



Energy and Climate Change Committee

Oral evidence: [Implementation of Electricity Market Reform](#), HC 664, Tuesday 18 November 2014

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Written evidence from witnesses:

- [DONG Energy](#)
- [Renewable Energy Association \(and Annex\)](#)
- [Solar Trade Association](#)
- [EDF Energy](#)
- [Citizens Advice](#)

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Members present: Mr Tim Yeo (Chair); Ian Lavery; Mr Peter Lilley; Albert Owen; Christopher Pincher; John Robertson; Sir Robert Smith; Graham Stringer; Dr Alan Whitehead

Questions 1-107

Witnesses: **Danielle Lane**, Head of UK Regulatory Affairs, DONG Energy, **Dr Nina Skorupska**, Chief Executive, Renewable Energy Association, **Leonie Greene**, External Relations, Solar Trade Association, **Paul Spence**, Director of Strategy and Corporate Affairs, EDF Energy; **Simon Moore**, Infrastructure Policy Manager, Citizens Advice, **Professor David Newbery**, University of Cambridge, and **Andrew Buglass**, Head of Energy, Royal Bank of Scotland, and Co-Chair of Low Carbon Finance Group, gave evidence.

Examination of Witnesses

Witnesses: **Danielle Lane**, Head of UK Regulatory Affairs, DONG Energy, **Dr Nina Skorupska**, Chief Executive, Renewable Energy Association, **Leonie Greene**, External Relations, Solar Trade Association, and **Paul Spence**, Director of Strategy and Corporate Affairs, EDF Energy, gave evidence.

Q1 Chair: Good morning. Thank you very much for coming in. I will skip the formal introductions because we do know who you are and I think you know who we are. We have another set of witnesses later, so I would like to get through this session in about an hour if possible. Do not feel you all have to answer every single question, but equally do not hold back. The idea is to give us the evidence on which we can write a well-informed report, and we welcome controversy and disagreement. I cannot say it is off the record because it is published, but do feel free to be as indiscreet as possible.

Can I start with a general question? The speed with which EMR has been implemented so far and the quality of the implementation: how do you think all that has gone?

Dr Skorupska: Maybe I will start.

Chair: I should have said before that I declare an interest. I am the unpaid president of the Renewable Energy Association of which you are the chief executive.

Dr Skorupska: Nice to see you again. Thank you. Good morning.

At the REA we represent over 1,000 members; the large majority of them are small to medium enterprises. Bringing in such a change in the electricity market reform at such a pace, from our point of view, has meant that this has been rolled out in quite a piecemeal way. We welcomed the fact that the Government consulted on many different levels. However, much of that information was being rolled out through secondary legislation and potentially may not have had the depth of scrutiny. So the small and medium enterprise members of the REA are very concerned about what that would mean for them to be able to participate effectively.

Leonie Greene: Leonie Greene from the Solar Trade Association. On pace and quality, I felt it was a tale of two halves. Very little seemed to happen for years. It was a bit of a black box. We did not know what was happening. We all thought it was going to be an administered process so we were relatively relaxed and we did a lot of work to get the strike prices accurate, even telling DECC we needed lower strike prices. Then suddenly there was a complete change of policy at the beginning of this year when we were being plunged into direct auction with technologies that solar clearly is not ready to compete with. Thereafter started an avalanche of consultation, from our perspective. To give DECC credit it certainly kept up the pace to deliver on time, but there is a relationship between pace and quality and some of these consultations were just a couple of weeks long. We barely had time to consult our members to get their views. It was very difficult to get members to engage because no indication had been given of the budget that would be allocated to CfDs, so people did not have any idea how relevant it was to their business. So I feel

concerned that the pace was so fast it was difficult to believe that the feedback was being assimilated. From our point of view, there were a lot of problems with CfDs and we were very disappointed that a lot of the solutions we came up with were not absorbed.

Finally, on quality. For us a key thing on quality is evidence. We felt that a lot of the evidence on solar was really very poor, and the EMR modelling was based on modelling from 2012 and was completely out of date in terms of cost.

So full credit to DECC for pace over the last six months, but I am concerned that has come at the expense of quality, particularly for SMEs.

Paul Spence: Paul Spence, from EDF Energy. To comment on our experience, electricity market reform has been about a six-plus-year journey. There was a phase before the Energy Act passed into legislation that was perhaps slower than originally intended, but since the Energy Act has come into force we have seen DECC pretty much keep to the timetable they set out at that point for the steps to implementation. For National Grid and the Low Carbon Contracts Company, there are a lot of pieces of secondary legislation to put in place. They have been moving at pace to do that but they seem to have been reasonably well organised to undertake what is a pretty major change. Before coming before this Committee, I asked my team to give me a sense of the scale of listening that the Department has done. There have been some 18 major consultations over the course of the EMR journey and we have had, I think, five Select Committee investigations into aspects of that journey along the route. From our perspective, we feel that we have been engaged in pretty intensive consultation and refinement of the process and have had the opportunity to put in evidence and be listened to.

Danielle Lane: I would agree largely with Paul. Maybe this is the difference between being a market participant and a trade association that I feel that we have been very well consulted through this process. I agree that the pace has picked up over the last six months since the Energy Act has become law, but one would expect that in order to make sure the systems and processes are fully operational in time for delivery of the capacity market and the CfDs and the projects that have come through as part of that.

Q2 Chair: Looking ahead are you worried that the timetable may slip?

Danielle Lane: I don't think so. From my perspective at this point I think that we are on track and it appears that all the relevant parts are happening. I sit on the EMR implementation board at ELEXON as an industry representative and it seems that all of the processes are happening as we would expect.

Q3 Chair: Looking forward, do you think DECC has committed enough resource to manage the programme?

Paul Spence: Again from our perspective, we have seen DECC deploy a lot of people to the team looking at EMR and we also saw National Grid mobilise early. What we are seeing now is the Low Carbon Contracts Company picking up its responsibility within that. Maybe they were later in but they appear to be doing their piece of it as well. So we see the right level of resource. Looking forward what we are expecting is that there will be lessons to learn through the first implementation of the capacity mechanism through the first round of the auction process. We would hope and expect that DECC will need a level of resource to deal with learning those lessons

and any refinements that might be needed as a result of that, but broadly we are content with the level of effort they are putting into getting this right.

Dr Skorupska: When we have requested DECC to provide expert advice—when we brought our members together to take them through these 18 major consultations that have accelerated over the last six months—the resource has been there. The concern was that not all our members—because some of these individuals are one-person companies, to exaggerate a little, through to 10s and 20s—cannot attend all of those sessions in the way that my colleagues from the larger organisations can. Having worked in a large organisation myself, I know that you have whole teams dedicated to map and track all of those different changes and nuances and understand the risks. We have done our best as a trade association to do this for our members, but there is a significant risk there that not everybody will be ready, particularly as this market is there to introduce more competition and encourage more small to medium enterprises to enter into this market.

Leonie Greene: Yes, I would echo that. I felt that particularly towards the end there seemed to be a real effort from DECC to lay on more workshops, but it did feel quite erratic. They were often at short notice and they were often pitched at a level of complexity and detail that did not take a lot of these people with them. I think Nina's point is key—that if DECC is serious about getting more competition, more new entrants into the sector, then they have to take particular and special care to engage those new entrants and smaller enterprises that just do not have the resources to deal with the complexity of this. That did happen in some shape or form, particularly towards the end, but it did feel a bit chaotic.

Q4 Chair: Building on that point, do you think the Low Carbon Contracts Company is going to be adequately resourced to manage the contracts going forward?

Leonie Greene: I will pass on answering that, just because we have had much bigger issues to deal with than that, and it was not something on our bandwidth that we had a chance to look at.

Danielle Lane: The interaction we have had to date has been very good, and we can see evidence that they are building their teams and they are building their knowledge. We have had a couple of meetings with them about specific contracts that we have, and they seem to have the right resource. I think it will be important going forward that they are able to help educate some people as well as to administer the contracts.

Q5 Chair: How about the role of the delivery body? Has that worked all right?

Paul Spence: We would say yes. I am here representing a company that is both a generator and a supply company, so we have to think about both sides of the implementation: how we are going to administer the contracts that we have—for example, for the investment in Hinkley Point or our renewable investments—and also how we are going to deal with billing our customers for the payments flowing through the delivery bodies. Our experience in both cases has been that we are seeing a pick-up in that. We are also seeing that when we have questions or things that we need to clarify, or when there is a consultation, there is the right level of effort and expertise from both the contracts company and the delivery body to be there ready to have those discussions with us.

Q6 Sir Robert Smith: I should remind the Committee of my entries in the Register of Members' Interests particularly to do with the oil and gas industry and a shareholding in Shell.

To what extent have the early CfDs under the enabling renewables been a success in encouraging investment?

Danielle Lane: I guess this is a question for me. I know that Dudgeon—that is the Statkraft and Statoil project—has already reached FID and is under construction. We have a project—the Burbo extension—that should be reaching FID in the next couple of weeks, obviously subject to our board's approval. The other projects will be following shortly after that.

We would say that we are nine to 12 months ahead of where we would have been without the contracts. It is enabling us to place design contracts—for example, for offshore substations—and geotechnical contracts for the kind of detailed survey work that will do preconstruction among other things. So, from our perspective, although you would not say there were necessarily visible wind-farm turbines going up, there is a lot of work that has been done that would not otherwise have been done without them.

Paul Spence: The large project we have been involved in under the FID enabling arrangements has been the Hinkley Point C project. If I total the £12 billion or so of investment in offshore wind and £16 billion of investment in Hinkley Point C under those early contracts, £28 billion of investment that has being enabled by the CfD mechanism looks like it is a pretty successful start of a regime in the first year of operation.

Q7 Sir Robert Smith: Are there any lessons to learn so far?

Danielle Lane: Good question. I would say that the contracts are extensive and they take a lot of time and attention, and good contract management on both sides is going to be fundamental to delivery. There are some critical milestones that a project needs to meet and it is changing the way that we are running our normal business processes. We are having to take decisions at an earlier stage and we are having to maintain a very clear focus on ensuring that we are meeting timetables within those contracts. So I suppose a lesson—I am not sure it is a lesson learnt, but it is something we are in the process of learning—is about keeping an eye on that as well as the rest of the business.

Q8 Sir Robert Smith: That is as an investor. Are there any lessons that the Government should be learning?

Paul Spence: If I may? There is a corollary of that and it is certainly our experience through the negotiation of what is a very large, very long-term contract for Hinkley Point that there are lots of details that you have to think about, and think about early. You have to think about how you are going to construct the project and then, in our case, how you are going to run the nuclear power station for a very long time. Thinking about the contingencies of that, to make sure that everything is done right, took a lot more thought than DECC had expected in the early days on that first one. As Danielle says, it will take active contract management. So there is something about making sure that you have sufficient people who are legal/commercial and able to understand the interactions within what is a complex contract, and able to keep an eye on whether or not everything is working as was originally expected.

Q9 Sir Robert Smith: How is the move to competitive auctions going to impact?

Danielle Lane: For offshore wind it is a really huge change. The balance of risk becomes a lot greater for the development costs. You can spend £60 million to £100 million pre-auction for an offshore wind project. I think what we are already seeing is that appetite being quite difficult for people to see how the future will play out. It will be interesting to see what the outcome is of the first round of auctions, but we have long lead times—we have seven years from inception to delivery—so it is a different risk.

Q10 Sir Robert Smith: At what point in those seven years does the auction kick in?

Danielle Lane: Probably about year 4.

Q11 Sir Robert Smith: So you are taking all the risk of judging the outcome of the auction for four years.

Danielle Lane: Yes, but that said, that is the direction of travel. That is what it is going to be, so business will need to adapt.

Paul Spence: As the new rules develop what it means is that we are paying a lot of attention to what will happen in the first round of the auctions. It is then causing us to look very hard at both our onshore and offshore wind projects to say how well we think they stack up against the other possible competition that will be in an auction, and to ask the question if it therefore makes sense to invest the amount of money that Danielle talks about. In a way I should be saying that is great news because that is entirely what should happen. It should only be those projects that developers think are the best projects, the ones that are most likely to be competitive, that should carry on down that process. That is what is supposed to happen, I think, isn't it?

Dr Skorupska: May I comment? You asked the question: did the enabling drive early investment and give that certainty? Of course it did. With the major transition of one market to another we had 8 gigawatts of capacity apply for that and 4.5 gigawatts came under contract with that. I think the big concern is about how the budgets are being spent on those projects. Ultimately there are still questions about how that decision was made to allocate those funds to those particular projects. That still is not clear. We have asked the Government several times what was the process for deciding. Many of my members are beneficiaries of that and they do not mind us asking that specific question.

I think the concern for me is what is left then for the CfD regime in the auctions that we are stepping into, how the Government has responded to the state aid guidance that came from Europe and their interpretation of how to enable the whole EMR mechanism to comply and get that clearance. Going into competitive auctions is a key requirement for the state aid guidelines. I believe in the first instance that we must have at least 5% go under auction. It is quite recently—in the last three months—that how the pots were going to be allocated has been revealed. We have the established pot, the less-established pot and this very strange third pot that has no money in it. You can bid to have your project get some funding across multiple years. What we are not seeing here is a real understanding of how the different technologies can be supported to come and demonstrate, deliver and get their costs down. Somehow this framework is still geared for the people who really understand the market very well and less so for the people who want to enter the market, which is what we want to encourage.

Leonie Greene: Can I add to that? Obviously we were out of the FIDeR projects, though I saw that seven solar projects did bid in for that but were dismissed, and we do not really know why. We did ask the NAO.

But on Nina's point, the lesson from last year's budget, we really feel in the solar industry that we are being asked to pay the price of that commitment of budget on a basis that, as Nina says, was completely opaque. We do not understand why some technologies have not been subject to competition. Of course we have to have a balance between technologies, and of course offshore wind is incredibly important, but in my view something has gone wrong when the solar industry—half the people in large-scale—are talking about laying off staff and going into survival mode.

Q12 Sir Robert Smith: So what changes should they make? What changes could they make that would comply with the state aid guidelines?

Leonie Greene: I think Nina's point about the categorisation is an important one. Among the avalanche of consultations this year we had the state aid consultation, which really had some very poorly conceived proposals in it. They were really very intellectually weak. So there was a very strong pushback against that and in fact we won. What was going to be in force was a very strict deployed/non-deployed technology with quite strange definitions and the idea that a technology is mature above a certain percentage of deployment. All that tells you is what has been backed with subsidy in any country; it does not tell you about the learning curve. So in fact the deployed/non-deployed was pretty much dropped by the state aid guidance, or it is certainly optional. But the UK Government seems to have taken a very zealous interpretation of mature/non-mature and put us—the then 18-month-old SME-dominated solar industry—in a pot called mature with technologies like hydro, waste, onshore wind, technologies that are clearly very mature—and offshore wind in a non-mature pot. So it feels to us that there has been a decision to choose what technologies you are supporting, to allocate resources to, and to then structure policy around those decisions to make sure that in the end, for us in solar, we are left with a pretty precarious outlook. In my view that is tragic because no other technology has delivered cost reductions like we have over the course of this Parliament.

Q13 Sir Robert Smith: Does the rest of the panel share the same view?

Danielle Lane: There are different issues for different technologies and I think it is going to be very difficult under any auction to have technology neutrality at this stage. There is a lot of development that is going to happen across the board in renewable technologies. I would argue that offshore wind is still in development. We are only just getting to the point where we understand the nature of the industrialisation that we will have to do, and we are still deploying improved turbine technology. I think we have a long way to go in terms of cost reduction. We have very clear targets and we will meet them but there is a difference in scale in terms of delivery and capacity. There is also a difference in scale in terms of the number of projects you need in order to get down that cost curve. Solar has the advantage of being able to be deployed in a greater number of projects than offshore wind. It is always going to be a balance and we work within the framework that is available.

Paul Spence: You have asked the question about improvements: what things might be put in place. The two things that are desirable under EMR are that it provides a clear framework and it provides some predictability that allows investment to happen. The questions that face all of us,

whatever technologies we are developing at the moment, are all about what happens as we go into the 2020s and towards 2030. Having a sense of how the categories are going to be defined and a sense of how much is available in each of those categories will help us as we look at the potential projects that we need to develop. So having that sense of where this goes beyond 2020 and out beyond 2030 will only be helpful.

Dr Skorupska: When we talk about the allocation of the pots within the CfDs we have continually called on the Government to introduce minima because if they are competing in the less established pot, that whole budget could be taken up by one wind farm or one and a half wind farms, depending on the size of them. Marine does have minima, but deep geothermal, advanced combustion technologies and even biomass CHP—which is something I think everybody is pushing for, where you have seen the most efficient use of a resource in terms of heat and electricity—do not have minima either. So in these early days, that would help give the certainty to those new technologies to push forward. Thank you.

Q14 Dr Whitehead: Aren't the calculations on the move to auction from allocation and the creation of different pots and the relevant paucity—or indeed non-existence—of resource in particular pots a function of the fact that they are all overseen by the levy control framework and that the various competitions are carried out within that overall constraint? Certainly it appears from the Department's latest annual reports that there will be no resource in the levy control framework from about 2017 onwards. So does that not rather affect, for example, the talk of whether there should be minima for certain technologies and whether there should be room for a reasonable amount of competition within particular categories up to and past that period? That is a question, incidentally.

Paul Spence: Yes, absolutely. The levy control framework is designed to be a mechanism that looks at what consumers, who are ultimately the people who are going to be paying for it, can afford. The aim of EMR is to establish the balance between the security of supply, decarbonisation and affordability. We recognise that there is a need for a large amount of investment. The levy control framework and then the auctioning are designed to keep that downward pressure and to make sure that we keep that affordability in mind. But, as I said before, what would be very desirable for us is to have a clear sense of what that means in terms of how much is available, and in the rules of the competition between the different low carbon choices—whether it is a different category or whether it is the total amount. But it is a reality that we have to keep in mind. Certainly my customers are reminding us all the time of the importance of thinking about what their bills look like, and the levy control framework is part of a control mechanism that makes sure that happens.

Q15 Dr Whitehead: But if the levy control framework effectively kills anyone's ability to get anything over a period, what sense is there in the various auctions?

Paul Spence: Then we have a problem.

Q16 Dr Whitehead: Do you think we have a problem?

Paul Spence: I do not know what is available in the framework as I look out beyond 2017, so it is difficult to judge whether we have a problem or not at this stage.

Q17 Dr Whitehead: Well, there is nothing. Do you think that is a problem?

Leonie Greene: It clearly is a problem. I understand the need to put limits and the effect on bills but it then does come back to the value for money point. We in the solar industry are completely perplexed as to why solar is being suppressed, because we would be delivering cheaper than nuclear, and cheaper than offshore wind. This is our cost reduction graph, or the reduction in support, just for this Parliament. That is unprecedented in the history of energy. We just needed one more push—one more period of stable policy—to get solar off subsidy. We think we have that in sights at the end of the next Parliament. From a value for money perspective, and trying to squeeze what you can in the LCF, why slow that astonishing rate of cost reduction and that ability to deliver much more with less—potentially zero—subsidy? That is very perplexing for us.

I think Danielle is absolutely right; it is about getting the balance right, and there are different arguments for all these technologies but—this is another graph—I think something has gone really wrong when under EMR large-scale solar is this tiny little bit here. This is what we are expecting in 2020. It has effectively been capped at 4 gigawatts. Because of load factors, that is like capping wind at 1.3 gigawatts. This is crazy. So this is the balance then: nuclear; offshore wind; onshore wind. Just from an engineering point of view and getting a good annual profile of the output of renewables, it is expensive, too, not to have that balance. So I think, Alan, the point you make about the LCF is absolutely right. It is within those constraints that solar is now being hit. In a way it is being used to balance the LCF, and I think strategically, and from a consumer value-for-money perspective, that does not make sense where solar is concerned.

Q18 Dr Whitehead: Mr Spence, you mentioned the question of making sense of investment up to 2020 and beyond. There is no sketching-in for any form of levy control framework availability after 2020.

Paul Spence: No, there is not. That is the piece of the jigsaw that would be very helpful to have next. What we will know is what commitments have been made through the projects that have already been agreed and approved under FID enabling, and the projects that will win in the first round of the CfD auction process. So we will know what is required for those projects. What we then need to know is what is going to be available, as we look forward, for the pipeline of other projects that we need if we are going to deliver the £100 billion or so of investment in electricity generation technology that is needed to keep the lights securely on over the course of the next decade.

Q19 Dr Whitehead: On present calculations is that not rather difficult to do, seeing as how you have bagged all the CfDs in any one year when Hinkley C starts operating?

Paul Spence: Hinkley C clearly is going to make a big contribution to UK supply: 7% of electricity demand from one project. Yes, that means that it is a large single CfD, but it is then going to make a very large contribution to baseload low carbon power. I hear what Leonie says, but the price of that relative to the other low carbon technologies available today is good value for money for consumers.

Q20 Dr Whitehead: I think my point is: would you expect perhaps your thoughts about what the levy control framework might look like after 2020 to be very much mediated by the fact that a very large proportion of what would have been assumed to be the trajectory of the levy control

framework up to 2020 is already in your bag? At that point, it could conceivably starve everybody else of resources unless something different is designed.

Paul Spence: I have the same questions about the future investments that my company hopes to make, whether those are investments in onshore or offshore wind projects or whether those are investments in Sizewell, the next nuclear power station that we hope to build in the UK. For each of those we have the same question: will the structural funding be available to make it possible for us to take those investment decisions? Again, I come back to the fact that my customers expect me to be investing to keep the lights on today and to be making sure that the lights go on in future.

Dr Whitehead: Thank you.

Q21 John Robertson: I would like to try to concentrate more on the SMEs, but I have to say, Mr Spence, your company seems to have a great say in things with this Government. It does not surprise me that you support what they are saying because I get the feeling that most of it came from you in the first place. Is it not totally unfair towards SMEs the way the whole thing has been set up?

Paul Spence: Clearly I am part of a large company and I argue that large companies can help contribute to what is a very large challenge but I do not see things in the design of EMR—

Q22 John Robertson: That is because you are benefitting from it. It is unfair, is it not? I am not worried about how well you are going to do; you are a big company and you give a lot of energy to the country, I know that, but it is unfair.

Paul Spence: Well, my understanding is that the mechanisms are designed to be size-independent and are designed to be equally available to companies large and small. As I look at it—whether it is at the capacity auction process, which has a large number of smaller generators looking to participate in it, or whether it is the CfD process, which is having a growing number of smaller participants—I see smaller companies, different types of investors other than traditional utilities, participating in this new market and I see a design that makes it possible for that to happen alongside companies like mine.

Q23 John Robertson: Dr Skorupska, can you explain this sub-pot, which has no money in it, to me? The three pots you mentioned earlier: what is the third pot, what is it there for?

Dr Skorupska: This is pot 3, which should be supporting biomass conversions for delivering great value for money, renewable energy. Currently a number of projects are still waiting state aid guidance clearance within the FID enabling process. The feedback I received from the Government was that should one of those fall away, then the money from one of those three projects will be moved into this pot.

John Robertson: So it is a sort of waiting pot, really. That is a shame.

Dr Skorupska: I don't think it is an anything kind of pot, really.

Q24 John Robertson: So the SMEs are really in pot 2, then. Is that where they are mostly sitting? The SMEs are in pot 2?

Dr Skorupska: Yes, for the less established technologies. Pot 1 is full of SMEs as well because this is where you are seeing onshore wind and also the solar deployment. In a way solar has been greatly disadvantaged by not enabling them to participate further in the renewable obligation. They have been forced to go into those auctions way ahead of any of the other technologies. So if you laid the technologies side by side, come this first auction the other technologies, other than solar, have a choice to still go into the renewable obligation and that is where everybody is going at the moment.

Q25 John Robertson: I was going to ask a question about the problems facing the SMEs but you have pretty well answered most of them.

Leonie Greene: Could I chip in on that?

John Robertson: Let me ask my question. You can chip in on that but I do have a question for you on your own here.

Is it realistic—and this is for the three of you—for the SMEs to consider applying for a CfD when they have to put the money up front and yet have no way of knowing whether they are going to get a return on their money? How is that going to figure in a small company? How are they going to manage that?

Dr Skorupska: It is one of the biggest uncertainties. While a lot of handholding can be done, it is a new concept. Essentially, as I mentioned before, they do not have the resources; they do not have the time to be able to look at it. They have to pay for additional legal support over and above their potential businesses to climb through this 430+ contract document. At the moment they do not even have the support of the offtaker of last resort absolutely aligned with participating in the first auction.

John Robertson: My colleagues are going to ask specific questions on that. Ms Greene, do want to come in?

Leonie Greene: If I could talk you through it, what really concerns me is this. We pride ourselves on the quality of our membership and we know good quality companies that are not bidding. They do not feel that they can shoulder the risk, and that really worries me. So just to explain the risk and why I do think—you are right—that it is unfair for SMEs. All the way through you are facing much greater risk as an SME. On the allocation risk you are having to sink typically around £200,000 just to meet the prequalification criteria to even bid, so that is the risk on each project. You are also least able to adopt some sort of broad, sophisticated bidding strategy. The big players are going to have the resources and the capacity to do that. You are least able to cope with yearly bidding. What happens if you do not win your bid? How do you stay afloat for a year? So on the whole allocation risk the SME is severely disadvantaged.

Then you get continued risk even if you win the bid. Solar, for example, has the shortest commissioning window. I just spoke to a member before coming in here who says the contract is totally unclear; he can't work out when he is meant to build what. You are potentially more constrained on your project milestones, not least around the issue we have about minimum

import-pricing conditions from Europe. That gets into another issue. Then, in addition, we have the greatest risk on the route to market for power sales. This is the issue that the route to market OLR mechanism is trying to solve. So it gets even worse, I am afraid, for solar. Those are the problems for SMEs. But if you are solar, the nature of the solar industry is rapid: it can build yearly, on a yearly cycle, and pretty quickly. The problem with CfDs is you are bidding not just against technologies that you are not ready to compete with yet, but you are bidding against future technologies. So we are trying to get a market next year. That is what the industry needs. It needs a regular rolling market to get subsidy down to nothing. We are looking at a mechanism that will reward further term projects. It will reward projects being built towards the back end—2020, 2021—so we are extremely concerned about solar.

Q26 John Robertson: Sorry to stop you, but we are limited timewise. On the renewable obligation, which will affect you rather quickly—by April next year—along with what we have already talked about, do you feel that large-scale solar is really out of the question in future because basically companies will not be able to take the chance or will not be able to afford it? Solar is very popular with the general public—

Leonie Greene: Exactly. It is the most popular, yes.

John Robertson: —but if you are not getting what you call an even playing field, how do things like the RO affect you?

Leonie Greene: Well, the lifeline is the sub-5 megawatt RO, and the industry is hanging on to that as a lifeline to get us through to a point where we could be more competitive. So we are very concerned that confidence is given on that because the way DECC are talking about the 4 gigawatt cap under EMR and the prospect of that being challenged again was raised in a recent DECC consultation. The industry is clinging to that as a lifeline so that is critical but in terms of the larger projects that we are talking about, what people think will happen is that it will be the very big companies—probably the ones that have an international arm—that will be able to afford to bid. So people joke about a big six in solar.

Q27 John Robertson: So SMEs are out there.

Leonie Greene: Yes, well, what you will see is the big players getting advantage. There is another frustration for us in terms of public support, which is that we have tried very hard to define good practice—these are some of the guides on solar—and it is very important that quality schemes are built. The danger with CfD is you are just driving a race to cheapest, cheapest, cheapest so we are really concerned about how to maintain quality in that as well as the worry about losing diversity across the industry at such an early date.

Q28 John Robertson: In terms of the CfD/renewable obligation transitional period, how is that going to play out with small and medium-sized companies in the transition? What will they go for in the short term? Ms Lane?

Danielle Lane: I think it very much depends on the technology you have.

John Robertson: So who is going to win? Anybody? Which one are you picking?

Danielle Lane: Who is going to win? Can we come back to you after this next period? I think there is a challenge for everybody in moving from one market structure to another and the biggest change, that we perhaps did not recognise at the start of this whole process, was the move from what was perceived to be an unconstrained budget to a constrained budget. I think that is a real step-change for the industry. What I think is important to stress, though, is that we should all be aiming for grid parity with other technologies. It is difficult, and I have a lot of sympathy with everything my colleagues on the panel were saying, but as a renewable sector we need to be focused on bringing costs down. As an offshore wind sector we have to get the costs down; otherwise we will not have a future. It is very important for us as an industry to start to adapt to that. The challenge for SMEs is the level of resource that you need in order to get up the learning curve with this new system, and that is the same with any change. Who is going to come out best in this? I don't know. We will have to see over the next few months.

Dr Skorupska: In my view, everybody is still going through the renewable obligation because that is what they know about, but also because, in the introduction to the transition, there are some grace periods on offer. But the CfD whole policy is highly complex, so better the devil you know than to go for the other area.

John Robertson: I am going to pass you over to my colleague.

Q29 Ian Lavery: RenewableUK in particular has expressed concern with regard to the delay of the offtaker of last resort. Is there wholesale concern about that, and what is the likely impact of any delay in bringing forward the OLR?

Leonie Greene: We spent a lot of time last year working on OLR and trying to get this route to market issue solved, but that is when we thought that CfDs were going to be administered. To be honest that became the least of our problems at the start of this year. We have had rather more fundamental survival problems for solar. Nevertheless, that is an important part of trying to mitigate the risks for SMEs and we have repeatedly come up with solutions for that. So we have our problems for SMEs and solar on how to solve it, and of course one of those is OLR. I think it is important. We all know that there are very few long-term PPA providers and that the aim of this was to try to open up the short-term market as well to people who can provide PPAs, perhaps on a short-term basis, with less of a credit rating. So I think it has merit, but at the moment you have the surety of the contract but you will not get the payment until October next year, so they have brought that forward. It helps—it will help for the next auction—but to be honest, in the big scheme of things we have much bigger worries.

Dr Skorupska: I think it is very important to have the alignment of the offtaker of last resort, this backstop, almost guaranteed to derisk the concerns of the small companies being able to attract a power purchase agreement. We are fundamentally asking some of the larger operators, the people who supply our electricity to the consumers, to take on that risk and the worry is that conversation and those contracts are not coming to bear. So the OLR is very important and we support RenewableUK in bringing it forward. We are pleased it came forward year, to October, but we are arguing that it should be implemented sooner because it just takes away that level of risk. The concerns are the £25 per megawatt hour discount off the current price. That it is nearly half of what the wholesale energy prices currently stand at so there is still the detail that has to be worked through there and what that means, but having a mechanism in place is a positive step.

Leonie Greene: Just to chip in on that point about the level—the £25 discount. From our perspective, we did not have bandwidth to do what would have been a really sophisticated piece of modelling to work out what that discount should be, but the feedback widely across the industry was that was far too generous. Partly, perhaps, that is why we have slightly discounted OLR in terms of the extent of the solution it can provide.

Q30 Ian Lavery: Far too generous on whose behalf?

Leonie Greene: Well, not generous enough in terms of the project that is trying to seek recourse to that if it is in trouble and cannot contract elsewhere. I understand DECC were trying to strike a balance between it not becoming the default PPA place and wanting to stimulate the market. But the feedback, just roughly without having had time to do a proper detailed analysis, was that that did seem to be a very high discount.

Q31 Ian Lavery: On the competition and the future of the auctions: how can DECC ensure that there are sufficient bids in future auctions for CfDs?

Leonie Greene: Sufficient bids? Well, to have made it work for SMEs and new entrants would have been a major way to achieve that. The danger is that a lot of highly competent companies are ruling themselves out. In my view, if they had taken more care to make sure that CfDs will work for a much broader range of actors and to be sensitive to the kinds of pressures that smaller companies are under, then you would have a lot more bidding taking place.

Q32 Ian Lavery: Is there any way in which DECC can encourage more people to enter into the auctions?

Leonie Greene: We came up with a whole list of solutions, ranging from the contract management difficulties—some of the detail there that they could address—to more frequent auctioning. That was key, and would make life much easier.

Dr Skorupska: I would agree with that.

Leonie Greene: The OLR support; to have it ahead. We even came up with ideas about how they could split the budget, because from our concern in solar, are we going to have any market in the next two years? We just do not know.

Q33 Ian Lavery: Has DECC been listening to what you have been saying?

Dr Skorupska: We had a good meeting with DECC on that.

Ian Lavery: Took the words right out of her mouth.

Dr Skorupska: The phrase “we hear what you say” was used several times. In some places we know we are getting our influence in there for the small and medium enterprise businesses but on others we are still just very worried. The one that I find very difficult is—and I have to say it, ladies and gentlemen—that it is more about the general election. We believed we needed more auctions, more frequency in the year, and the argument we got back was that they needed to do an in-depth review first before they know how to run the next

one. That is very good—big tick. However, it is not very good for businesses that have to wait and see if they have the chance to have a go again.

Leonie Greene: Again, it is SMEs who are most disadvantaged by that—a year before we could review what happened. Have DECC been listening? In all honesty, no, it does not feel like they have. The meeting that Nina and I had with DECC came on the back of one of the very few opportunities that Parliament has had to look at the whole package of CfDs and how it adds up, and that was in the Lords, in Committees, just before summer, before the recess. Lords from every party were expressing serious concern about how SMEs were going to fare under CfDs, and it was on the back of that that we had this meeting. They were also very concerned about the sheer complexity—being avalanched with information but given very little time. So I remain very concerned about the lack of scrutiny in the round about the next CfD package because we were only getting critical final elements over summer.

Q34 Ian Lavery: Does this distinctly advantage the big six?

Leonie Greene: Well, obviously if you have your contracts administered, of course you are advantaged. If you are a bigger player that can shoulder very large risk, if you have the means to do very sophisticated kinds of bidding strategies, of course you are advantaged, absolutely.

Q35 Dr Whitehead: Turning to the upcoming capacity market auction, the process of prequalification and the arrangements for what level of capacity there will be that is to be auctioned: how well prepared has the industry been in your view for that whole process?

Danielle Lane: We have not participated in it.

Paul Spence: Clearly we have been involved in the prequalification process. Again we have been aware for a long time that it was coming, and the rules for prequalification were laid out very clearly. We saw DECC and Energy UK, as the trade association, do a lot of work to make sure that not just the large companies but the smaller generators were aware of the opportunity, aware of the rules, aware of the expectations to meet prequalifications. So we saw a lot of effort to get everyone ready. We saw quite a lot of the capacity then prequalify first time through but there was a chunk that did not. So clearly there are some lessons that are learnt from the roughly 5 gigawatts of capacity that did not go cleanly through prequalification the first time, but we now have a position where we have some, I think, 60 gigawatts of bid for 48 gigawatts, or thereabouts, of capacity requirement. So we are set for a process where you have players, large and small, bidding in a very competitive auction and we will see the outcome in December or January.

Q36 Dr Whitehead: But for existing plants that do not secure a capacity agreement or indeed do not prequalify, presumably on the present arrangements they are effectively out of the picture pretty completely because the T-3 auctions and so on will be pretty minimal, will they not?

Paul Spence: Some of the existing plant that has not prequalified is covered by some of the other shorter term arrangements, so by the supplemental balancing reserve scheme with the grid. So the owners of those plants are essentially saying, for whatever reason, that they believe they can stay around for the short term but they are not as confident that they can be available in 2018 through to 2021, which is the period covered by that next auction. So it is the natural process

running, I think, of people looking hard at their plant and saying, “How confident can I be that the economics and the technical capability are right for my plant?”

Q37 Dr Whitehead: The plants that are in the short-term operating reserve and the supplementary balancing reserve are only there for a specific period until the capacity auctions supposedly take effect.

Paul Spence: Yes.

Q38 Dr Whitehead: So presumably they have an attenuated prospect, do they not?

Paul Spence: It will be for the owners of those plants to then judge whether or not there is a continuing need for grid stability services that it is right for them to carry on running for. They do have the option of participating in the future capacity auctions, so it is not a one-off, “If you don’t bid now, you can’t bid in future auctions.” So they do have other options going forward for whether they stay on the system or whether they choose to close down. But, again, from the perspective of my company, there are mechanisms for the grid as a system operator to manage capacity in the short term. We then have the capacity auctions in the medium term, which will give us a signal of what is going to be around. Then we have the underlying market and we have contracts for difference. So it is a coherent set of pieces that should allow DECC, and the system operators, to manage the transition of the system.

Q39 Dr Whitehead: I take your point and I also take the point that you use the word “should” in terms of the overall design of that process. I have two concerns. First, that the design itself may, for reasons we have started to look at, indeed procure overcapacity over a period. Secondly, as a result of what is likely to happen with, say, refurbished plants and so on, which will have a multiple-year effect in the T-4 auctions, the amount of capacity then subsequently available, either for plants that are coming out of those temporary mechanisms or for plants that have not either prequalified or succeeded in the first auction, will be negligible.

Paul Spence: If I can try to answer in two parts, the first one in terms of the risks of over-procuring: as we observe it, DECC have been through a process to define the security of supply standard that they believe is appropriate for the UK. It is a similar standard that we see applying in other European markets, including France, in terms of that risk of supply not being there. The level of supply looks like it is comparable with other markets and it looks like there is a mechanism that is designed to allow them to achieve that. Is there a risk about whether or not there is sufficient available for plant in future rounds of auctions? In a way, that is part of what we have to see through this first process. They have kept back a relatively large amount of expected future need and if demand for electricity develops as people expect, there will be sufficient for future auctions. It is a balance to strike between deciding and buying more now or buying progressively over a few years. Again, it is part of the role of DECC and the organisations supporting them to make sure that they are able to understand what is really happening in the market and make sure that they are tuning the procurement to meet that.

Q40 Dr Whitehead: Do you think that in terms of procurement, you have perhaps gamed the market in terms of, for example, the classification of refurbished coal plants at EDF? Do you think

that it really was the intention of the capacity auction to bring forward a whole lot of refurbished coal plants, and to put them on to the system perhaps into the early 2020s, or have you been rather smart in getting in there and making sure that the first auction secures that?

Paul Spence: I do not believe that we have gamed the system. What I do believe is that we have a mechanism that is designed to help a transition and to make sure that we maintain security of supply and an adequate supply margin over a period where we are going through a transition from higher carbon to lower carbon. If the auction process reveals that for—

Dr Whitehead: Forgive me, doesn't that go from higher carbon to higher carbon?

Paul Spence: No. Sorry, if I may, if the auction process reveals the cheapest way for consumers for that to happen is for coal to play a role for a defined period until new low carbon plant comes on stream, whether that is wind or whether that is nuclear—with the coal plant also paying the price of carbon that is being revealed by the progressive carbon floor price—isn't that a better outcome than prematurely closing those plants and building new plant, which will potentially still be carbon-emitting plant and will be around for a very long time?

Q41 Dr Whitehead: I do not know whether you in particular, Mr Spence, or the panel in general, has any views about the role of interconnectors developing within the capacity markets and the extent to which, arguably, within the logical framework we have just been describing, interconnectors appear to have fallen outside that? Indeed, had they been in the T-4 auction some of the transition that you have mentioned might have been more speedily effected. Is that a reasonable view or do you think there are ways in which that could be retrieved?

Paul Spence: I think interconnectors clearly are an important part of the system and it clearly helps if we can find a way to have more interconnection between the UK and particularly continental markets. We need to find a way to make sure that when we need that energy it is not just an interconnection but it is done with a confidence that there are electrons that will flow when we need them. Getting that arrangement right is something that we are involved with, the industry and DECC, in making sure that that is designed right. It is not a trivial consultation to respond to, to say, "How can you be confident that both the wire is there but also the capacity to produce?"

Dr Skorupska: If I may comment, I do not have a particularly strong view about the interconnectors, but I think the rules of the capacity market auction should make their ability to take part clear, plus other future technologies that are not yet evident, with the T-4 constraint. My concerns are that the goals are the wrong ones, rather than that they will not be met, as we saw with the amount of capacity that was offered up. Unlike the CfDs, they are not really addressing all of the trilemma. I have a very strong concern because from early doors, renewable energy could not take part in the capacity market if they were the beneficiary of any other form of subsidy, which is understood. However, this is locking in a carbon trajectory for some time. If you read the state aid guidelines—which DECC are at pains to point out when it is about describing how renewable energy should be treated—capacity markets should be attempting to build that market from as low a carbon source as possible. I sit in some presentations where we hear, "We are so pleased that we have this diversity of different technologies playing a role in the capacity market, in the bids and what has been offered for prequalification" and yet they are championing the fact that we are still going to be running oil and diesel plants. Most capacity market participation of the plants will be at part-load or at lowest capacity, at the lowest

efficiency of that plant. Therefore, in a way, we are driving a market through CfDs to introduce renewable energy and then securing the capacity market mechanism, which locks in a high carbon future. That is my particular concern about this whole process.

Leonie Green: I would agree with that as well. We have not had the bandwidth to look at this, but I have been conscious that this capacity market seems to be getting ever bigger and attracting ever more resources. I think your point about the interconnectors is important because it comes back to the low carbon point. The capacity mechanism seems to be squarely focused on security of supply and, as Nina said, where is low carbon in that? This is all coming out of the LCF. It is also unclear how the capacity mechanism is going to impact on the wholesale price. Certainly the experience internationally seems to be that it lowers it. That means, obviously, for renewables, that you need higher support, and I think that interplay has not quite been worked out.

My query would be if it was over-engineered and, again, I would come back to my concern about engineering variable renewables together in an intelligent way because the No. 1 lesson from the German Energiewende was to engineer solar and wind together so that you have the steadier annual profile. What that means then is you need less flexibility, which is very important to incentivise, I recognise that, but then you need less extremes over the year and that has implications for cost. I am worried that we have not had the bandwidth—we have all been so involved on CfDs—to engage with this. If we had had that capacity, it may be that we could have come up with some intelligent ways to involve renewables in those sorts of solutions.

Q42 Mr Lilley: There seem to be two kinds of spare capacity you need. One you need in any system, in case a power station has a fire or a fault is found, so an existing power station has to close down and you have to bring additional capacity on stream. The other kind of spare capacity you need is to meet minute-by-minute, hour-by-hour fluctuations in demand, particularly to balance the variations in wind and solar. Are you confident that the system is going to provide the right amount of different types of balancing capacity, and am I correct that you do need, ideally, different types of capacity to meet those two different requirements?

Leonie Green: I feel very confident. You can see on the continent systems balancing far larger quantities of variable renewables and doing it very successfully. There is six times the amount of solar in Germany. I think the issue has become that that has lowered wholesale prices so much there is an issue for other generators. You need to be rewarding flexibility in the market; that is important.

Technically, can you do it? Yes. That is not a problem. The International Energy Agency recently put out a report specifically looking at the incorporation of variable renewables into electricity systems, and they seem very clear that, at around 30%, that should not present any problems and it should not entail significant risk. In terms of forward predictability, the forecasting for variable renewables is very good and it is getting ever better. It is particularly good for solar, as well, and that is why we tend to attract higher PPAs, because solar generates when power has value and it is a bit more predictable. So, no, I do not think there should be a problem. If you look internationally, it is very clear that a lot of countries are managing far larger quantities of renewables in the system.

Q43 Mr Lilley: Various power engineers have approached me and said that there are problems. For example, in Ireland, which is the most similar to us in some ways, they are using gas generators

to meet fluctuations in demand which were essentially designed for continuous supply rather than for variations in supply. The ones, I am told—I am not an expert in this area—that would be ideally designed to meet variations in supply are essentially jet engines for aircraft translated into producing power, whereas the ones that provide continuous power are different and are likely to have much shorter lives if they are used for balancing purposes. Is there any truth in this, and is this recognised in the capacity system?

Paul Spence: There is truth in what you say. I would not minimise the challenges of making sure that we have a coherent system. What that requires is a system operator who can look across a system and understand the mix of the different technologies on the grid and, as you say, make sure that we have both the longer-cycle and the shorter-cycle response available. As I look at some of the bids into the capacity auction in the first round, we do see some plant that is bidding from the world of old—what was baseload plant—and is now being used in the way you describe. But we also see some of the other technologies, some of the open-cycle technologies, bidding in precisely to do that. There is a mix. What we will need to do is continue to have that mix of the different technologies.

If I look at the lesson of the continent, interconnection plays a role. It certainly plays an important role, positive and negative, in Germany, where they have challenges within their system because their grid is not as well connected as it could be north to south. Making sure we have a robust grid, making sure we have the right flexibility in the plant, is all part of that future system. There is reassurance that there is an understanding of that in Government and in the industry—that that is what needed. We are evolving our grid mix and we are evolving our technologies.

Q44 Mr Lilley: I would have thought the system operator would say, “We need so much short-term balancing capacity and we need so much baseload spare capacity”, but I looked through all the auction regulations and I could not see them asking for different quantities of different type.

Paul Spence: Some of that is because, in terms of the actual electrons that appear, it is very difficult to know where they have come from. Some of that can be provided from a plant that is being used for one purpose and maybe is running at, for example, 90% and then you turn it up, very short-term, to run at 100%. That is less demanding on that plant than starting it from cold and cranking it up at very short notice. It is a more complex mechanism. You can say, “I want to buy some of this colour electricity or some of this colour electricity”.

Dr Skorupska: If I may add, as an ex-power station manager of a gas-fired power plant—one that you might be familiar with, that recently had a small fire in it, at Didcot—gas-fired power stations built in the late 1990s were of course built to be baseload but the technologies have moved on significantly, as have control systems. If you can recall when coal-fired power stations were built back in the 1960s, everybody said these were baseload, but Didcot A was double-shifting, coming on in the morning and going off at night, and it was running at the right capability to deliver exactly what the system needed. Short-term balancing happens in the day-to-day market. What you are possibly looking at is that the capacity market does not contract that. That is what the day-to-day activity of the grid business does. They look at the bid-offer ladders of the different power stations, just like the wind plant will do, because their control systems are so much more sophisticated now that they can ease back and push up as is needed. The capacity market is there to ensure and address the fact that we have had very little investment in new build plant for the last two decades, and that is what the market has driven it to. I have run an oil plant, I have run a coal plant, I have run a gas-fired plant, I have run a nuclear power plant and managed renewable

energy: the technology is there and the costs are coming down with deployment. I assure you, the plant can do it. Equivalent operating hours of gas-fired power plant used to be exorbitant but now they are not so.

Q45 Mr Lilley: So the mix does not matter?

Dr Skorupska: I think you do need a diverse mix because, as you have seen—sorry, my dear colleagues here—some boiler failures have happened in the nuclear plant. We have seen issues that have happened as power plants go through their bathtub curve: initial problems commissioning, nice steady state of knowing how to operate and then, as it comes towards the end of life, different things start to fail. We need that diversity of generation to be able to absorb all of that kind of technology.

Chair: That is very helpful. Albert?

Q46 Albert Owen: My colleague John Robertson asked a question earlier on with regard to winners and losers in the EMR and the panel was a little too coy to respond to that directly. However, the indications I am getting from the responses is that there are sectors that feel that they are being crowded out, and those are the small and medium enterprises. Therefore that leads me to conclude that the winners are the big players in the market. I am specifically interested in the impact that EMR will have on consumers and the customers. What is your view on that? Do you feel that they are going to pay, as the Government suggests, a little bit more while this investment is coming through? You have just indicated that costs are coming down, so how will that be passed on? What will be the impact on the consumer?

Leonie Green: From solar's perspective, we were on a very nice ambitious trajectory to get off subsidy, and from the consumer perspective it is a real shame for Government not to be getting behind that and making it happen as quickly as possible. For consumers as well, in solar, it is such an open access, empowering technology, it means that everyone has the choice between self-supply or buying power off the grid. I think by weakening the industry, as well, that there is a danger of the interplay with other technologies. Wind has stepped up now, wanting to get off parity, because of what has happened in the solar. There is a kind of useful tension for consumers, a competitive tension—

Q47 Albert Owen: “Useful tension” is a nice term, but what does that mean in pounds, shillings and pence to households?

Leonie Green: The problem is if you hold back solar, you are not providing competitive pasture for other technologies as well. That is in consumers' interests. If you unleash the power of solar, everyone else has to race to catch up. We have just done a levelised cost of energy analysis showing that unlike gas, we will cross the wholesale price of electricity. The learning curve on solar has a lot further to go. This is why banks like UBS are saying this is going to be an absolute game-changer in energy. To sideline solar, from a consumer perspective, I think is a terrible shame. I also think that to weaken the diversity of actors—SMEs, new entrants—is weakening the competitive dynamics.

Q48 Albert Owen: So to answer my question, are you saying that if we continue in the way that you believe we are moving then the customer will lose out?

Leonie Green: The customer will pay more.

Q49 Albert Owen: The impact will be higher costs for the consumer.

Leonie Green: Yes, of course. Yes.

Albert Owen: Contrary to that?

Danielle Lane: I am not quite sure of how those calculations are done because obviously I have not seen the analysis, but what we have to appreciate is that a budget was set under the Levy Control Framework, and that will be the impact of the renewables sector on consumer bills up to 2020, unless anything further is done.

The reason for that is the renewables targets that we have for 2020, and the big question that we also need to ask is: are we going to meet that? I think the reason, in part, for things like offshore wind becoming such a big part of the sector is that we have higher load factors and we can deploy at scale. We are making a big contribution towards meeting our renewables obligation as a country. While it is important that there are lots of other technologies and there is diversity, we should not lose sight of why we are doing this and, in large part, it is because we have those obligations to meet.

Q50 Albert Owen: So when is the consumer going to feel the impact? If the EMR runs its course, as the Government suggests, when are we going to start seeing bills fall?

Danielle Lane: I do not think that the whole of the EMR part, the Levy Control Framework, was about directly falling bills. One has to appreciate that the level of investment that is needed is going to cost the consumer. I think the analysis—

Q51 Albert Owen: We all want a framework that is going to encourage investments.

Danielle Lane: Yes.

Q52 Albert Owen: I am asking this specific question because there is debate about it: are domestic consumers and business going to be paying more until a certain period? Is it going to level off and drop? Is that your analysis?

Danielle Lane: The analysis that DECC has done for this is that you pay less under the EMR framework than you would have done continuing under the RO.

Q53 Albert Owen: Do you agree with that?

Danielle Lane: I am sorry, do I agree with that?

Albert Owen: Do you agree with that? We will get DECC in on these issues but I really want your opinion.

Danielle Lane: Yes, because the CfD is a vehicle that gives you more certainty as a generator. Once you have it, you can get investors in with greater confidence than you could under the RO.

Paul Spence: If I may? If you ask consumers, first of all they want to be confident that the lights go on when they want the lights to go on. A big chunk of what EMR is about is making sure that we get the investment that Nina said has not been happening at the scale that we need it. My company has been investing about £1 billion a year for the last three years in existing and new generation. We have well-publicised plans for very big investments. That investment does need a return. Under the CfD, you have a structure that says that the consumers will only start paying for the power we are producing when we start producing that power, so until then it has absolutely no effect on bills. It does have an effect on bills at the point where there is a benefit in terms of electricity.

Is it going to reduce bills? As Danielle said, all of the modelling from DECC says this is the lowest cost way of achieving the balance of the three objectives that we need to achieve, which is to make sure that we have secure, low carbon and affordable power. It is there as part of that balance trilemma.

Dr Skorupska: It is a very interesting question that you are asking and I would like to broaden it a little bit. You are asking about affecting bills for people and for industry but again, electricity, which the Levy Control Framework is specifically addressing, is only a proportion of the full energy bill that consumers face. I think with the energy efficiency programmes—which must happen in terms of doing that to give you the lower-term reduced demand—in part with renewable energy deployment under this mechanism for electricity, we will start to see those energy bills come down. The reason why I say it with a bit more confidence than just thinking about the same-old, same-old energy system is that people will have a choice to install renewable energy in their own homes and in those industries and—I know this is a hackneyed phrase—we are changing them from being a “consumer” to being a “prosumer”. You are beginning to insulate them from the volatility of energy prices in the future. What we need are some clear, stable policies—line of sight beyond 2020—and then we can say with a bit more certainty, “Yes, the energy bills will come down”. We do not know what is going to happen post-2020 at this moment in time.

Q54 Albert Owen: I am conscious of time so I will try and condense what I wanted to ask. With regards to the uncertainty around the wholesale prices, do you think the customer, if we lock into these contracts, is going to get a good deal in the future? We have seen petrol prices come down: a year ago we were talking about record levels and now we are talking about record low levels. Is something similar going to happen in the energy market, and is the consumer going to lose out because we are locking into long-term contracts to get that stability? I am specifically representing people, as we all are here, who are concerned about their month-to-month bill, not the next 30 years. Many of them feel that they are being ripped off. That has been the debate over the last 12 to 18 months, and what I am saying is, with the uncertainty of prices now, maybe wholesale prices are going to come down but we are locking ourselves into this long-term to get the stability and to get it to the low carbon place. Are the consumers getting good value for money?

Paul Spence: If I may, I will try to give the first answer to that, which is that I think you have heard all of us talk about the right answer being a mix. It is a mix that includes some of the

renewable technologies that have higher capital costs and lower operating costs, and for those ones, for people to invest—for companies like ours to invest—you need the confidence and stability. However, we will still have gas and maybe some coal on the system for a good time into the future, and if international prices do come down, in that proportion of the electricity system the costs will then come down as well. I have worked longer than I care to own up to in the energy industry, and I have lived through phases where people have told me that oil prices around the world are guaranteed to stay low or guaranteed to stay high, the reality is that they are going to change in future. Having a mix is the answer to that.

Q55 Albert Owen: Okay. Since you are in full mode there, do you think excess profits should be clawed back if the prices go down?

Paul Spence: The Contract for Difference that we have agreed for Hinkley Point is a very long-term contract and it does include arrangements that help benefit the consumer. If construction is less expensive than we project over an eight to 10-year construction period, and if, as the investors, we make a higher than expected level of equity return, again there are arrangements to give that money back to consumers. That was something that we saw as necessary—and Government saw as necessary—as part of our contract, it was something that Europe saw as a good thing in that contract and it is part of that mechanism to help protect the customers that you are talking about.

Q56 Albert Owen: Thank you. Does anybody else have a comment?

Chair: Albert, I am sorry to interrupt. I think, Nina, you have to go to a House of Lords Committee, do you?

Dr Skorupska: I do, yes.

Chair: Feel free to step out if you want to.

Dr Skorupska: If I could just add a little bit on this one. Thank you very much for that.

Albert Owen: This is more important than the House of Lords.

Dr Skorupska: That is energy resilience I have to go and talk about. The conversation and the rhetoric that is going around the future is that the best way to get value for money for consumers is to have the market deciding and having something that is known as a technology-neutral way of delivering it. There is a semblance of a market, but all the decisions that the Government are making in terms of allocating pots and aligning different technologies in different areas are, in my mind, still not transparent enough and giving you true value for money. For instance, I represent members who do biomass through to deep geothermal, and we need the money to help them get moving, but why are we not also taking advantage of the more value-added technologies that we have today? This includes solar, as Leonie has been pointing out, but also actually pushing coal out in the market earlier and still getting a good price. My other view is: how do you stack up and compare? My colleague over here is the beneficiary of a future CfD that is a 35-year contract at £92.50; the second unit might be £89.50 if it comes on stream. If you compared that with a 15-year period, coming on stream at that point and taking that same money, that would be equivalent to about £142.50. Many of the other renewable energy technologies are far cheaper than that. That is the worry about this transparency.

Q57 Albert Owen: But you do support nuclear as part of the mix?

Dr Skorupska: I believe there is an answer and a need for a balanced view. It is just about how you make those decisions and the transparency behind it.

If that is okay, I will now take my leave.

Chair: Sure. Thank you very much for coming in.

Dr Skorupska: Thank you.

Q58 Albert Owen: Before I come back to Mr Spence specifically on Hinkley Point, does anybody else want to comment on the value for money?

Leonie Green: Clearly, from our point of view, if you are awarding very big contracts and a very large share of the budget to more expensive technologies, you are costing more.

Q59 Albert Owen: Is it that simple, though, because over a period the costs will be levelled out and—

Leonie Green: No, I disagree. No, I think it is that simple. Most of the FIDeR projects are more expensive than solar or nuclear. Gosh, if we had had a 35-year life—or even a 25-year, which is the guaranteed life for solar—our strike price would have been way below. It is very—

Q60 Albert Owen: Could it produce 24/7 energy?

Leonie Green: No, no, but again this comes down to the issue that Peter Lilley was raising about intelligent engineering—

Albert Owen: I have to say I support both.

Leonie Green: —and the other issue for us in solar is full storage. There is a 50 billion global market now in storage and that is making good progress. Again, that will be an absolutely—

Q61 Albert Owen: That is interesting, the lack of storage. Final question, how do you respond to calls for the National Audit Office to investigate the package that has been agreed for Hinkley Point?

Paul Spence: I think, as I understand it, the National Audit Office is already investigating the Hinkley Point arrangements. They had already reported on the other FID contracts and—

Albert Owen: So how are you responding? Are you providing information to them?

Paul Spence: We are giving them the same access that we have given to the Government and to the European Commission in terms of allowing them to look at the underlying models. They have interviewed us to understand the process we have been through over the course of the last 10 years since we have developed the project at Hinkley Point, so I understand that is ongoing. We welcome the scrutiny that comes from it and we are very hopeful that where there are lessons to learn, as there always are, those lessons will be learnt for future projects. Whether those are nuclear projects, onshore/offshore wind or solar, there are lessons that we will all need to learn.

Q62 Albert Owen: You think the customer will get value for money over that period?

Paul Spence: I believe so, yes. I know 35 years is a long time, but we are talking about a nuclear station that is designed to operate for 60 years. It will start operation mid-2020s and will therefore be running until very late in this century. This CfD covers a relatively small proportion of the life of that station.

Albert Owen: Thank you. I am finished.

Q63 Graham Stringer: My apologies for missing the first part of this session. What I have heard are calls for greater clarity, in a number of areas, from DECC. Can you say specifically the areas you would like greater clarity in and prioritise those areas?

Leonie Green: I think, from our point of view, evidence. We have just felt very, very frustrated at the quality of evidence that has been going into this, certainly for solar, in terms of costs. For example, under the EMR modelling, in the review that they got consultants to do, solar was not even included in that, which seemed extraordinary to us given how dynamic it is in costing. Also there seems to be emphasis on some technologies from an industrial policy perspective, yet the industrial policy benefits of solar are colossal. Again, it is about not having the evidence on which to make these decisions and we would really like that evidence to be up-to-date. From our perspective, to be squashed at just 4 gigawatts on the basis of modelling undertaken two years ago does not make any sense. I know that is probably not quite where you were coming from, but in terms of going forward on clarity, how solar is going to fare under the CfDs is very unknown.

Graham Stringer: It is interesting nonetheless.

Leonie Green: We do not know how many people are going to bid. We do know that very good companies are not bidding. We do not know how some are going to fare, let alone whether they are bidding. I think to have that kind of information sooner and to get clarity on how the CfD process is working would be very helpful. I am quite concerned about commissioning consultants to report back in a year's time. To get clarity on that is pretty important and to make adjustments then that might help.

Graham Stringer: Anybody else?

Danielle Lane: I think we would have liked to have seen a commitment to regular auction rounds. At the moment we know there will be one happening this year, there may be one happening next year but after that it is unclear. Also—and some of this is not necessarily for the

Department to address—having some idea of what the future might hold, not necessarily in terms of the budget but certainly in terms of the appetite for more renewables on the system post-2020.

Paul Spence: If I can just take Danielle’s point about a view of the system beyond 2020. For us, the mix of technologies on the energy system, the rules around how those technologies compete and how that shows up in the Levy Control Framework or the mechanism that is used to control the amount, that would be helpful into the 2020s.

In terms of other information, we expect to learn a lot from the capacity auction and from the CfD auction this time around. We are expecting Government to learn a lot. It will tell us a lot about what can be successful and what cannot. That is the reality of the market: you learn as the market operates how much appetite there is and you learn what can be successful and what cannot. That is the natural passage of time. It is difficult to see how DECC can accelerate that too much.

Q64 Graham Stringer: The usual criticism of this kind of process is that even with perfect information the Government cannot pick winners, which is what it is trying to do. Do you think that is a fair criticism? That actually, however good the information is, the Government is not going to get it right in the way that the market will do eventually?

Paul Spence: What I see is the Government not picking winners, but putting in place a framework that lets competitive behaviour progressively be the route to making those choices. At the moment they are picking the categories, so that is, in a way, picking winners. Then you have specific cases like the nuclear project where it was not possible to run a competitive process. The reality is that it has been the case in the energy market, for as long as I have been part of it, that the Government is involved in energy. At the moment, the positive is that we do see industrial policy. The fact that there is an office for renewable energy deployment, the fact that there is an office for nuclear development, and that they are thinking not just about the projects but about the supply chain and making sure that we get skills and jobs and other benefits for the UK, is not picking winners; it is getting the benefit for the country out of the projects that do go ahead.

Leonie Green: From our perspective they are picking winners—what they perceive perhaps as winners—and the frustration for us is we are not asking for any special treatment in solar, what we want is just a little bit more of a level playing field. That is what we are asking for. We feel that is being held back.

We joke in the solar industry about kicking winners rather than picking winners, because there does come a point when you have to recognise that a technology is doing something extraordinary. As I said, when you have even the International Energy Agency telling you that solar is going to dominate world energy supply by the middle of the century, there comes a point where you have to say, “Well, actually we need to strengthen our position in what is going to be a colossal global market”. Strategically, you do need to be a bit sensible about when you are on to a winning technology. From our perspective there is real dismay in the industry that it has performed the way that it has, that it has the outlook that it has, and to find ourselves going into a bit of a survival mode, especially because the Government has not fixed the rooftop market so the market has nowhere to go. We are very concerned about that.

Q65 Graham Stringer: Thank you. A similar question really, what specific commitments do investors and generators require from DECC up to 2020 and beyond? You talk about transparency; what commitments would you require?

Danielle Lane: I think the EMR process has put in place a framework that should get us to 2020. As I said earlier, if we could have a commitment to regular auctions, I think that would be helpful. We are in a place where you have very clear objectives. We have a framework that is hopefully going to work over the course of the next couple of months, and we should see delivery under that framework. I recognise that a lot of challenges have been raised through this process but, that said, there has been a lot of hard work from both Government and industry to make this work. I think it can be achieved, so I am not sure there are any big things that need to be committed to aside from making sure that the current frameworks we have just been working so hard to put in are effectively delivered.

Paul Spence: I will follow on that and say that we saw at the start of the EMR process, and then we saw at the time of the Energy Act, an implementation timeline from DECC about the things that they were going to put in place and the dates when they were going to do that. They have largely been able to stick to that.

Looking forward over the next phase, saying what their timetable is and giving us the sense that they can continue to stick to that will be very helpful. That will be turning what has been a transition into a business-as-usual. The timetable for the capacity auctions; the learning process for the next auctions; the timetable for the CfD allocation competitions—again, showing that, laying out that timetable—will be helpful. The commitment that we really want is a commitment to push ahead with the final bits of a framework that has taken a long time to develop and is looking very good for the investment we need.

Leonie Green: In terms of transparency, the issue for us is accountability, I suppose, and decision making in relation to value for money. That is something we do not understand. We were told that we were running away with the budget so it was taking, on DECC's own figures, 1.3% of the REA budget last year. It is very hard to understand from the transparency perspective the basis on which some of these decisions have been made. Again, this comes back to evidence. People get nervous when decisions seem to be being made in quite a random way without a grounding in evidence.

Q66 Graham Stringer: Looking at it the other way around, in five or 10 years' time how will we know that the electricity market reform has been a success? How should the capacity market contracts for difference be monitored? What measurements should the Government be making now so that we can get the Secretary of State in here in five, 10 years' time, and say, "That was fantastic" or, "You've wasted a whole wedge of public money"?

Danielle Lane: The biggest risk for the CfDs at the moment is whether or not those that are won in the first allocation, and maybe even the second allocation, round are won at prices that projects can actually build at. It was one of the big failings of the NUFO auctions from many years ago that a good proportion of the projects that won contracts there did not deliver. The biggest success will be if all the CfD projects are actually built on time and on budget and that we have operating capacity.

Paul Spence: Has investment happened; have the projects followed through into delivery; in the meantime, has the capacity process made sure that we have maintained the supply margin that we need to maintain above peak demand; and ultimately have the lights stayed on through the period? These are going to be the questions, I imagine, that the Committee will be asking the Secretary of State.

Graham Stringer: Thank you.

Chair: Thank you very much. I am afraid we have run badly over time, but it has been a very interesting and useful session for us so I am grateful to you for coming in.

Examination of Witnesses

Witnesses: **Simon Moore**, Infrastructure Policy Manager, Citizens Advice, **Professor David Newbery**, University of Cambridge, and **Andrew Buglass**, Managing Director, Head of Energy, Royal Bank of Scotland and Co-Chair of Low Carbon Finance Group, gave evidence.

Q67 Chair: Hello. Apologies for keeping you waiting and thank you for your patience; the rather discursive nature of my colleagues' questions meant we overran a bit. Anyway, you can see there is a lot of interest in this. I wonder if I could start with a general question similar to how we started the last session. What do you think of the speed and the quality of EMR implementation so far?

Andrew Buglass: Perhaps I will start with that one. Having looked back at the four years we have been doing this, it has clearly been a very lengthy and detailed process. I would like to say that I think DECC and the other entities involved in the process have done overall a very good job. It has been discursive; it has been consultative. There have clearly been areas where various bits of the industry have not necessarily agreed with the direction of travel on certain points and DECC has in most cases taken the time and effort to listen to that.

I represent here the Low Carbon Finance Group, which is essentially a grouping of debt and equity investors, so trying to look across the range of the independent developers of projects. We recognise that great progress has been made and it is, as the panellists in the previous session noted on a number of occasions, a very, very complex set of legislative frameworks.

But ultimately now we are at the time where we need to start delivering it. Regardless of individual perspectives at different companies and among different investors, we have a reasonably clear but very extensive set of arrangements, and now the challenge for everyone in the industry is to go about delivering that. This will take some time for the early projects. It is unfamiliar and these things always take a little bit longer as people gain familiarity. But I think the process, while long, has been broadly a very useful one and a very open consultation process.

Simon Moore: As has been said, it is clearly a very big and very complicated package of interventions contained within EMR. Given that, it is not particularly clear that there is an optimal timetable over which that can take place. What we have seen, as Andrew pointed out, is that there has been a lot of consultation. There have been an overwhelming number of documents published and consultations issued. But over the course of that period we have also seen evolving positions on different parts of the programme. Opinions have changed on, for instance, whether a capacity market is something that we want as part of this package or not. It was not there at

the beginning, but it has come in by the end. It appears that some of the issues that did not appear to be core to the thinking that led to EMR have been somewhat left to the side—that was raised in the first session as well,.

We have seen it with the treatment of demand-side response and interconnection in the capacity market. I would also say we have seen it with things like the way CCS has broadly been left outside the entire EMR package. These examples are things that were not seen as being inherently the focus of EMR so have been left behind. That potentially leads to a concern for the bill payer if these are things that could offer a more cost-effective solution to some of the problems that EMR is attempting to tackle but are not being incorporated into it.

Professor Newbery: Perhaps I can speak as an academic. I should say that although I am on the Panel of Technical Experts, I am speaking here purely in my own personal capacity. In the past, I have published quite critical articles on the energy policy we have followed over the last decade. I would make a distinction between the degree to which the choices that were left open have already been predetermined by previous decisions—in other words the political framework within which this operated, for which one could make many criticisms—and the delivery of what was then written down in the Bill, with some qualifications that have already been mentioned, was probably as good as could be expected. That does not mean to say I think the end result was brilliant. It is just that, given what was politically chosen to be done, it was probably as good as could be done.

Q68 Chair: Going forward, are any of you concerned that the timetable may slip a bit?

Professor Newbery: Let me just say, more haste, less speed. The enthusiasm for securing such a large quantity of capacity four years ahead of when it is needed is, if anything, overhasty. I would have waited to see how we get through this winter, what was the demand-side response and how we are going to deal with the interconnectors. That information would have been very useful before we decided how much we procured. I think in a sense on that front we have been rather too quick with it.

Andrew Buglass: I was perhaps going to come at it from a completely different perspective. If you look at the CfDs, a lot of time during the development process DECC were asking many investors what they felt would be the 0-60—that is, how quickly would you be at full delivery speed once the package is finally delivered through legislation? I think the reality is, given the complexity and the fact that we have not yet seen a project that has been taken all the way through, this transitional phase is critical.

We understand pretty well the theoretical bases for the various pieces of legislation. Once we see those broken down at the individual project level into contract, it will become clear how quickly it can become successful. We know the Government side of the contract arrangements, but we do not yet know what the power purchase agreement providers, the operations and maintenance providers and, indeed, the investors themselves are going to be putting into their own commercial negotiations.

Certainly, if I wear my lender hat for a moment, that is when we will be able to assess the whole package in the context of a real-life project and at that stage we will almost certainly surface a few issues that we perhaps did not expect. That will take a little bit of time to be overcome so I would expect the early projects, at least those that are looking for external financing, to take a

little bit longer than would ordinarily be expected. That learning curve is a steep one. Once we are through that, we should be on to deployment at a more normal rate.

I think that early stage CfDs—the same is true logically for the capacity market projects as well—may take just a little bit longer in commercial negotiations before we see widespread delivery. But that is a feature we had with the Renewables Obligation. It is a feature we had with the Non-Fossil Fuel Obligation. Any new regulatory regime takes a little bit of time for people to become familiar with it.

Q69 Chair: Do any of you have concerns about the roles of the delivery body or the counterparty body?

Andrew Buglass: I will attempt to answer that. Thus far, I think, the role of both those entities has been very positive, very proactive. They have a huge job to do and they are part-way through it, so it is perhaps a little early to say. But I know that a number of people, for example, have highlighted nervousness around whether there was a potential conflict of interest between National Grid's wider role and its role under the mechanism. I think they have been acting, as far as we have seen, with great professionalism and bringing their expertise to the market in a very helpful way. I do not think at this stage there are, among the investor community, huge concerns on that, but clearly we are part-way through the process and much remains to be done.

Simon Moore: David may be able to speak more to this, but I know that the Panel of Technical Experts raised some questions about how National Grid had come to certain conclusions when it was preparing its report on how much capacity DECC should procure. My concern is that the issues that were raised were not well responded to, either by DECC or by National Grid, in a particularly public or clear fashion. The report was published and then more or less seemed to be buried among a host of other documents. From our point of view, it would have been good to see more responsiveness, given that we have this body to apply some scrutiny to the decisions that Grid is making, to bring it into a position where it should respond to those criticisms if they are raised.

Q70 Chair: The fact remains, does it not, that National Grid has a financial incentive to see more capacity being built?

Professor Newbery: Clearly if the lights were to go out they would bear some of the responsibility and since they are not paying for the capacity, why would they not make sure that this problem does not arise?

Q71 Chair: Given that there are two ways of stopping the lights going out—one is to build more capacity and another might be to manage the demand side better—National Grid have an interest in making sure the first solution is prioritised and not the second, does it not?

Professor Newbery: I could not possibly comment on that.

Q72 Chair: It is obvious, clearly, that they make more money out of solution A and less money out of solution B, so that looks to me like a pretty strong incentive to do one thing that is not necessarily in the national interest.

Professor Newbery: They do have incentives to procure demand side in order to get through the next few tight winters, and I hope we will learn more about that as a result. Obviously if you are a large organisation it is much easier to deal with a small number of really large suppliers of what you want than a very large number of smaller entities. But that is going to be the way of the future. We will have to learn how to deal with that.

Q73 Chair: What are the incentives that encourage them to do more on the demand side?

Professor Newbery: They have a regulatory regime that provides them with incentives to drive down the costs of managing the system. If that works well, and it seems to be at the forefront of regulatory regimes around the world, then it should provide more incentives than you will see elsewhere.

Q74 Chair: But they also get a guaranteed return on capital expenditure, so if they have more capacity, which means more transmission lines—

Professor Newbery: They do not get a guaranteed return from capital; they get a revenue. If they can keep the costs at an efficient level, they will get a reasonable return, but if they do not they will not.

Q75 Chair: Okay, not a guaranteed return, but they do get a return that is sufficiently attractive for them to do it, and it is regulated. Nevertheless, their profits will go up faster if more transmission lines are built than if they are not.

Professor Newbery: The Ofgem Network Innovation Competitions and the Low Carbon Network Fund are inviting companies to propose solutions to dealing with low carbon that are newer, lower cost and innovative, and those competitions have been remarkably successful. Once the new techniques have been demonstrated, they will be the benchmark requirements the companies are judged against, so if they do not introduce these new technologies they will not get as much return as they would like to.

Q76 Sir Robert Smith: To what extent do you feel the early CfDs under the enabling regime have helped encourage investment or hindered investment?

Simon Moore: I do not have a particular take on how much they have helped or hindered investment. I think from a consumer perspective there are a lot of concerns about how they have been proceeded with in a very opaque fashion. Why those particular projects were chosen and why the particular balance of technologies that those projects were chosen among came about—both of those seem to be pretty unclear.

We have also seen the package of projects that were enabled through the FID process absorb a very large chunk of the overall Levy Control Framework budget that leaves as a result much less for technologies whose prices we are hoping to bring down through the competitive processes that have been brought into the CfD allocation system. I think that both those things in combination raise a lot of questions about how the FID programme overall has been operated.

Andrew Buglass: I am not sure I have a huge amount to add to that from the sense that clearly there have been some questions raised. Speaking with DECC during the process, it was very clear that they felt a number of these projects had, by virtue of their longer lead times, a particular need for some more transitional help, and I think that is something we see as investors generally. If you look at projects that have either particularly long and extensive development processes compared with the examples we were hearing in the previous session of very short development—solar—certainly it seemed clear that DECC was making decisions to try to support a number of those projects.

I do not know obviously, as Simon has said, on what basis the specific projects were sought. I am hoping very much that the development of those early FID enabling projects will add to the overall store of knowledge we can use in the deployment on a business as usual basis because I think they will face exactly the same sorts of issues of contract and commercial framework that I was mentioning a moment ago. I am watching with very great interest the progress of those projects because I am sure we can learn from them.

Q77 Sir Robert Smith: Do you have a view?

Professor Newbery: I do not have any special information about that process.

Q78 Sir Robert Smith: Do you have any thoughts as to the size of the pot for the Levy Control Framework and the lifetime of that or the horizon on which you can plan as investors?

Professor Newbery: There is a degree of incompatibility in that you fix the amount of money for the subsidy. If the price of gas, coal, oil and carbon were to be lower, the amount of subsidy you would need would go up and the amount of renewables you could support would go down, but the consumers would be getting cheaper electricity. It seems rather strange in a world in which you are getting cheaper power to say, “We cannot afford as much renewables as we thought we had to”.

Q79 Sir Robert Smith: From an investor point of view, do you not need to see further into the future?

Andrew Buglass: Clearly, many in industry have been saying that visibility out into 2020, insofar as we have it under the LCF, is helpful but is not enough. I had one offshore developer say to me a little while ago that 2020 is almost tomorrow already because of the lead times. We heard that again in the previous session. As we look to industrialise the build-out of the various technologies, it is increasingly challenging for companies trying to bring forward projects that need to have visibility beyond that 2020 to know where they will end up. It was very interesting

to hear a couple of the comments in the previous session about the sheer volume of developments costs involved before one can even know that one has a CfD. That is certainly consistent with comments that I have had from clients and fellow members of the Low Carbon Finance Group.

Q80 Albert Owen: In offshore wind, a number of projects have been cancelled, with statements that it was due to technology or various other issues. Do you think it is an additional problem that they do not have the longevity?

Andrew Buglass: I should not speak for that as an industry.

Q81 Albert Owen: I am not talking about one or two cases. I am talking about a number of cases and you have just highlighted the fact that the upfront costs are quite expensive and there is a huge risk. Does that need smoothing over for long-term investment in offshore wind, for example?

Andrew Buglass: If I were to put myself in the position of a project manager going to an investment committee, it is clearly difficult to argue the case—in a time where budgets are very constrained—that you should be given a development budget allocation of potentially 10s of millions of pounds when you cannot articulate either what the return would be or when you may get that return, if indeed you can. I definitely think that is hard.

On the other hand, I think under the RO a version of that has existed already in that if you were developing projects within the horizon of an RO banding period, you knew that if you constructed your project on time and you were operational you would get ROCs at a particular banding level. Beyond that, to a degree, it was the same sort of guesswork. I do not think it is dramatically different. But if we are expecting the CfD to provide support for technologies that are inherently longer in their development process—I suppose the extreme example of that is the Hinkley example we were just hearing about a few moments ago—then perhaps a degree of greater visibility post-2020 would be helpful. I note that we are to expect discussions on setting a decarbonisation level to happen in 2016. That may provide some of that context as well, but certainly from conversations I have had with developers it is something they would welcome.

Q82 Sir Robert Smith: The other challenge is how much you have to spend before you can take part in the auction. You have to judge the market and your competitors in making that investment decision.

Andrew Buglass: Absolutely, yes. There is no question that needs to be done. That is similar in other industries that perhaps do not have the same support levels. At the same time, many do not have the level of reliance on Government support through the life of the project, so I think it is an additional hurdle that we do not see in other countries. It is very important to stress is that we are, as the UK, in competition with the regulatory regimes of other countries as well because investors are looking for the most attractive, most secure place they perceive to invest their money; in many cases, not all.

Q83 Sir Robert Smith: Would you have a ranking from the investor point of view of which regimes are more or less attractive?

Andrew Buglass: That would depend on the individual developers and I would not dare to put that forward.

Q84 Sir Robert Smith: Is there not a generic view?

Andrew Buglass: What I have heard generically is that the EMR framework—because it has at its heart very simple concepts but in its delivery it is quite complex—is an area where some investors or potential investors have highlighted concerns. If they were comparing it, let us say, to a very straightforward example of a feed-in tariff in somewhere like Germany, you know what the price will be and you know you can get it as long as you do it by date X, broadly speaking. As against that I think there are other things that EMR does that other regimes do not, so it would have to be a decision and a blend made by the individual developer.

Q85 Dr Whitehead: Professor Newbery, you mentioned that in your view the capacity auctions perhaps were rather precipitate or rushed. Could you expand on that a little in terms of the planning of the capacity auctions and the way it has started to turn out?

Professor Newbery: You probably recognise that National Grid was charged to lay out what it thought would be the consequences of various choices of capacity and various possible futures. It worked in terms of a loss of load expectation, which is the standard security measure used around Europe certainly. Unfortunately, that connotation is very misleading because it suggests that when supply and demand are not matched there is a loss of load. Whereas, in fact—and this is made very clear in Ofgem's security assessment—what that means is that the system operator then has to step in and call on a variety of measures, almost all of which fall well short of disconnecting customers and causing a loss of load. They can ask generators to increase their output above their design level. They can ask for a voltage reduction that may cause the lights to go slightly less bright. They can call for emergency actions over the interconnectors. There is a whole range of actions they can take that are well short of losing power.

But the problem with the public perception is that if they do not exactly match supply and demand on their forecast four years ahead then the lights will go out. Unfortunately, I think maybe the red tops putting pressure on the Minister or concerns about how this will play in the Sunday papers encouraged the extreme end of the range of possible choices that could have been made. So, yes, we are being overcautious in this particular field.

Q86 Dr Whitehead: Is it not the case that when you say you will have capacity auctions, people who might otherwise have decided to invest in capacity will decide not to until such time as they see the result of the auction? Therefore, in a sense, having announced it you have to rush it thereafter in order to try to secure that investment?

Professor Newbery: There is again tension here. One consequence of securing too much is that the wholesale price is likely to be lower than it otherwise would have been because there will be more spare capacity and more competition between lower cost generation, and that will discourage anybody investing without a capacity payment.

On the other hand, if you go to the other extreme and say what we are trying to do is provide some assurance in light of the political risk that the next Government will completely change what it wants to do for investments—which after all have a lifetime of between 20 and 50 years—so you are not over-securing capacity, then it is your choice. You could say, “I think the market will produce adequate prices to make my investment without spare capacity payment”. But, on the other hand, if you are nervous, sceptical and deeply suspicious of what people might do in the future you might like that assurance.

Q87 Dr Whitehead: Your suggestion then is that this process may well over-procure capacity in the not-too-distant future. Is that not a function to some extent of the amount of capacity that is set out to be procured in the auction in the first place?

Professor Newbery: There will be a sequence of moments at which we can procure more on different kinds of capacity. Immediately after deciding to exclude interconnectors from the capacity auction, DECC launched an inquiry into whether they should be included. At some future date there will another auction and we will procure some demand side, some interconnectors and things like that. We might then find that because we have procured so much, there is not much space left and the price at which we could have got it will be substantially lower. Then we will say, “What a pity. It would have been a good idea to wait until we got these cheaper options on the table”.

Simon Moore: I echo a lot of those remarks. I think the situation you described when you said, “Does it create an incentive to hold back on investments until a capacity market is in place?” is a pretty accurate description of what happened as soon as the idea of having a capacity market was raised. There was essentially a momentum that led to it being more or less inevitable. In terms of the wait time, the lead time on the auctions, clearly the further in advance of the actual delivery date you carry out the auction the more susceptible to forecast error you are, and the more likely you are to be out, either high or low, in your estimate of how much capacity you will need versus how much capacity you actually end up needing. I think that does lead to a greater risk of over-procurement of that capacity.

That could potentially be reconciled by bringing some of the existing plant that is not expected to refurbish—it is not new-build plant—into the T-1 auction process rather than the T-4 auction process. DECC would probably argue that that would reduce the level of competition in the T-4 auctions, which is probably true. Whether that is a sufficient downside to outweigh the benefits you get from avoiding this forecast error, I have not seen any good analysis, but I would be interested in DECC’s reasoning behind that.

Dr Whitehead: Did you want to add anything?

Andrew Buglass: Nothing to add.

Q88 Dr Whitehead: We have gone for a relatively large announced capacity initially in the market but fairly large amounts of capacity auctioned on the basis, shall we say, of a mix of hopeful long-

term contracts and short-term contracts, depending on the nature of what is entering into the prequalification process. What would you regard as success in terms of that actual procurement in the first auction, and do you think that the amount of capacity that is being auctioned, perhaps if substantial amounts of long-term capacity are not procured in the early auctions, could be a problem later on in terms of procurement?

Professor Newbery: One measure of success is whether it will give the right signals to either remain on the wires or disconnect for the existing plant, and whether we will get cheap new investment coming forward. It will be very interesting to see what the outcome of the auction is.

Q89 Dr Whitehead: Would you like to elaborate on what that interesting outcome might look like?

Professor Newbery: One of my concerns is that, with the carbon price, a coal plant that is near the end of its life—most of it is—may find it uneconomic to remain generating until it gets a capacity payment. After all, the capacity payment is to be there for a relatively small number of hours a year, and you don't need brilliant plant to be available for a small number of hours of the year. My concern is whether people are provided with enough assurance that they will be able to reconnect when they are needed; meanwhile, they are mothballed. I haven't seen a careful analysis of that, so I don't know the answer but that would be one of my concerns—that plants that could be made available at relatively low cost but will have nevertheless quite high operating costs, carbon coal prices being what they are, they will prematurely and incorrectly decide to be scrapped.

Q90 Dr Whitehead: You have mentioned, Professor Newbery—this is a question for the whole panel—the effective separate auctioning demand-side reduction and the non-auctioning of interconnection. But, with a sort of buyer's remorse inquiry subsequently, with the possibility that interconnection may well be included in the future, presumably in an auction where most of the capacity has already been auctioned or procured one way or another anyway, are there problems in that particular approach? How might those two particular components, which I think we all agree should be in the capacity auction process, be retrieved?

Professor Newbery: It is rather difficult, once you have already decided how much you are going to procure, to change that. The Panel of Technical Experts argued that the amount that was set aside for future auctions was a decision variable that could have been used but wasn't. The evidence from the United States' capacity auctions is that the demand side is an extremely important contributor. The other thing that concerns me considerably is that we have no clue, within a factor of three, how much distributed generation is on the system, and the range is so large that at the higher end you would think that might be able to provide the entire shortfall of capacity needed. It is one of these cases where we may well find out things that it would have been very useful to know before we ran the full auction. That is why I am concerned that we rushed in and chose a large quantity of capacity right at the beginning.

Dr Whitehead: Any thoughts?

Andrew Buglass: I think interconnection and the demand side are clearly, as Professor Newbery has said, very, very important in any balanced approach to this system-wide design. One of the

things that has struck me through this process is that to a degree there is a tension, if not even perhaps a conflict, between what is happening at EU level and what is happening at the level of individual member states—including the UK—on the subject of interconnection. There is a broad commentary across the EU that it is a good thing to foster increased interconnection. Yet it seems to me, at least from a commercial perspective, that as we develop a capacity market in this country and potentially other member states across Europe, that is in a lot of ways in conflict with the free flow of interconnection across markets. By requiring the owners of interconnected generation to behave effectively in a certain way commercially it perhaps introduces less-than-perfect outcomes from an economic point of view. In extremis that might mean not as much new interconnection may get developed because it can't play in the way that interconnection traditionally does, which is to rely on volatility between two different markets: "Price high here, so I'll send my electrons there". There are a lot of technical factors as well that Mr Spence mentioned in the earlier session—you can't necessarily tell the electrons which way they are going to flow and they will just flow. Commercially speaking, it seems to me that the development of a capacity market including interconnection is quite difficult to put into a wider picture of increased interconnection across Europe that many people would feel was a good outcome.

Simon Moore: On the DSR side, the main variable seems to be one of quantity. However much under the capacity the T-4 capacity auction turns out to have been, it will be supplemented with DSR. If it turns out to have been more than sufficient there will be basically no DSR bought in the T-1 auction. If it turns out to have under-procured by whatever amount, that is the amount of DSR that will be needed. It is not a straightforward issue to work out exactly where that is going to fall, but it is at least just one variable to try to contend with. I think the interconnection question, which Andrew raised, is much more complex. The challenges, as have been described, of making interconnection work in a European market that is seeing increasing numbers of capacity rules applied across it, make structuring that very difficult. DECC is for now proposing to make interconnectors themselves rather than the generators behind them the participants in future capacity auctions. That is up for consultation at the moment. That is a largely sensible approach, but it is contingent on Europe at some point working out collectively what it wants to do about this. I am not sure what stage that process is at, but I can see it being a fairly slow-moving one.

Q91 Dr Whitehead: Does that suggest maybe that interconnectors are a particular case in the general capacity field—

Simon Moore: Yes.

Q92 Dr Whitehead: And that maybe one should look at capacity payments as opposed to capacity auctions as far as interconnector development, which indeed may not be able to work through arbitrage, is concerned?

Simon Moore: I think interconnectors are certainly a special case for a number of reasons, not least of which is that they can export as well as import. If you have a situation where large parts of Europe are simultaneously facing problems, for weather-related reasons or whatever else it happens to be, and, say, the people of France are more prepared to pay high prices than the

people of Britain, then the flow of the interconnector could be out at a time when Britain was hoping to rely on it to meet its own capacity need. That could be resolved simply by reference to price and whoever is prepared to pay the most wins. That does fall down a bit if countries—the UK or trading partners elsewhere—have rules that restrict those flows from following the prices. The EU is trying to whittle away those rules at the moment, but I don't know how far along the process it is with that.

That said, interconnectors are able and are potentially a very good source of low carbon, low cost and reliable power, and bringing in a capacity market that has the potential to undermine their business case could end up being both bad for consumers and bad for the environment goals that we are pursuing.

Professor Newbery: Perhaps I can add that this is not something that we can just decide in this country. The European Union, under the targeted electricity model, is gradually evolving a framework for handling intra-day and balancing processes involving interconnectors. These are still not fully resolved, and part of the problem is that 42 system operators get down to negotiate the grid codes. Most of them are dealing with a meshed AC network where the electrons flow according to the laws of physics. We are in the very lucky position of having DC connectors that are fully controllable. The rules that may be very appropriate for the major part of the continental interconnected system will not necessarily be perfectly designed for a controllable connection from us to that continent. That is one problem, and I hope our views are represented at the ENTSO-E meetings that discuss these grid codes. The other problem is that the auction platform that is going to allocate capacity over all these interconnectors has a price cap. The price cap is €3,000 at the moment, whereas our value of lost load is £17,000 per megawatt hour. If we really believed the value of lost load was as high as that, we could outbid anybody on the continent and make sure the electricity came to us. But if we are restricted in what we can actually bid into that auction then there is a problem. A rather important agenda item is to decide how the allocation of capacity will be done when everybody reaches the price cap at the same time. If the people on the continent stay below then we can buy it, but if everybody is at that ceiling then we need to know how it is going to be allocated.

Q93 Graham Stringer: Mr Buglass, has the Labour party's policy to freeze prices for 18 months after the general election, if the Labour party forms a Government, affected investment decisions at all?

Andrew Buglass: I am not aware of it having done so. All of the investors with whom we speak are trying all the time to form a view of possible future outcomes. Clearly we are heading toward a general election in May, and that naturally factors into the investment decisions of many. Investors with whom I have talked take a lot of comfort from the cross-party support that has been shown through the EMR process. In terms of the framework supporting, whether it be CfDs or a capacity mechanism, most of the investors—if not all of the investors to whom I have spoken—have seen that regardless of what composition one may have post-May, there is not expected to be a major shift in the policies that have been outlined under the EMR.

Q94 Graham Stringer: Thank you. Professor Newbery, in answers to the opening set of questions you implied that you had some concern about the overarching policy in this area. Was that the fact that the whole process is predicated on the price of fossil fuels going up and becoming more expensive, and if they, in fact, drop in value, then you have a whole different scenario?

Professor Newbery: That is one of the aspects. No, my main concern is that if we were serious about meeting the renewables directive targets, at least on cost, I would not have started from where we were and I would not have, in particular—at the point at which the EMR discussions and consultation were starting—locked myself into an over-generous set of ROC banding until 2017. That has restricted the freedom of manoeuvre of the contracts for difference. I would have also been quite concerned to get the least cost solution that, for the case of wind, does not mean paying everybody the same price per megawatt hour regardless of how windy a position they are in and how far away they are from demand. One could list a whole range of things that it would be nice not to have already pre-committed ourselves not to do, but we finished up where we were and had to make the best of a bad job.

Q95 Graham Stringer: Does that then add to the criticism that we were discussing with the previous panel that DECC has been picking winners, and if they are picking winners then they are probably not very good at it?

Professor Newbery: Absolutely. The whole reason for auctions is that we assume that the people who are going to build the plant have a much clearer idea of what it is going to cost—and, if the auction is competitive, they will reveal that—than a bunch of bureaucrats sitting there without out-of-date information trying to dream up the right strike price. In some cases, and Paul Spence made this very clear, you will not have a competitive market for the supply of nuclear power stations. You have to ask what the most efficient way of procuring is when the person doing the procuring knows considerably less about what he is buying than the person who is supplying it. There are a whole range of techniques that have been proposed to deal with that solution. Unfortunately, they do not seem to be the ones that have been heavily guiding the design of our approach to low carbon energy.

Q96 Graham Stringer: Right. Do you have any estimate of what this will cost the consumer?

Professor Newbery: No is the short answer, because I don't yet know what the future prices of things are and anybody who tells me they do know that is talking through their hat.

Q97 Graham Stringer: DECC regularly say that they do, don't they?

Professor Newbery: They do at least produce a range of forecasts, usually much narrower than the past range of price volatility when you look back at these. You can decide how credible you believe those are; they are a guide. I think the point I would make is that we have been lulled into a sense that the price of electricity in particular is or should be rather low, but we have been enjoying 20 or 30 years of not having to invest in the grid, in the power stations. If you go back and look at what the power was in real money 20 or 30 years ago, it was very substantially higher than it is now. We are about, even without the low carbon agenda, to have to invest in replacing and rebuilding power stations. That is going to be more expensive than the past power prices have been unless we are unbelievably lucky in technology and future fuel prices. What it is going to cost is almost certainly more than what we have got used to thinking is our justifiable right, but that is just the way the world works. We are living on the past capital that our hard-working parents put in and we are now going to have to put some of our own money in.

Q98 Graham Stringer: How should the cost of the capacity market be controlled?

Professor Newbery: That is an auction, so the only decision variable you have is how much you are going to buy. The more you buy, the more expensive it gets. It comes back to the fact that we are going to have the capacity there anyway. We would like not to have too much capacity because that would be very expensive, but that capacity has to be paid for. Whether you pay for it in a high capital cost and low running cost or a low capital cost and a high running cost is partly a question about what the technology options are. But it is going to have to be paid for.

Q99 Graham Stringer: Mr Moore, you have noted that the T-4 auction is being determined four years ahead of delivering capacity and that is going to cost consumers because of forecasting errors. How do you think the auction should be set up to minimise that risk?

Simon Moore: As I mentioned before, the one thing that you can do within the structure that we have now is take out the plant that has already been built, that already exists, that is likely to win in the auctions basically whatever price they clear—things like nuclear power stations and some recent gas power stations. If you can move those into the T-1 year auction, you are then carrying out a much bigger chunk of the auction much closer to time. You have a much better sense of how much capacity you will need, so, as Professor Newbery said, the key figure is the amount that you procure. The closer to real time you get, the better that number can be in terms of how close it is to the actual amount you need. So by moving the plant that does not need construction time, which is basically why as much of it as possible is being done at the four-year distance at the moment, the more accurately you can set the overall parameter for the auction.

Q100 Graham Stringer: Right. Thanks. That is clear. How effective is the panel of technical experts in scrutinising the analysis carried out by the National Grid in its role as EMR delivery body? Anybody.

Simon Moore: My take was that their report was very interesting, very thorough, very detailed. Again, as mentioned earlier, I didn't think that it brought about the response that I would have liked to have seen from either DECC or from National Grid in terms of responding to some of the criticisms that were raised about various aspects that went into the decision making. I would like that to be, going forward, a more formalised part of the process where PTE responds and then DECC or the grid, whoever it is appropriately—maybe both— respond to the PTE to say either, "We are taking these criticisms into account and changing this" or, "We are disregarding them for these reasons".

Q101 Graham Stringer: In the way that Government responds to Select Committee reports, in effect?

Simon Moore: Yes.

Graham Stringer: Anybody else on the Panel of Technical Experts?

Andrew Buglass: No. I have nothing further.

Professor Newbery: The only point I would make is that it was an independent panel and its report was published in full. It is there in the public domain to judge whether it did what it was supposed to do.

Graham Stringer: Thank you.

Q102 Albert Owen: I did want to go back to something that Graham asked. Professor Newbery, I listened carefully to your answer about the future price and what consumers would be paying. I understood what has happened over the past 30 years, and that prices have been relatively low because of the lack of investment and we now need investment as we move forward to low carbon. I understood all that. You do not have a crystal ball and you can't tell us exact prices, but do you think DECC's forecasting is right?

Professor Newbery: We will wait and see.

Q103 Albert Owen: No, I just want your opinion. This is an important question because we keep getting the DECC Ministers saying that by 2030 electricity will be very cheap relative to what it is going to be in the intervening years. I can remember when nuclear power stations were built in my area and North Sea gas came on, and we were told very similar things about how the metering and everything would be most expensive part of it and everything else would be very, very cheap to the consumer. We didn't see that they said "relative". So in the future, once this investment has been made, are we going to benefit from it hugely as business and domestic consumers?

Professor Newbery: In terms of forecasting, it is very interesting to look at how well commercial forecasters do. The question you might ask is: how far in advance did the shale gas revolution and its impact on gas prices in the United States impinge upon decisions in the commercial sector? The answer is they were remarkably surprised at what happened to the price of gas. We will inevitably be surprised at what happens to the prices of all sorts of things.

Anybody who has been forecasting oil over the last year, unless they have been rather lucky, if they had been speculating would probably have lost their shirt. The future is intrinsically uncertain. If we are partly supporting a range of technologies and renewables in order to find out what works, an implication of that is we will find out quite a few of them are not a good idea. It costs money to find that out, but we need to do it in order to find out what is a good idea.

Q104 Albert Owen: Previous CEOs and managing directors—I say "previous" deliberately because they have gone and their successors are taking a slightly different view—were saying to us quite bluntly three or four years ago that the consumer should expect to pay higher prices over the next couple of decades. Were they being brutally honest about that because of—

Professor Newbery: Higher prices than what?

Albert Owen: To pay for the new investments that we haven't had over the previous years that you have acknowledged. Somebody has to pay for it. It will be passed onto the consumer so it is going to cost more.

Professor Newbery: Okay, there are two parts to that. Yes, we need new investment. Yes, the investment that we need is more capital-intensive than in the past. That part of it is clear. The other question is what is the cost of the capital that you borrow to finance this investment? The analysis behind the EMR absolutely correctly said, "If we could reduce the cost of borrowing, the

cost of the capital, then over the lifetime of the equipment this will be less costly than it otherwise would be. We want to remove all of the unnecessary risks, the political risk and the risk about the market for new entrants who do not have a portfolio and captive customers, as far as possible. By the way, wouldn't the Green Investment Bank be a really useful source of access to low-cost capital? Wouldn't this be a really sensible thing to invest in?" There are a whole range of actions that could be taken to make sure that the high capital upfront cost is offset by what, at the moment, are miserably low returns on investment. The combination of those, if you put them together, might deliver rather cheap power; wind power being competitive with almost anything at low rates of interest. If that part of the story could be fitted in better, then the future consumer prices will not be as high as they otherwise would.

Q105 Albert Owen: Is that what investors are looking at?

Andrew Buglass: I was going to echo quite a lot of that because I think what we are seeing, as Professor Newbery rightly said, is a lot of investment or potential investment seeking better returns than they can get at the moment. If you look at operational onshore wind in this country, we have seen a number of listed investment funds go to the public market and be able to get a lot of investor interest to support technical that is proven, which has already been deployed and has been derisked. It has been through the planning process. It has been constructed. It now works. That is the sort of thing that I think many investors do absolutely want to be part of, particularly when that is paying them rates that are significantly in excess of what they may be able to get on an alternative investment in a different sector or a different country.

As I cast my mind back to 2010 when we started the EMR journey, it was very much a conversation about reducing the cost of capital. I think many of the interventions that DECC has made during that process have been centred on trying to provide support for things that the private sector investor either finds difficult or finds unattractive to accept as a risk. Time will tell whether it leads to a dramatically lower cost of capital or not. The one thing that we hear on a fairly consistent basis across the investors that are represented by the Low Carbon Finance Group is that high-level statements, the high-level interventions if you like, are very important, but the political underpinning of that is almost more important. Therefore, there is still a perception of nervousness among investors.

We have seen retroactive change in many other countries across Europe. Thankfully, the UK has had a very strong track record in not having done so, but I think that is definitely something that investors would say is a factor in their investment decision right now. The framework may be great, but it is only as good as the political will that is behind it to continue to support it over the long term. Coming back to some of the conversations we were having earlier about visibility post-2020, that is absolutely something that investors are highlighting as a concern. Because the theoretical framework is good, if we can see a lot of clarity that is going to endure then that gets you a lot further along the path to low cost.

Q106 Albert Owen: Mr Moore, the question was on consumers, so perhaps from a Citizens Advice point of view?

Simon Moore: I think there are three elements in there that I would like to pick up on. The first in terms of the direct costs of the EMR programme, I do not think we see those going down over the next decade and a half and maybe further into the future. In terms of the absolute quantum

of money, I think it is pretty clear through the levy control framework and other measures that it is going to be higher in the future than it is now.

The second part of that is what you are getting in return for that; ensuring that you are getting as much value for money from the amounts of money that you are spending as is possible. That is where auctioning and getting these competitive processes, more price discovery, into that side is absolutely essential.

The third element is something that is slightly outside the EMR programme but is, I think, relevant: DECC has justified a lot of this stuff by saying, “Yes, we are going to put costs up on the generation side, but in return we are going to reduce the amount that consumers consume through energy efficiency programmes of various kinds”. Making sure that those happen to the extent that was committed to is absolutely crucial in making sure that consumers are not left with a bad deal from the overall package. So far I think the fairest way to describe those programmes is mixed. I do not think they have accomplished a lot of the things that they set out to do, particularly when it comes to more vulnerable groups in society. Making sure that those programmes deliver on what they are meant to is the best way of ensuring that even the additional costs from the EMR programme are ones that are not borne too heavily by consumers and particularly by the worst off consumers.

Chair: Are there any other points from my colleagues?

Q107 Graham Stringer: One final question to Mr Buglass. Do you have a figure of what the total investment cost is for the replacement of the energy plants in the Government’s plans for renewables compared to what it would be replacing like for like?

Andrew Buglass: I am not sure that I could do anything other than refer to the DECC statistics, which, in the early stages, were talking about a total investment, but I recognise that includes the newer generation of around £80 billion over the 10-year period. I have not seen research breaking it down in a much more granular way. I think there are lots of pieces of research, but I think they are giving quite widely differing perspectives.

We receive updates from a number of independent bodies that provide price forecasting and market predictions, which, with Professor Newbery’s earlier comments, I think one takes with a grain of salt. Obviously those are driven, in many cases bottom up, from assumptions around replacement cost, but I think it is almost an unanswerable question in a sense because we do not know what we are going to replace it with. If the question was: let us take the existing plant mix and replicate it—that is, build the same number of gigawatts of coal and gas and so on—clearly we are not doing that.

I think the fact that we are in a situation where there are a number of different interventions—CfDs for low carbon, capacity market for the procurement for short and long-term capacity—we do not have a perspective on what the future generation mix looks like. I think that is one of the great complexities when talking with investors who are trying to bring forward plant that is active more on the capacity market side, because clearly the CM provides a certain level of support. Those plants are still very much reliant on capturing energy market revenues as well from actual generation. If you do not have a great deal of clarity on what the generation mix would be, it is very hard to assess where individual plants may sit in the merit order.

I think it is an extremely good question. I am afraid I do not have a good answer for it in that I think there is an enormous range of different numbers depending on what type of future market you expect to get.

Professor Newbery: The other point to make is that, of course, you can buy a fairly cheap open-cycle gas turbine and run it on distillate, so the capital costs may be low but the running costs would be incredibly high, or you can go to the other extreme and buy a nuclear power station; very expensive piece of kit but very cheap to run. It depends how many hours you are going to run it and just the capital costs is only part of the answer.

Chair: Well, thank you very much for that concluding lesson. We much appreciate your time and I apologise again for the fact that you had to wait such a long time to come on.