question then. That leads me on to this next one that the Scotland Office is responsible for representing Scottish interests within the UK Government. The Smith Commission proposed that the Scottish Government should play a greater role in designing renewables incentives, so how would you characterise the way in which interests in the renewable energy sector in Scotland have informed recent policy shifts by the UK Government?

Niall Stuart: Again, I think they have to look forward and there is a clear onus in the Energy Act on Ministers consult the Scottish Government, and also Welsh and Northern Ireland Ministers, on any changes they make to renewables incentives. We have not seen any changes in design to those incentives, per se, and to me it is almost a cultural thing rather than a legislative thing. The legislation sets out what I think we would all agree are minimal standards of consultation. We would like to see Ministers from Scotland sitting

round the table with Ministers from DECC agreeing the contribution that Scotland can make and how that is best achieved, because if the UK is to meet the levels of renewable deployment that we think are necessary to hit our future climate change targets—the agreement that was made in Paris last year—Scotland is going to have to make a disproportionate contribution.

Q31 Margaret Ferrier: How does this compare then to the level of consultation that was recommended in the Smith Commission?

Niall Stuart: Again, we have to look forward. There is also a question of: how do you define what constitutes a design of renewables incentives? If, for example, as we expect there could be, there is £0 budget allocated to pot 1 in the future CfD allocation round, that has the same impact as a change to the design of the scheme. That is, there will be no budget made available to onshore wind and solar and other mature technologies. Right now that is not a decision that UK Ministers would have to consult Scottish Ministers on in my understanding. I think it is incredibly complex. It is probably impossible to define all of this in legislation. I come back to: I think it has to be more of a cultural or a softer thing in terms of commitment from both Governments to work together to meet what is a common, shared challenge.

Q32 Chair: It was quite interesting—and I think you said this in the written evidence you provided to this Committee—that we provide a disproportionate amount of the energy required by the UK to meet its international obligations and targets. Is there a sense that the UK Government in your view does not quite understand that and does not respect the fact that Scotland makes this significant contribution to meeting its own energy targets?

Niall Stuart: No, I would say that was well understood by the previous Government. I think it is also understood by this Government that Scotland has significant potential for further development onshore—further development in the area that we have talked about of renewable heat—and also huge potential offshore in terms of offshore wind but also wave and tidal technologies, for example. I think it is well understood that Scotland plays a key role in the development of renewables in the UK, in terms of the mature technologies and the less mature technologies, like offshore wind, but also in things like research and development and that there is real expertise in Scotland, for example, in the development of the ways we are going to have to manage our electricity network in the future. Whether or not we have more renewables or more nuclear, whatever we have, the network is going to need more active management. Scotland has expertise in that area and Scotland also has expertise in the area of energy storage, which is going to be a major global market and is a major opportunity for the country and the businesses that develop the technologies that will provide energy storage at large-scale and commercially feasible cost in the future.

Q33 Chair: One thing this Committee has also been told and we are looking for evidence is, “Don’t forget hydro”. You talk about the mature technologies that we have in Scotland and, again, after onshore wind it is hydro that provides the biggest contribution to our renewable output. Is there any concern that you have about what has been announced in Government policy that hydro needs to be particularly worried about?

Niall Stuart: I think there is a concern about what has been announced and a concern about what has not been announced. Hydro really has two futures at the very large end of the

scale, in terms of potential for future pump storage schemes, which would play a vital role in balancing the grid and balancing the output of wind. As you will know, SSE have plans for two schemes, both significant. I think both are in the region of 600 megawatts. The challenge for that right now is there is no real way in which the system can assess the value of that capacity in terms of the savings we might need to make, in terms of less grid capacity being built, in terms of less new power stations being built, less inter-connection with other markets.. There is no real mechanism in place to assess that value and, therefore, provide a fair return to the developer of those projects. Again that is something I would really encourage the Committee to look into.

The other future for hydro is very much at the small end of the scale—sub-two megawatts, sub-one megawatt—and the comprehensive review of the Feed-in Tariff has only recently concluded but I would say the sector that has been hardest hit, in terms of the changes to tariffs, is the hydro sector. I can understand there is a need to keep real pressure on costs, on areas that are developing, like solar, like onshore wind, as technology improves, as cost comes down. The reality is for hydro, though, we have developed sites. We have developed the cheaper sites. There are sites that are still to be developed and may be further from a grid connection, more difficult terrain, more difficult engineering, and there simply is not the same scope for cost reduction in small-scale hydro. The feedback from our members has been that they believe that the tariffs that have been introduced are unviable for future investment. Again, that is why I said I think it is important that we monitor what happens in that market and if they are unviable then we do something about it.

Q34 Chair: Lastly—and I know our time is almost up—we are where we are obviously. We have the Energy Bill. We don't know exactly what is going to be in the Budget in terms of the announcements, but what would you see as the best way forward from here? What announcements would you like this Government to make in order that Scottish renewables gets back to where we were so investor confidence will continue in the sector? What do we need to do?

Niall Stuart: As we said in our submission, I would start right at the very top and that is a clear articulation from Government that they see renewables as having a critical and fundamental role in their objectives for the energy system, which are meeting the Paris climate change accord, increasing energy security and keeping bills down for consumers. I firmly believe that renewables can do all of those. Then it is about the specific things that we have already talked about for offshore wind and the projects on islands: when will the CfD allocation be announced and what will be in it? In terms of onshore wind and solar: what is the future framework of support for them? We believe it has been part of the CfD framework and, again, competition will really significantly continue to drive down the costs of those two technologies. For the small-scale it is around Feed-in Tariff and, in the reform of the renewable heat incentive, again it is sensible changes that strike the right balance in terms of accelerating the growth of the sector while keeping costs down for consumers.

Chair: Great. Thank you ever so much. You are the first witness in this inquiry and we are grateful for your time. If there is anything further—and I am pretty certain you will observe the progress of this Committee's inquiry—anything that we have missed or anything that we should be looking at, please give any further evidence to the Committee. We would be very grateful for any further correspondence, but thank you ever so much for your time this afternoon.

Niall Stuart: I should probably have opened it with thanking the Committee for the opportunity to come and speak and also congratulating you on taking forward this inquiry, because obviously we believe it is of fundamental importance to the sector.

Chair: Thank you for that.

Examination of Witnesses

Witnesses: **Andy Kerr**, Executive Director, Edinburgh Centre for Carbon Innovation, **Professor Keith Bell**, Co-Director, UK Energy Research Centre, and **Simon Skillings**, Senior Associate, E3G, gave evidence.

Q35 Chair: Welcome to the Scottish Affairs Committee. As I think you just heard me say to Mr Stuart, this is our first day of evidence in our inquiry into Government policy on renewables in Scotland. We are very grateful for your attendance. Just for the record—if we could go from my left to right—tell me who you are, who you represent and if you have a brief opening statement. Mr Kerr?

Andy Kerr: I am Andy Kerr. I am Director of the Edinburgh Centre for Carbon Innovation, which is an innovation centre based at the University of Edinburgh. We work with businesses and investors about taking new ideas and turning them into practice. I am also co-director of something called the Centre of Expertise on Climate Change, which provides a lot of advice to the Scottish Government on their policy frameworks.

Professor Bell: I am Keith Bell. I am at the University of Strathclyde where I am the ScottishPower Professor of Smart Grids, but I am also involved and here today representing the UK Energy Research Centre, which is a multi-disciplinary virtual centre really. It involves a large number of academics at different universities across the UK coming to consider evidence, build evidence base to inform energy policy, so it involves economists, social scientists, psychologists, natural scientists in terms of natural capital, for example, and engineers like me.

Simon Skillings: My name is Simon Skillings. I am an independent energy policy expert but I do a lot of work with the environmental think tank E3G.

Q36 Chair: Thank you. We have just heard from Mr Stuart—and this is what we want to explore in a bit of detail—about the recent policy announcements from Government and the impact on onshore wind as well as other interests to do with renewables, and we have heard that this could have a significant adverse impact on confidence within the sector. Have you any views about this and what do you believe the impact of Government policy changes will have on the sector? Mr Kerr, we will start with you.

Andy Kerr: Scotland has worked very hard over 15 years or so to essentially optimise or maximise the opportunities that have arisen from the UK and Scottish policy frameworks around renewables and it has been very successful at it, as Neil Stuart flagged earlier. The issue is the seeping away of confidence within the business and investor sector because, while I think everyone accepts that the renewables subsidy regime was not sustainable at that current level as it was a year or so ago, because costs have fallen very quickly, equally every business and investor wants clarity over the medium term. What we had were a

series of announcements that came in at very short notice, and certainly the businesses that we are working with have been immensely frustrated with the changes. I am not focusing so much on the near term changes to the renewable obligation because, as you said, that was going to be finishing anyway in 2017. It has been much more about almost all aspects of the policy framework. What were assumed to be secure are being rejigged. That I think has been the major frustration.

There is a sense that, instead of being at the leading edge of renewable energy development, the UK is now taking a backward seat and I think, from our perspective, certainly as an innovation centre in the university sector, this is not just about the energy and the clean energy bit. There is also in Scotland a very strong push around using energy as an economic driver, both in terms of export potential but also as a social driver to support social cohesion within communities across the country. Again, I think there is a real sense—

Q37 Chair: The social cohesion bit, what are you referring to?

Andy Kerr: What we are saying at the moment in the UK is a strong emergence of frameworks between what the UK Government is planning, which is a nuclear and gas future largely, and what the Scottish Government is planning, which is very much a localised energy future. The localised energy future suggests that what we are trying to do is provide a local matching of supply and demand, and it is trying to look at the whole local energy system so it is not just focused on generation technologies, per se, it is also looking at energy efficiency of buildings. It is looking at the local system: how do you bring in mobility transport into that system? How do you ensure heating is tied to that system? Instead of trying to treat it as being separate technologies for electricity generation, they are saying, “At a local level, within a city level or at a community level, how do we join up those different elements so that we get some local energy system that is clean, affordable and secure?”

Q38 Chair: This is interesting to the Committee. Do you have a sense that this is a policy that seems to be being pursued by the Scottish Government, and are you finding that there is a different set of agenda priorities than in the UK Government when it comes to this approach?

Andy Kerr: Yes.

Chair: Thank you. Professor Bell?

Professor Bell: I agree with a lot of what Niall Stuart said earlier. On the reduction in confidence, it has been said many times already, and my perception is that it goes across many sectors. Even if, for example, continued support is promised—although we are yet to see the detail that Niall was talking about—in respect of offshore wind, it affects other sectors: tidal, solar. There is a kind of a supply chain capacity that has been built up and, although it has not made a difference to what has been delivered so far, there is a danger that that supply chain capacity is going to be eroded and, as Andy was just saying, the investment will start to withdraw. We are dealing with an international marketplace now, of course, where a lot of the investment is capital that is coming from all over the world so there is a need to attract that inwards. Andy has mentioned some of the economic benefits that that brings with it, the jobs and so on.

Another part of the international dimension is, just as we have talked about Scotland being part of the UK, the UK is part of Europe and there is a European commitment to this classic trilemma of decarbonisation, affordability of energy and the sustainability of it and the security of supply. My understanding from talking to people around Europe is that they see the British Isles—we could extend it further—as representing a major contribution, potentially, to European obligations to decarbonise because of the very rich renewable resources that we have, in particular wind but also the various offshore technologies, wind and tidal in particular; wave technology is a bit further away. I think there is a wider context to it.

A lot of the things that we have talked about and have been in the attention of policymakers in recent times are whether cost parity has been met, whether the market can be left to get on with it in terms of low carbon energy or whether some extra support is needed. It has been generally agreed that extra support has been needed. It has made some people a fair bit of money but, on the other hand, it is that support, even if it has not been badged as R&D, that has led to the D, the development and the deployment, and has in turn helped to drive down costs.

Q39 Chair: This is something that we would like to explore a bit further. The direct subsidy aside, because there is a bit of political debate and conversation about that, is there anything else that we can do to stimulate the sector through economic development policy? Is there more that could be done, instead of just giving money, or what seems to be giving money, to electrical generators?

Professor Bell: I am maybe not the best person to ask that question of. My background is in engineering although I talk a lot to the economists, but we have a liberalised electricity market. That has been the intention from when the 1989 Electricity Act came in. The idea that there are other sorts of levers that you intervene with has been something that back then, in the early 1990s, was supposed to be a thing of the past. It is slightly ironic that we have seen continual interventions, in particular by Ministers, in little details, as it might have been seen at the beginning, to do with the energy markets, not just electricity, increasingly because the market value of low carbon energy is not yet realised in order to drive the investment on its own. The other side of the equation, what are the penalties, what are the costs of failing to decarbonise, is not realised in the market at present. While the principles still remain to allow the market to get on with it, the market signals do not seem to be there and that is why we get back into these sorts of things. Other sorts of policy interventions? Maybe my colleagues here will have more to offer on that.

Simon Skillings: To my mind, the issue is very simple. What we have seen are some evidently quite significant policy changes and yet they have not been accompanied by any significant changes, or indeed changes at all, in high-level policy objectives. The problem is that there is now a complete lack of understanding as to what has changed, what is the evidence base that is driving the current policies that mean that they are a better way of delivering longer-term policy objectives than the previous package.

We talk about support mechanisms and the role of subsidy, but a huge amount of investment is made on the basis of taking a view on the future, taking a punt on the future, based on beliefs about where we are going. Over the last 10, 15 years a very consistent sense of direction has begun to emerge of how much money goes to which particular technology. There is a bit of horse trading here and there, but the general direction has been fairly clear. What we have seen now is something that appears to be a quite a

significant change, but there is not the substance behind it that will enable investors to understand where they are going and gain the confidence to move forward with their investments.

Q40 John Stevenson: I want to pick up on a comment that Professor Bell made about Government intervention and how you create a degree of certainty. One thing that has always struck me is that if the Government were to change the law and basically said that any new build house—this is residential, domestic housing—had to have solar panels put into it, is that something that you think would stimulate the market in a positive way and create a degree of certainty for the future? Is that the sort of policy interventions you are looking for or is it more towards subsidy and that sort of policy intervention?

Professor Bell: To some extent that is almost an ideological question about what is the role of Government and what Government should be directing and regulating on. A personal opinion would be that the global climate change challenges and the obligations on the already industrialised world are such that we need to make serious commitments. That sort of obligation would not just be solar panels on roofs. It might be to do with thermal ratings of new build properties, whether it is housing, schools, commercial buildings, whatever. I think it would finally make a huge difference. In the short term there would probably be inefficiencies where suddenly a massive market is created and maybe the kind of efficiencies in that market do not yet exist. Over time you would expect that the stronger players would be the ones that survive and the less strong ones would not. Undoubtedly it would drive a market.

Whether the short-term costs would be seen with the benefit of hindsight to have been justified is another debate, but personally I think there is a strong role for regulation in terms of standards, let's say. How you design those standards so that the efficiency of it, the delivery, is maximised is a question that one would also need to go into.

Q41 Mr Christopher Chope: What all of you have said seems to smack of special pleading, in a sense. You seem to want to be insulated against market forces. What do you think of your colleagues in Scotland who are suffering in the oil and gas industry as a direct result of market forces? Why do you think you should be privileged while they are not?

Simon Skillings: Personally I find the technology debate—"I like this technology, I don't like that technology"—a rather sterile and unhelpful debate. What energy policy is trying to do is to deliver certain outcomes in a highly uncertain future and although people talk about the trade-offs—the trilemma was mentioned: environment, security, cost—perhaps the bigger trade-off is between a certain present and an uncertain future. We need to spend money now in order to provide hedges against that uncertain future. That is what everybody does and that is the substance of the premium we are paying now.

In terms of insulation against market forces, the thing that is missing from energy policy now—and I don't criticise the current energy policy because it has been absent for some time—is tackling that core issue, which is thinking through what are the choices we need to make now that manage the risks we want to manage in the future in the most cost-effective way. FiTs and CfDs and so on are delivery mechanisms; that is how you achieve what you want to achieve in the most cost-effective way. That is a second order issue. The primary issue is: how are we managing these future risks in the most cost-effective way? I think there is a very strong argument that renewables have a very major role to play in that.

It is the one low carbon technology that has demonstrated that it is capable of being deployed at scale and, therefore, I think it has a very important role to play. But at the moment that argumentation is not explicit anywhere in Government policy that allows people then to start having the, “I don’t like renewables or I don’t like nuclear” or whatever it is and, “We’re paying too much for this, we’re paying too much for that”, because people are not really understanding the logic that sits behind a good energy policy.

Q42 Chair: Do we have a good energy policy? Is that how you would characterise the current Government’s approach?

Simon Skillings: I am not privy to the inner workings of Government, but what I would say is that there is no explicit understanding of the energy policy and there is no ability for investors to be able to look at the measures and say, “I see how these measures are sustainable in the short, medium and long term”. That is not just an issue for renewables. That is just as much an issue for every other technology in the energy sector, fossil fuels; every other technology. At the moment there is no basis for saying that I can see a line of sight that takes me credibly from this set of policies to delivering policy objectives out into the medium and longer term.

Q43 Chair: I think it was Mr Kerr who mentioned that the changes that we are observing in policy from Government and announced in the last few months are barely having an impact upon objectives, which is to see a reduction in new renewable projects, a contribution to the grid. Is there any evidence that supports that, that the changes that have been announced are having a minimal impact on current policy and the mix we have of energy just now?

Andy Kerr: If you are talking about the near-term renewable electricity, onshore wind in particular, I would refer back to Niall Stuart’s answer from earlier. I think he offered a very fair answer to that. What we are seeing is slightly further ahead, so at the moment a lot of people have stuff in planning, in particular, and they are still waiting to see what is going to happen; it is like the grace period. I think the issue for us is the next step.

If I could come back to that point, because I don’t think there is any special pleading. I am certainly not seeing many people arguing that there should be special subsidy rates for particular renewable energy technologies, like wind and solar, when they are seen to be cost competitive with other forms. I think the issue is: can they be on a level playing field? That is a different thing altogether. One of the challenges we have here is that we are often comparing apples with pears. If you are comparing a renewable energy technology, it is capital intensive, so it costs a lot upfront and then has zero or very low running costs, whereas a gas-fired or a coal-fired power station costs a fair bit to fire up, but then the issue is: how much is it going to cost for the next 25, 30 years of its life? That is an unknown. We do not know what that cost is going to be so it is incredibly difficult to judge between the two.

Coming back to Simon’s point, the issue for the Government is: in the face of extreme uncertainty, how do we get from where we are now to where we want to go? Everyone in this House and the Scottish Government wants a clean, affordable energy system.

Q44 Mr Christopher Chope: But surely contracts for difference are a way of insulating renewables against changes in the marketplace that are having an adverse effect on the oil and

gas industry. The oil and gas industry, because of the reduction in the price of its products, has to cut its cloth accordingly, but what you are saying is that you should not have to cut your cloth accordingly because you should be insulated against those changes in energy prices by contracts for difference.

Andy Kerr: But that is not renewables. That is electricity. That includes gas-fired generators and nuclear generators. That is not a renewable issue. That is an electricity issue, because electricity is seen to be at the heart of wellbeing of people whereas oil, being transport, is not, so Governments do not see that as the same key issue. I think it is because we are focusing on electricity. It is not just renewables. It is electricity, per se, in the same way that we need support to provide nuclear. In practice, we are not going to build much in the way of new gas unless there is additional support coming in, so the Government have to physically change the system in order to ensure they get what they want, which will be nuclear plus gas as well as some renewables.

Simon Skillings: That is a very interesting point that brings out the issue I am trying to make about CfDs. I don't think it is the CfDs that are causing the problem for the fossil fuel industry. It is the trajectory of decarbonisation that is causing the problem. The role of CfDs was intended to be a mechanism to achieve that transition as cost effectively as possible. I think it would be interesting for members to look at data on the cost of renewables in Germany compared with in the UK and Scotland. In Scotland, the resource is better, generally speaking, than it is in Germany—not solar but wind is certainly better—and yet the costs are generally higher. One of the big issues that drives that is the cost of capital. There is complete certainty among the investment community about the direction of travel the German Government have over promotion of renewables. There is not the same certainty in the UK. CfDs were an attempt, and I would argue a flawed attempt, to correct that and provide some increased certainty to reduce cost of capital. Unfortunately, the background politics created an increase in political risk that, generally speaking, outweighed the reduction in market risk.

Q45 Chair: Just on that before we lose it, what are the flaws in CfDs in your view?

Simon Skillings: The flaw is not necessarily in the design of the CfD. The CfD reduces market risk. The flaw is that what came out of the CfD was a political risk that tended to offset the reduction of risk that had been achieved by insulating the low carbon generation from the market, because investors were worried about the tenability of those contracts into the medium and longer term. If you look at the nuclear CfD as an example, how anyone cannot be worried that a contract that is meant to be there still in 60 years' time, and is going to be hugely either out of the market or in the market, is not going to be renegotiated is extraordinary.

Q46 Chris Law: There are legally binding targets for reducing carbon emissions. However, there has been criticism that the UK Government do not have any long-term strategy for reducing these carbon emissions. What are the views of each of you on what a strategy should look like?

Andy Kerr: I think they do have a strategy for long-term carbon targets. The Secretary of State has repeatedly said that she assumes they are going to meet them and she is aiming to meet those long-term targets. The frustration that I would offer is that if you choose to go down a route where your electricity is powered by nuclear and gas and your heating is gas

and your vehicles largely are oil, you are not going to hit those medium-term targets unless you do something else. One option is using carbon capture and storage; there are other options. I think the frustration is that some of the policy announcements over the last few months appear to have ruled out a series of things, which to many of us, are required if the UK is going to meet those medium-term targets.

Professor Bell: I am not sure I totally agree with Andy. While there is supposedly a goal to decarbonise, I am not sure there is a strategy for how to do it. It is not clear to me that in the medium to long term there is a clear vision on how that is going to be achieved. The short-term policy changes that we have seen, or continued absence of policy I guess you might say, suggest that there is not much of a long-term vision there either. To be fair, the challenge is a very difficult one. Andy has alluded to it in a previous answer. We start from the premise that we have to decarbonise use of energy. As Niall was saying earlier, we want to do so at least cost and continue to have a reliable supply of energy that our economy depends on. Electricity looks like still one of the best bets for decarbonising, not just existing electricity use but heat and transport; decarbonise electricity and electrify these other sectors, to some extent. There is a big emphasis, of course, on the electricity sector.

The challenge, as Andy has just said, is we are moving from a type of generation capacity, a type of technology that has moderate capital cost and significant operating costs in terms of the fuel towards types of generation technology that have very high capital costs and very low operating costs. With low operating costs, if the market works in the way that the economists say it should work, the short-run costs bid into the market will be very low, which makes it very difficult for anyone who has significant operating costs to know whether they can recover them. That is the big challenge of how you can start to engender a change of the generation mix, which is less carbon intensive and the reason why you then start fiddling around with all sorts of mechanisms to try to bring it about. When you are talking about nuclear power stations or potentially carbon capture and storage, at least the second generation of them, having long lives, 40, 50, 60 years, you need that long-term certainty to make the necessary investment.

On the cost of capital, Simon is absolutely right. DECC's own research said exactly that: this is one of the key factors when comparing the cost of onshore wind in different parts of the world. That issue about the changing nature of the CAPEX versus OPEX is a really difficult challenge. You end up coming up with all sorts of mechanisms to do that, but in the short term—again, repeating what was said earlier—there is this absence of clear commitment.

Why do we need a commitment now? That is probably another relevant question. Why don't we just wait, as some commentators seem to think we should do, for R&D to deliver the next great technology or to suddenly halve the cost of something and then we will just go for it? First, that shows a great deal of faith in the technologies coming along that quickly. The bigger technologies have had a lot of investment over a long period of time, so it is hard to see that this magic bullet is going to emerge very quickly. Secondly, where a lot of the technologies' costs have come down is through creating a market. You cannot just leave it in the lab; you need to get it out of the lab and deploy it. That is one of the major things that has driven down the cost of solar PV globally.

We need to get on and do something, even if at the beginning it is more expensive than you want it to be. While we are still not getting on with it, we are still impacting on the climate. Global warming is still continuing and the later we leave it the bigger the action we have to

take and at some point we may be too late. To build up a supply chain to deliver that very quickly is difficult.

For all those reasons I think long-term vision is absolutely necessary but there has to be also a short-term mechanism that moves on the way towards it.

Simon Skillings: It is not easy. I wouldn't like to pretend it was. If it was easy it would have been done. Essentially, what a strategy needs to involve is a series of technology pathways that manage the key risks that we have looking out, the key uncertainties over our energy costs and technology costs. Creating those pathways involves market creation that allows those technologies that exist to be deployed and drive down their costs and also involves leaving space in the market for innovation and development. That is particularly relevant on the demand side and the distributed energies.

There is a second really hard aspect to a coherent energy strategy and that issue is opened up when we start thinking about heating and cooling—heating is probably more relevant to Scotland, I guess—and that is that we can no longer decarbonise the system remotely from individuals or businesses. We need them to do things. We need them either to invest themselves or have some change made to the substance of their buildings. That is an extraordinarily significant consumer engagement challenge that we have not come close to addressing. We talk about technology pathways, and that is very important, but in many ways that is living in the world of electricity, which is the easy bit. The hard bit is still to do, which is how do you engage people to do things differently.

Chair: Thankfully, that is not part of the remit of this Committee. I am sure it is an interesting aspect.

Q47 Chris Law: You brought up the fact that there has been a lack of energy policy for some time, or at least a comprehensive one that matches all the areas of energy production. I asked a question earlier of Niall about: what do you think the motives are for some of the recent policy changes, some of which came as a complete shock? Have you any ideas?

Simon Skillings: In fairness, I came to the view before the last election that there was one overwhelming challenge that would affect whichever Government or combination of parties came into power, and that was that delivering security in decarbonisation was costing too much. We had to find ways of reducing those costs and that was going to be the key imperative facing whichever Government came into power. I think there are sensible ways of doing that and there are less sensible ways of doing that, but at that level I can understand the motivation, the need to reduce costs, absolutely. I happen to think there are many better ways of going about it but I can have some sympathy with the motivation.

Professor Bell: I would just be speculating in the same way as everyone else. Clearly some of the public statements were about cost. Whether the costs were very excessive I am not quite sure. Another way of turning around the question about consumer behaviour—as a colleague of mine at University of Newcastle has put it—is that many households spend more on fizzy drinks and crisps in a week than they do on energy. We need to keep the cost of energy down. There is a serious issue about fuel poverty and affordability but, ironically, if the cost of energy was higher, there would be a stronger incentive on being more effective with your use of energy in terms of its timing and the volumes that you are using, provided we give the people the means to be more effective. Some of that requires capital investment in housing stock and facilities and whatever. Unfortunately, in the

longer term, I can only see the cost of energy going up and the challenge is to make it go up as little as possible while still meeting the reliability targets and the decarbonisation targets.

Andy Kerr: On the political question, my sense is again that in this House, or particularly with the Conservatives, the renewable side has been seen as something for the environment. What has been interesting over 15 years of multiple Governments in Scotland is that they have treated energy as being an economy opportunity and they have seen that if you support the R&D, the deployment, the innovation you are going to bring in large amounts of investment, you are going to support jobs. There is an economic driver that has been at the heart of it since the early Lib-Lab coalitions and then boosted when the SNP came into power. I think that has been different from the UK Government's approach to energy that is seen as just trying to balance those three, clean, affordable and secure, and that is a distinct difference we have seen.

Q48 Chair: Would you suggest that the UK Government should be sitting down urgently and learning from energy decisions being made in Scotland?

Andy Kerr: I think that the emphasis on innovation if it is done properly, which is not just, "We'll just chuck everything into R&D" but actually look at the deployment, look at using some of the opportunities that are what we might call living labs or test sites and so on that we have seen being hugely successful in Scotland, could be broadened out across the UK and treated as an opportunity to take those abroad. We are seeing globally a massive energy transformation in 195 countries that signed up to the Paris agreement and we are seeing massive amounts of money being spent. The knowhow in the UK, in Scotland, on power systems, renewables, intermittent, smart grids, local energy systems is phenomenal. The UK can certainly learn from Scotland, in the sense of seeing how Scotland has benefited from drawing in a disproportionate amount of R&D spending as well as deployment spending to support that knowhow and it is now being exported as knowhow. So I think you could certainly say that.

Q49 Chair: It is very interesting what you say about how energy policies have been departmentalised. We have the Department of Energy and Climate Change, the Treasury who have an interest in this as well as energy departments. It does seem to cross a number of different Departments in Whitehall. One thing that Niall Stuart said—and I am interested whether any of you have a particular view on it—is seeing energy as a community asset where there is an involvement of the local community and micro projects. I represent a huge rural constituency and I have seen the issue where there were contentious windfarms, for example, going through planning but they have the windfarm funds now. There is an intimate involvement of the community and the provider of electricity locally. I am interested in this idea, whether it is something that we need to address and maybe look at a little bit more deeply.

Andy Kerr: We are aware that funds that are available to the Scottish Government as seed corn funds are being used very heavily to help develop some of these projects, something like the Local Energy Challenge Fund, like the previous Climate Challenge Fund, to try to help communities develop these ideas. Obviously, as was mentioned before, because there is a big off-grid community and there is also a series of island communities that do not have good connections to the mainland, there have been some natural developments around how do you combine a fantastic renewable resource with the fact that what they are

doing is importing fuel oil and so on to run generators, which is incredibly expensive? It is then how do you use the renewable resource to secure that and reduce the cost of energy as well as delivering a secure supply? I think those learnings and those activities are very much taking place in Scotland at the moment.

The other thing is that they have increasingly found, as you have just described with your windfarm, that initially in the early days, big windfarm developers would come in and they would try to buy off the community with a few thousand quid a megawatt hour. Increasingly, they found that if you properly engage the community—and we have done some work for the Government on this—the ease of getting it through planning is dramatically higher, so even though they may give an equity stake to the communities, the community owns a proportion of the turbines, so they take quite a substantial stake in a windfarm, it is still beneficial for the developer, because they get it through planning much more effectively.

The other thing that we see—coming back to the economic and social benefits—is that what it means is that you are then recycling money locally, so if you are an E.ON or an RWE and you are dropping a windfarm into Scotland, the benefit of each turbine is essentially the cost of that turbine: you build it, there is some local value to Scotland, but everything else then gets taken back to the headquarters. If you have community ownership, what you get is the community then gets the money locally, recycles it by spending money locally and so you end up getting economic benefit in areas that traditionally have been challenged economically, particularly through the Highlands. So there have been multiple social and economic benefits and I think the Scottish Government has seen that in a way that I do not think it has been as well aware in Westminster of those opportunities.

Q50 John Stevenson: I represent a seat in Cumbria, so what you are saying, I agree with you, and I think there is a greater awareness than you think in the industry down here. For example, in the nuclear industry, there is a lot of community-based activity, trying to get the supply chain. Indeed, the Government's policy is that 60% of the production or the supply chain should be British for the nuclear build and that is very much something in Cumbria. Also, interestingly enough, we have quite a bit of renewable. I am curious about that, as to how much of the supply chain work is going to Scottish or British businesses in connection with renewables and where is the construction of, say, the wind turbines? Is that in Britain or is that imported?

Andy Kerr: The turbines are certainly imported. I would be struggling—

Professor Bell: We need Niall back in here or maybe Simon has more up-to-date figures, but certainly a few plants have been opened, manufacturing facilities in Britain. Investors had one in the Isle of Wight a couple of years ago; there was a plant in Campbeltown.

Q51 John Stevenson: Didn't they close down, though, the Isle of Wight one?

Professor Bell: Exactly, and that was part of the point. In a way, you can look back and see that as an illustration of some of the policy uncertainties, about whether the market was going to be there to justify investing in a plant and keeping it open. I think in terms of the turbine manufacture, the large turbines, there is very little, if any, of it that I am aware of in

Britain. There is still one or two of the smaller companies: Gaia-Wind is based in Glasgow, for example.

Andy Kerr: But what we do see is you get the construction jobs, they are certainly local, and the other thing is you get a lot of professional jobs around that, so the professional services around that, because it is not just about sticking up a turbine, you need the planners, the accountants, the legals, the investment advisory services and so on, so there is now a very strong base of those communities.

Q52 John Stevenson: But the R&D and the engineering work is not going to be British or Scottish.

Andy Kerr: The big 7 MW onshore wind turbine was in Methil in Fife, for example, so that was Samsung putting their R&D facilities into Scotland and they have now given it to Scotland, but it was there specifically because they saw the R&D expertise lying in Scotland and they wanted to make the most of it. I think I would be a bit careful about focusing only on wind.

John Stevenson: I was just using that as an example.

Andy Kerr: I think there are particular clusters of expertise where we have great strength, not just in Scotland but across the UK. But it is not just on the engineering, it is that whole suite of services and knowhow about how you deliver stuff. We are certainly seeing companies that we work with operating in South America; we are working with them operating in India; we have a centre out in Hong Kong to take companies from Scotland to develop into the Chinese market. Again, all of those types of operation are because they see the knowhow that exists in the UK and I think that is the real value in terms of R&D.

Professor Bell: I would just reinforce that. Also, not to underestimate the construction, the amount of work and jobs and value that is brought in that, especially for the large windfarms, the solar PV sector, a lot of jobs. A lot of them have gone now, but there had been a lot of jobs in terms of installation in support of that.

Q53 John Stevenson: They can be transient jobs though. You have to be careful.

Professor Bell: Yes, but once you have built up a capability—

John Stevenson: We have great experience of this in Cumbria, you get a burst and then it disappears.

Professor Bell: Yes, that is true, but the solar PV sector, there were specialist companies being built up and they had enough of a chain of projects to deliver, where those jobs were going to be around for a number of years. As Andy has said, in terms of the professional services, which does include engineering, Siemens Wind have a major centre in Glasgow. This is a German company investing in knowhow in Scotland, there are major engineering consultancies based again in Glasgow, one or two in Edinburgh, some in Manchester and other places in the south, as Andy says, selling expertise worldwide.

Q54 Chair: Before you came in, Mr Skillings, we just heard from Niall Stuart it was 0.7% of GDP, 21,000 jobs in Scotland, and this is a huge sector that obviously needs to be nourished

and protected and invested in. There is a sense that what we have seen, in terms of recent announcements, will have a real impact on these types of skilled jobs that we are seeing in Scotland. Do you have a view on that?

Simon Skillings: The point that I was going to make was manufacturing is always vulnerable to offshoring. Where the massive local jobs dividend comes is in the adaptation of the energy system, particularly around the development of the demand side of the market, the efficiency of premises and creating more smartness of premises. Those are jobs that have to be local and have to be sustained. They cannot be transient because there are such a number of properties to get through over time. So, even though that is not directly renewables, it is part of the future energy system.

Q55 Maggie Throup: I want to follow on from that, two aspects: first of all, the amount of expertise that there is in Scotland for renewables. Is every opportunity being taken to benefit the Scottish economy by looking at more and more exports? You have touched on a few different centres, but surely more could be done.

Andy Kerr: I am sure more could be done. We certainly work very closely with the enterprise agencies and there has been a rejigging of the enterprise agencies, Scottish Enterprise and Highlands and Islands Enterprise, with Scottish Development International to focus much more on the export markets. That works very closely with UKTI as well, so I think there is a sense that there is genuine nourishing.

I was in India last week talking to the STI person in the UKTI and they said, “Our focus is food and drink, energy, education”, so they do see it as being at the heart of what they are trying to sell in terms of the companies that have knowhow in Scotland and how we can take it abroad.

I think there has been a fundamental shift over the last two or three years away from, “How much money can we get into Scotland?” to, “How can we make sure that knowhow that we have in Scotland gives us economic benefit through export potential?” What we do not want is to lose the talent that is here, because globally the biggest opportunities are in China and India at the moment. Do we want to lose the companies that we have to headquarter them over there? We do not. That is why I think we are concerned about making sure that there is still a supportive framework, notwithstanding the issues around the deficit and the need to cut costs, nor for special pleading, but to make sure that that type of political vision that says, “This is a key sector for Scotland” and whether it is in the renewable energy, whether it is about reskilling some of the oil and gas workers that is going on, this is a huge opportunity because Scotland is good at energy and therefore we need to make the most of it.

Professor Bell: I think Simon made the point very well about the possibility of manufacturing always going offshore. That looks like it has the best opportunity for bringing value into an economy: build the stuff here, then you have the intellectual property for it, you can sell it elsewhere.

We mentioned solar PV earlier. Germany set up a very generous Feed-in Tariff. They created a market and they created a manufacturing base. It is being undercut from China right now, so that is really suffering. But I can only reinforce the point that has already been made about the expertise. Maybe there is another point—and Simon made the good

point about what has to be delivered—and there is a local level of expertise that has to come through finally. Whether the supply chain of technicians and engineers is strong enough to meet what many of us think has to be done in the medium to long term I think is an open question.

I am involved in a UK-wide scheme to encourage people into professional engineering as electrical engineers and there are eight universities involved in it. The University of Strathclyde is the biggest one, which obviously I am very proud of and it is fantastic. You could turn it around and say, “How come there are not as many at Manchester and Imperial College and Bath and Cardiff?” It is a real struggle, so it seems, to encourage talented young people to come into that sector and many of the universities are depending on—guess what—young people coming from China to come and learn about engineering. Okay, many of them are adding to the UK economy. Well, they would have done but of course the rules have changed over the last few years. They are very keen to stay here and add to the UK economy, but a lot of them are going back and taking their skills and expertise back with them, so we have a short-term benefit there and in a sense we are training up our competitors.

Simon Skillings: I mentioned a little while ago that I thought there were some good ways of reducing energy costs and some less good ways. One of the best ways is through a shared approach, delivering an energy policy objective with European neighbours. All the studies that I have seen that have been done show that these are huge cost savings. They are not little bits around the edges. They are tens and tens of billions of euros. Huge amounts of money can be saved by neighbouring countries working together to deliver energy policy objectives. Scotland is extremely well-placed to benefit from such co-operation because, if you were looking to deliver renewables around the North Sea area, then you would want to put the renewable projects where they were most efficient and that is in Scotland. There also happens to be some great opportunities in Ireland as well, exporting into the UK. You would not build them in Germany, which is where a lot of them are being built. There is some very, very powerful economic logic for working together and delivering energy policy objectives through an integrated European market, but it does require the Governments in a neighbourhood region, particularly around the North Sea, to come together and look to deliver their energy policy objectives.

Q56 Chair: We always self-congratulate ourselves about having this huge resource in Scotland, whether it is tidal wave, wind and so on. Is it true or is it just something to make us feel better about ourselves? Is it factual, the fact that we have the biggest resource in Europe and so on when it comes to tidal and wind?

Professor Bell: I think it is true, but especially for the offshore resources there is still an engineering development to take place, not just in offshore wind, which is getting there, but especially in tidal energy and especially in wave energy. There are huge engineering challenges to meet there but, in respect of onshore resources, there is a fourth leg to the slightly over-familiar trilemma: we are talking about a quadrilemma, where the fourth leg is about social acceptability where, although we are very conscious of people objecting in the shires of England to onshore wind, there are significant objections in Scotland as well.

Chair: Tell me about it. I get that in my constituency.

Professor Bell: The point you made about community benefits and the planning was a really good one. Yes, sorry, go on.

Q57 Maggie Throup: Moving on from where we were before to looking at Scotland's role as a hub for research, Scottish Renewables said that Scotland is at the leading edge of research, development and expertise, which is what we have been talking about when it comes to renewables. Just from what you were talking about before, we seem to be talking about policies coming from DECC. I wonder is that the right place that policy framework should be coming from or should it be BIS? How important is a supportive policy framework to driving this innovation? We have established technology, but we need to look at the future and make sure we have new and cheaper technology. Do we have the right focus on policy?

Professor Bell: I am not sure how much of the reduction in the costs of the next round of offshore wind development we could attribute to intervention by BIS. I think a lot of it we could put down to the fact that there is a market; that the renewables obligation was there; there was money to be made; there is competition—

Q58 Maggie Throup: No, I think if policy is coming from DECC, shouldn't it come from BIS if we are talking about innovation and skills?

Professor Bell: In other words, I think it needs to be from both. BIS obviously has a key role in terms of innovation and getting new ideas through that sort of Valley of Death, out of the lab, into the field and starting to be used. That is a critical part of it. It cannot be left to that but it seems in some ways, in respect of energy, it is being left to that at the moment. The announcement by the Secretary of State, mentioned earlier, of money for investment in R&D is enormously welcome. But I don't think we should be depending on that and seeing that as being the only thing that exists. Creating a market for the technologies that are nearer to maturity I think is also important.

Simon Skillings: The observation I would make is that you increasingly hear people talking now around the world about being on the cusp of an energy revolution. That is beginning to materialise in certain places around the world and a renewable, efficient, smart, local energy system has the potential to have a massive impact on the economy as a whole. It seems to me one of the main reasons why Paris went so well compared to previous climate change negotiations was the industrial community is coming together and saying, "Look, hang on, we know where it is going. We cannot hold it back any more, that is where it is going and we need to get behind and make it happen". It seems to me critical that it is a core part of our economic development strategy.

Andy Kerr: Yes, it goes back to BIS, but I would also say it is very difficult to situate R&D as if it is in one place. We draw heavily on the UK networks. We draw heavily on the EU networks. We draw heavily on global networks, so there is certainly real expertise, and I would not say just in renewables. Again, I tend to treat that with a very broad thing, so if you are talking about smart cities or mini-grids, local grids and so on, you are talking about local energy systems, it is not just renewable, it is how you put all of those together with energy efficiency, energy demand management, energy analytics. That is where Scotland has something good to offer, but it is embedded in a broader UK and EU set of talent that we draw on.

Chair: Thank you for that.

Q59 Maggie Throup: Finally, you mentioned last year the Government announced it was doubling its spend on energy and innovation. How important is this funding compared to revenue support for renewable energy when it comes to driving cost reduction in renewable technology?

Andy Kerr: My view is that—and I think it was a question you had about your solar panels on the roof as well—the practice is better at driving cost reduction than pure R&D, because it is the deployment where you discover what the real prize is. I think something that drives the deployment is the thing that really matters going forward in terms of delivery.

Professor Bell: I think a large part of the solar PV project was in the manufacturing, the processes for dealing with the silicon materials and so on, so there was a market there, there was money to be won from the market, and those who could innovate in terms of the manufacturing techniques and reducing the cost of it were going to benefit from it.

Simon Skillings: Yes. My experience of working with appliance development is the critical step is the move to mass market production. If you can get scale production, you can take massive percentages off costs of prototypes that are developed at a small scale. So you do need a level of market certainty; that is absolutely critical to drive costs down.

Andy Kerr: You can argue that is why Tesla—both with his cars and his batteries—has only just turned a profit this year, for the first year after many years, so yes.

Q60 Margaret Ferrier: I would like to come in in the area of division of responsibility again between the UK and the Scottish Government. On the one hand we have electricity, including developing incentives for the generation of renewable electricity, a reserved matter. However, the control and regulation of carbon emissions is the Scottish Government. With this split, how does this division of responsibility affect the ability of the two Governments to take action to support decarbonisation of electricity generation? That is to the entire panel.

Simon Skillings: I was going to say that we are at a challenging time in terms of decarbonisation and the governance of the transition is absolutely critical. There are some forces working in opposite directions: there is a force towards internationalism, which is you get better answers by working together, not just at the UK level, but at a higher level, a multinational level. There is also a more local agenda, so the decisions that you might take in Glasgow will be very different than you might take in Ireland because of the very different energy solutions that would apply. How you develop the new governance of the industry to cope with this more complicated situation—I do not claim to know the answer now—it does seem to me to be an absolutely critical question. Perhaps what I would say is I do not think the answer is about a shuffling between UK level and Scottish level Government. I think we need to think a little bit more imaginatively at taking it away from maybe both of them.

Professor Bell: To a European level, Simon?

Simon Skillings: To a more local level, yes.

Q61 Margaret Ferrier: Could I come in then and make the point that, if we are taken out of the European Union, that would be an issue?

Simon Skillings: Yes, one would think.

Andy Kerr: There was general alignment in direction between the UK Government and the Scottish Government, regardless of the political colour of the Governments themselves, which worked fine. The Scottish Government sought to try to maximise whatever the UK Government framework was. But because we are now starting to see this divergence, there is a real need—it will get picked up in the Scotland Bill; I am thinking particularly about clauses 56 and 58. The Scottish Government have ensured that they are consulted on issues around FIT rates in particular, CfDs and so on. Those are the things where, if they are going down as a local energy approach, they need to have some say over how it develops there. In the same way, with energy efficiency measures, there are different issues in Scotland from England, as there are in Wales. There is a need to ensure that, even if it is a national policy, regional differences are properly taken into account. I would argue that that is absolutely critical going forward, because otherwise you are going to see a sort of one-size fits all thing imposed with the vision that does not match what is going on in Scotland, and that would be deeply detrimental.

Professor Bell: I would extend that to other parts of England, for that matter.

Andy Kerr: Yes, absolutely.

Professor Bell: You made the point earlier, Andy, about the geographical situation of being off the gas grid or long, stringy distribution networks, so the drivers are stronger in terms of being able to be more self-sufficient in terms of energy solutions. The opportunity to develop renewables is stronger. You could talk about, I guess, parts of Cumbria or Northumberland or whatever, similar sort of questions. Taking take account the local conditions has to be important in enabling the right solutions. That is what you mean, Simon—the localism has to be factored in.

Q62 Margaret Ferrier: The same question was asked of Niall earlier about policy: do you feel it is joined up enough to support the renewables sector, in your experience?

Professor Bell: I think we have all made the point—and Niall earlier—that there is a real gap in respect of heat and transport. These are the massive challenges that are waiting to be addressed and not really being addressed. There is clearly a link with electricity and that is one of the options of how to achieve change in there; there is clearly a link in that with fuel poverty; there is clearly a link with jobs and delivery of solutions and there is a massive link with housing policy. Even as a recent graduate I did some voluntary work with Shelter, and housing policy has been a disaster, in my opinion. The housing stock and nature of how it is replaced and how it is valued is a massive part of this, because so much of our energy is in the domestic sector.

Simon Skillings: Can I just quickly come in here? It relates back to a lot of the earlier discussion. It is very difficult for different administrations to work together effectively if those making policies are not sufficiently confident and brave enough with the decisions they are making to externalise and share the logic. It has to be based on a shared set of beliefs about the risks and the opportunities in the future and that requires Ministers, probably Ministers at both levels, to externalise whatever their internal belief set is over energy policy going forward.

Q63 Margaret Ferrier: Just one last question to Andy: given the ECCI support for climate exchange, do you have any insight into challenges that the Scottish Government face in supporting the renewable energy sector in Scotland?

Andy Kerr: I am not sure I have a lot to add to what has already been said. The Scottish Government is clearly very focused on the oil and gas sector at the moment, understandably. The renewable energy sector is a problem and it is not the first problem that they have facing them at the moment, but the real concern is that this uncertainty is going to start to drive away companies and investors. Certainly anecdotally that is the evidence that we are picking up and we are then feeding back to the Scottish Government.

Q64 John Stevenson: Andy, just picking up on the point you made earlier about the policy of the Scottish Government, or indeed England or the national Government, going back to my example about solar panels, if you were to make them compulsory, if the Scottish Parliament decided that was a policy they wished to pursue in Scotland, do you see that as a bad or a good thing in terms of trying to create a consistent policy for the United Kingdom? I am just using that by way of example. There are probably other ones we could offer you.

Andy Kerr: If we look at completely different examples from energy—smoking is one, the fact that you have regional differences in building standards is another—they are quite useful almost as test beds to see whether it works. Being confident as a country, as the UK, to say, “Look, let’s see what happens, let’s go for it” and if one region goes down that route and see how it goes, then learning from that I think is a very good thing to do, yes. If you do it at a city level, and again, cities and municipalities are becoming increasingly confident—or certain ones are becoming increasingly confident—at saying, “We want to take a stake in this energy system for our municipality” we are starting to see some interesting things going on. I think that type of diversity within the UK is very good and should be encouraged.

Q65 Chair: I was going to ask you about heat and transport, but I think we have covered most of all that. This inquiry is looking obviously at renewables, but do you have any last thoughts that you might have about how this could be much more integrated as an approach? Given that heat and transport make up two-thirds of the whole of the energy emissions and electricity is only 20% of that, is there anything just as a last thought that we could do to get integrated approaches to dealing with this?

Andy Kerr: I suppose with my innovation centre hat on, I would say that we like to think of changes as being nice and smooth, and in reality they are very jagged. What we are seeing is quite disruptive technologies, but also the social use of those technologies, because technology itself is hopeless, it is only when you scale it up that it matters in many different parts of world, not just on the electricity side. We are seeing it around mobility, even thinking about Uber, but also in the movement of people and things within cities or between towns and so on. We have not yet seen it on heat, but I think we should not be surprised if in the next five to 10 years we are starting to see some of these transformations that are already starting to occur in other countries feed into the UK.

I think the issue then is: are we joined up enough in policy terms, Scotland and the UK and Europe, to be able to maximise the benefit from those, rather than assuming that we can drive all of those ourselves—that we somehow know exactly how it is going to pan out, because we do not? Whether it is use of smart systems, smart meters, the internet of things,

all these different aspects—many of which are tag names that people may or may not understand—we are going to see some big changes around electric vehicles, around these smart appliances and so on. How that plays out in terms of energy policy is difficult to see, so we need to have flexibility, we need to have transparency and the confidence to show the sort of assumptions that are written into energy policy and that type of long-term leadership. I think once you have that, then things will follow.

Simon Skillings: Very briefly from me, buildings need to be treated as an infrastructure in the same way as other energy assets and we need to have the institutions that can coherently optimise the delivery across the infrastructure landscape, and that suggests a much more local infrastructure delivery framework than we have at the moment.

Q66 Chair: Just one last question and I asked Mr Stuart this on his way out: we are where we are. We are now at the sharp end of the new environmental policy changes. Is there anything that you would do from here that can significantly improve the renewable sector in Scotland and help us meet our renewable objectives?

Professor Bell: Yes, I would just second what Niall was saying about clarity on the Levy Control Framework and the next round of Contracts for Difference, being the big thing in the short term about renewable electricity specifically.

Q67 Chair: On this—Contracts for Difference—is this a real imperative then? Is this where we are at in terms of getting this right?

Professor Bell: That is what is going to unlock the next round of investment, I think, yes. Whether it is a long-term mechanism, as we have talked about, there are some deep issues there, but certainly that is the game in town at the moment.

Andy Kerr: But I would also say that in Scotland, large-scale renewables is one thing. The big push at the moment is on the more local renewables, whether that is the Scottish Government's push for an energy efficiency programme—to treat it as national infrastructure around buildings—or whether it is the whole notion of local energy systems. Rather than thinking in terms of very large-scale windfarms, it is thinking much more about how you can deliver benefit locally from matching supply and demand, and that is matching and bringing in electric vehicles and so on. I think those are the big changes that we are seeing, but I would echo that point about the CfDs.

Simon Skillings: I would re-emphasise the point that I think it would be a mistake to make it a debate, arguing about who grabs what bit of subsidy. It needs to be a much more fundamental think about how we are going to deliver the objectives that we need to deliver.

Chair: Great, thank you all. This is a first look into this today and I think you have given us a really good background and a flavour of the issues that we need to pick up and look at, so we are very grateful for you coming along this afternoon. If there is anything further you want to add or contribute to the work of this Committee and this inquiry, please submit it to ourselves, but that is all for this afternoon.