



Energy and Climate Change Committee

Oral evidence: [Implementation of Electricity Market Reform](#), HC 664, Tuesday 9 December 2014

Ordered by the House of Commons to be published on 9 December 2014.

Written evidence from witnesses:

- [InterGen](#)
- [E.ON](#)
- [ScottishPower](#)
- [Tempus Energy](#)

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

Questions 108-171

Witnesses: **Chris Elder**, Director, Energy Markets Group, InterGen, **Sara Vaughan**, Director of Strategy and Regulation, E.ON, **Rupert Steele**, Director of Regulation, ScottishPower, **Sara Bell**, Chief Executive, Tempus Energy, and **Jeremy Nicholson**, Director, Energy Intensive Users Group, gave evidence.

Examination of Witnesses

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Q108 Chair: Good morning and welcome. Thank you very much for coming in. It is a big cast, so do not feel obliged to answer every question individually unless you want to but, equally, do not feel inhibited about doing so. I would like to start with a general question. Would you like to say how you think EMR implementation is going so far, in terms of the speed it is being implemented and the quality of implementation?

Jeremy Nicholson: I am not sure who would like to start but I will give a few words on behalf of industrial users. I think the process has perhaps taken longer than some people expected, but not necessarily all. Given the scale of the changes, it is unsurprising that not all has necessarily progressed precisely to plan. It may be fortunate that demand for other reasons has been suppressed in the electricity sector, industrially and otherwise, otherwise I think we could have seen rather tighter margins in the short term and measures like the capacity mechanism and so on would have been arriving too late to solve the problems.

We are cutting it a bit fine and I think, with a fair wind, we will be okay. There are concerns from the consumer point of view obviously about the cost of all this as well, but there are reasons for thinking that perhaps the move towards a more competitive setting of strike prices for CFDs may be accelerated at some point in the future, something I am sure we will touch on. I imagine the generators, in particular, may have a view about whether the investment signals are here soon enough for their purposes.

Sara Vaughan: It has been a difficult balance for DECC. We first started talking about this in 2009 and it took a little bit of time to get the whole subject on to the agenda, but since it got well and truly on to the agenda then obviously it was a question of getting it right and ensuring that we did deliver the best deal for customers, and that is about getting the right balance in the rules that we put together. DECC has to be congratulated on getting state aid clearance through in time. We had quite a lot of doubt whether they would be able to achieve it.

There have been some rule changes in the last minutes that maybe we have not had as much time to be consulted on as we might have liked but, fundamentally, I think DECC has done a good job in a tight timescale and it has delivered, which is the important thing from our perspective. That is what we wanted to see. We wanted to see delivery.

Rupert Steele: Yes. From our perspective I think it was a lengthy process and that was appropriate because there were complex issues that needed thorough consideration. Obviously not everything was decided in quite the way we thought was right but it was, on balance, well considered. It was a big project delivered more or less to time. I think that was a good piece of work by DECC.

Sara Bell: From our side, our concern is that the two parts of EMR have not been looked at holistically. On the one hand, we are building out intermittency but, on the other hand, we have not thought sensibly enough about how to cost-effectively manage that intermittency. Having a greater view as we implement on how the two policy frameworks fit together would be more beneficial to customers.

Chris Elder: I would echo a little bit of what has already been said, but overall I think it has been implemented in a timely manner. If you contrast it to other policy and regulatory changes that have been pursued by the regulator as an example, you can see essentially a new market has been created within four years, whereas at the moment we are facing changes that have been in the pipeline for a lot longer than that that have been pursued by Ofgem. In general terms, the

capacity market part in particular that we are focused on has been, on balance, well pursued and I think industry has been well consulted through the process.

Q109 Chair: Do you have any concerns about the roles of National Grid and the counterparty body?

Sara Vaughan: If we look at the way that National Grid has delivered, again they are absolutely fundamental to the process. It is an absolutely key, critical role. There were some teething problems with the capacity mechanism portal site. When that first went up it went down and things had to be done rather more manually, but we participated in the mock up auction yesterday and that all went extremely well. We were very pleased with the way the systems operated.

We would raise one concern, which is a late or growing concern, which is around treatment of interconnection. As you know, interconnection is not going to be included in the auction in 2014 but will be in 2015. We do have some concerns around the need to deal with the potential conflict of interest there, given that National Grid has interests in interconnectors. It would not be allowed to hold interests in generation and play the role it is playing, and I think a similar approach needs to be taken to interconnection.

Chair: I should remind the Committee that I have a paid directorship and a shareholding in Eurotunnel, which has a proposal for an interconnector.

Chris Elder: Our broader concern around National Grid is just the extent to which they are essentially now setting the market. I am not sure I necessarily have the solution to that but in a sense they are now, much more so than Ofgem, determining the capacity to procure. We have some concerns about the extent to which they are being properly scrutinised by the regulator. If you take the example this winter of SBR, which is slightly separate to EMR, essentially National Grid have to procure around 2 gigawatts of supplemental balancing reserve. To what extent is that providing value for consumers? As we move into a world where the capacity market is essentially being monitored, I think we do have some concerns that there is not proper oversight there.

Jeremy Nicholson: One of the safeguards for consumers is to ensure that there is as much competition as there can be and as few barriers to participation, whether it is a capacity market or other elements of EMR. I think there are some concerns there that certainly on the demand-side there could have been greater involvement, perhaps if certain barriers had not been erected and some of the stakeholder consultation had been more even-handed between the supply and the demand side. That said, the biggest challenge, in numerous terms and capacity terms, is on the supply side and I do not criticise DECC for being focused on that. However, if we are to have value for money for consumers, whether it is as a result of short-term measures that National Grid are taking this winter and next or longer term with the capacity mechanism and indeed between different technologies in contracts for difference, then it is important that we have as vigorous a competition as possible and the arbitrary element of this, in terms of target setting and so on, is kept to an absolute minimum.

Sara Bell: I would echo that. I think having a competitive process is what is in the interests of consumers.

Rupert Steele: From our perspective I think National Grid has performed its role to date professionally and in a well organised way. Sara is right to mention that there is a potential

conflict of interest around the participation of interconnectors. I think DECC has moved to address that by making clear that the weight that is going to be placed on those interconnectors will be determined by the Secretary of State and, therefore, that should address that concern, but it is appropriate that it is kept under review obviously.

Q110 Chair: We will come in more detail on to the capacity market in a moment but, as the issue about a conflict of interest has been mentioned, is it not the case, looking at the balance between supply measures and demand-side measures, that National Grid benefit more financially from supply measures, which may give rise for further investment and transmission on which the profitability of their regulated UK business directly depends?

Jeremy Nicholson: I think that is absolutely correct and I do not think National Grid would disagree with you on that. That is in the nature of the market framework we have set up and it is for Ofgem, as the regulatory body, to ensure that measures are in place so that natural tendency to expand the capital base of a regulated industry is not pushed too far against the interest of consumers. Necessarily, that is not a straightforward task but that is always a non-straightforward task for a regulator dealing with natural monopoly networks, albeit one perhaps exacerbated by the additional responsibilities now put on National Grid.

Q111 Chair: That brings us on to the next point I wanted to ask about. What performance indicators should Ofgem use, when they are monitoring National Grid, to ensure that National Grid is in fact performing its very important role in the delivery of EMR? How should they judge that?

Jeremy Nicholson: When it comes to investment in capacity, and indeed in terms of balancing arrangements and so on for grid stability and ensuring enough backup capacity, the obvious test is: what is the alternative to what you are doing? Is there some evidence, either from other parts of the same market or from external markets, that something could be provided more cost effectively than has been the case? I do not know how else you would test it. As I say, the more competitive the framework in which these elements of grid responsibilities are working and the more competitive tendering there is, the easier it is to demonstrate that something is being provided cost effectively. What is more difficult and will always be a slightly subjective area is: how much additional capacity do you need on the system to ensure “adequate security of supply”? There is not a single answer to that question and at some point some kind of subjective judgment has to be made, whether it is by a Secretary of State or a regulator or anyone else.

Sara Vaughan: Yes. When you are looking at a system in which you are predicting capacity four years ahead then clearly there is a risk around over procurement and, indeed, under procurement, and there needs to be the ability to adjust that. I suppose my first measure would be how accurately National Grid is predicting that capacity margin and how well that turns out in the end. I suppose ultimately what we all want to see is that the lights stay on and that that has been done properly.

Jeremy referred to needing to see a very competitive process. I think if we look at the process that we are seeing, certainly in respect of 2014, it would be hard to argue that it was not competitive when you look at the degree of overcapacity that is available for the auction. National Grid originally said it was going to procure around 50.5 gigawatts. That then got reduced to take account of Longannet, but the prequalification is at 66 gigawatts, so it is at some 17.5

gigawatts more than we think we need. That in itself has set up a competitive process and the competitive process is most likely to be the one that delivers the best results for customers.

Rupert Steele: In terms of National Grid's build out of its network, that is obviously regulated by Ofgem under the RIIO framework. They set the transmission framework a couple of years back, indicating what they think is going to be needed. It is all fairly long-term planning. Clearly it is important that Ofgem carefully scrutinise its proposed investments to ensure that they are appropriate, but I do not think the future would thank us for not building enough grid capacity.

Jeremy Nicholson: I would point out from a consumer perspective that nobody likes to see higher bills, obviously. Equally, if you look at the cost of underinvestment to consumers, if we ever did find ourselves in a situation where power supplies were physically short as opposed to just tight, certainly from an industrial user's perspective the tighter that supply margin is the higher the prices are likely to peak. In the wholesale market those feed straight through on to the costs for trade-exposed industries operating in this country, particularly energy-intensive businesses, and have a huge effect on the competitiveness of their operations in the UK. Of course there is such a thing as overinvestment for all classes of consumer, but the costs of underinvestment and what that might mean if, heaven forbid, we had physical shortages of generation relative to likely demand should not be underestimated.

Sara Bell: In order to ensure that the system is as secure as possible we need to have diversity of resources we can call upon. Within the needy and I think widely within National Grid there is a view that perhaps generators do not fail, but when you look at times when there has been system stress—for example, in February 2012 seven generators failed to come on, on a Saturday morning—it was customers who kept the lights on by delaying their noncritical load. Customers kept each other warm. The more resources we have at our disposal the more secure our system is and there needs to be some measure of recognising that diversity, so perhaps rewarding National Grid for diversity and not just relying on large units.

Q112 Dr Lee: There is a real tension here because the producers would ideally have a market condition where they are incentivised to produce excess energy, but obviously the customers do not want to be in a situation where it is so tight that there can be spikes in prices. Maybe this is a question for Mr Nicholson but I wonder what percentage of customers' bills, be they business or personal, should there be to cover for this need for there to be a band. Ultimately that is what we are talking about here. It is like taking out an insurance policy.

Has any analysis been made by either DECC or an independent organisation about the cost that is worth wearing for having a certain proportion of excess capacity? At the moment, I think as you have alluded to, Chairman, you can see there is a potential here for National Grid to be incentivised to go one way and for producers to go the other, and in the middle of this we have to bear in mind the geopolitical reality of energy. Oil barrel prices have gone down, I suspect because OPEC are trying to put marginal producers out of business somewhere in America with shale oil or something so they are pouring it out. The same with shale gas in America, there has been a sudden supply of gas. Now, I suspect in 2009 neither of those things would have been predicted by clever people in DECC and yet that is the background to which we are having to have a discussion about how much we spend on our energy and how much excess energy we should have in the system.

Jeremy Nicholson: On that last point and fossil fuel price volatility generally, anyone who was betting on fossil fuel prices rising over the medium term and had done so a few years ago would have lost a lot on the back of that and yet who knows what will happen in the longer term. Wholesale markets have a habit of making a fool out of most of us and if we had perfect

knowledge about the future we would not be sitting here. We would have earned a fortune on the back of it, and anyone who tells you they know what is going to happen with oil and gas—

Q113 Dr Lee: What do we do?

Jeremy Nicholson: You need a system that can cope with a variety of different scenarios and that unfortunately means, because of the risk associated with that, there will be a premium associated with something that is going to be resilient.

Dr Lee: What should the premium be?

Jeremy Nicholson: That will be different in different classes of consumer, which is a slightly unhelpful answer. You asked about analysis. DECC has done some analysis on value of loss load to industrial users and others and that helps to some extent, but you will find that it is quite business specific. Some businesses are prepared to wear the cost of providing their own backup generation, because it is so valuable to them they cannot afford to have a loss of data in the financial sector or whatever it happens to be. The cost of providing that energy, relative to its value makes the economics work out for them.

For most other industries that is not necessarily a practical proposition, certainly not if you are running an industrial facility with hundreds of megawatt load on the system. Therefore, particularly processes that have to be run continuously and cannot easily be interrupted or cannot play on the demand-side of the market, for those businesses there may be a very high economic value to providing a higher degree of security of supply than otherwise would be the case. I suspect no domestic user wants to be in a position of having physical outages, but plainly some people would, in extremis, be prepared to pay more or prepared for a payment to use less. There is not a single answer for all classes of consumers.

Q114 Dr Lee: We do not know.

Jeremy Nicholson: Yes, that is true.

Dr Lee: We do not know and so we are expecting a Secretary of State to make a judgment on interconnectors and everything else and, to be blunt, whatever decision he, indeed it may be “she” in a few months’ time, makes is based upon ignorance?

Jeremy Nicholson: It may well be an informed decision.

Dr Lee: Well, informed. If you do not know, you do not know.

Jeremy Nicholson: I used the word “subjective” earlier on and I think that is fair. A judgment will be made when you have a Secretary of State making these decisions as opposed to something emerging through a market-based solution.

Q115 Ian Lavery: Next week it is the T-4 capacity market auction. It is 16 December, I believe, and at this point in time it is already oversubscribed. 62 gigawatts have already been accepted from the prequalification stage and there are only 48.6 gigawatts to be procured. How well is the industry prepared ahead of the auction?

Sara Vaughan: We have worked very hard to be prepared, to make sure we have all of our plant prequalified, which we have successfully done, and to make sure we are in a fit state to bid into the auction. Our internal processes and governance are all in place.

Rupert Steele: We are ready to go for the auction. We participated in the mock auction yesterday. That was a slightly artificial situation because National Grid gave us a script as to what bids we should issue, so we did not have an opportunity to rehearse any commercial strategies, but all the systems worked and we are ready to go.

Q116 Ian Lavery: Ms Vaughan and Mr Steele have already mentioned this but how did they engage with that auction yesterday? Was it helpful? Did it present any unforeseen problems? Did it highlight anything that should be of any major concern?

Sara Vaughan: Not of major concern, no. All the systems worked as they should. They appeared well designed. The comment that we had from our person who did participate was that they were easy to use. Tiny teething issues, but nothing at all beyond that.

Chris Elder: The larger utilities and larger independents like us are reasonably familiar with that type of process, but if you think about the number of participants in the capacity market, and there is a huge number of smaller generators and DSR providers who are in there, I have not heard of any feedback from them. I guess the processes generally looked okay yesterday, but it would be different for another party perhaps.

Sara Bell: The demand-side participants have all said that it went very well and they have no concerns.

Q117 Ian Lavery: What are the implications of existing plants that will not secure a capacity agreement?

Sara Vaughan: That is clearly for individual plant to decide, but the auction is designed on the basis that each plant offers the prices it needs to remain economic. If a plant loses in the auction, if it gets priced out, then that implies it is not economic unless something else changes. Obviously that could be particularly challenging for—

Q118 Ian Lavery: Do you mean it is less economic rather than not economic because it can be pushed down the line?

Sara Vaughan: If you are sitting here looking at a situation in which you believe you cannot cover your costs from the energy market and, therefore, that is the basis upon which you are bidding into the capacity market and you are above the clearing price, that would still imply that you cannot cover your costs in the energy market unless something else changes, because that is the only income you will then have because you will not receive a capacity payment.

Rupert Steele: It depends a little bit on which class of plant is concerned. If it is a new-build plant that fails to get a contract, my guess is that the most likely outcome is the promoter will decide

not to build it yet and will await a later auction. If it is an existing plant that was looking to cover its refurbishment and maintenance costs going forward, then I think the owner is likely to scratch his or her head a bit and see if they can find a cheaper way of keeping the plant operational and look again in a year's time at the commodity prices and take decisions as the timing comes right.

Q119 Ian Lavery: Are there any concerns about the level of capacity being procured?

Rupert Steele: From our point of view, it may be a smidgen on the low side. It is an extremely difficult judgment and I would not criticise the number that DECC have come up with but the UK economy is growing quite strongly. That may feed through to higher levels of demand over the next four years. There will be a top-up auction opportunity in three years' time, which existing plant and demand-side response will be able to participate in. That does enable a bit of fine tuning but, from our point of view, to the extent that they do not have it spot on right—and of course that is an impossibility—our suspicion is they have probably gone a smidgen on the low side at this stage and will probably need to top up a bit in three years' time.

Chris Elder: Just addressing the point on what will happen to the plant that does not clear the auction; you can probably split it into existing and new plant. On an economic basis, the plant that should not clear the auction is probably existing gas because existing coal is making money just now, albeit not a lot of money, but certainly existing gas is a plant that is struggling. I think that presents a real issue for the next three to four years in terms of security of supply. You are probably talking at least half of the gas fleet in the UK that is essentially loss making at the moment, at least half of that is owned by independent investors and, therefore, cannot necessarily pass through some of the losses to customers.

I think there is a real issue over the next three to four years that National Grid, as they move forward and procure supplemental balancing reserve and so on for next winter, have to be focused on. I think there has been a lot of pent up, slightly irrational decision-making coming up to the classic market auction. If it was looked at on a rationale basis a lot of these plants probably would have closed. Barking and Keadby have closed. I think people have been waiting and hoping that the capacity market gives them that signal to keep the plant open, but if they do not clear I think there is a real risk.

Q120 Ian Lavery: WWF have said that, because of this, there are improved prospects for coal and that might deter other investment. What are your views on that?

Chris Elder: As it stands right now, the capacity market is certainly designed to bring forward the cheapest capacity and the cheapest capacity for the current forward curves at least is coal plant. We have seen a lot of coal plant, which perhaps absent the capacity market might have closed by 2020, using this legitimately as an option essentially to look at continued investment and continued operation. What that will inevitably do, absent other market developments, is squeeze gas to the margin and it will be gas plant essentially that either closes or we do not see the new gas plant that will come forward, simply because it is more economic to run these coal plants. Ultimately it is question of where that sits relative to decarbonisation targets.

Sara Vaughan: Could I just pick up on one point that Chris made? He talked about independent CCGTs and then suggested that they were not able to pass costs through to customers. We

absolutely do not pass the costs of our generation through to customers. We run our generation business as a completely separate business, as an independent business, and then we run our supply business as a separate business as well. I think it is important that there should not be any assumption that that is what players who happen to have both supply and generation would do in any event.

Q121 Ian Lavery: Just to Ms Bell with regard to Tempus Energy and the challenge in the European Court of Justice. Basically, I think what has been said is that the capacity market is an unlawful subsidy. What could the implications be on the upcoming capacity market auction?

Sara Bell: We have tried to change the capacity market for the last 18 months to ensure that it is a competitive process, that resources get the same contract length and that they compete against each other so that we deliver the lowest cost to customers. We were not able to change DECC's mind on that policy, so we are pursuing this further. We believe very strongly in a competitive market.

Q122 Ian Lavery: What are the views of the other members of the panel with regard to this?

Sara Vaughan: We work on demand response. It is one of the things we are exploring and we think it is true to say that it probably has not received the same degree of attention within DECC's process for devising the capacity mechanism. The way that we look at it is capacity is capacity and should be treated on an equal basis. We have a slightly odd situation where we have a single auction with a single price but there are a number of different products that are available. We have engaged with DECC around the question of whether there should not be discrimination between the products that are available to different types of capacity, but we have not been successful in that argument either.

Jeremy Nicholson: I think it is strange, and some of us have struggled to understand why this should be the case, that there is not a demand-side product for more than a year's duration. After all, some businesses will have to make physical investments. They may not recover the costs of those investments in order to provide demand-side service that can be certified and delivered reliably and so on, of the sort we would all want, competing against supply. If those costs cannot be recovered within a year or so, it is going to make the commercial case for their involvement rather problematic.

I do not know how much potential demand response there is out there of this nature. I suspect in the large industrial sector most of it that is likely to be around is already there, but that may not be the case. There are certainly other parts of both manufacturing businesses and the service sector that could provide significant additional capacity. We will not know the answer to that if there is an artificial barrier to their involvement in the market.

Rupert Steele: From our perspective, the structure of the contract lengths for different kinds of investment is probably one of the areas that we think might have been done slightly differently. I understand why building a new power station probably does require a longish-term contract and the 15 years do not seem inappropriate. It is quite difficult to do "significant refurbishments" unless they are very significant to get beyond the one-year contract as a generator. I think there are a number of people who may feel this is suboptimal, but I think the bigger point for us is we

are now a week from the auction. We are at the stage now where, for good or ill, we just need to do it and that is the big...

Q123 Ian Lavery: Could Tempus' challenge have any implications on the auction next week? That was basically the question and has anybody answered that?

Sara Vaughan: My understanding is that the auction will go ahead notwithstanding the challenge. I do not know if you have any different understanding, Sara.

Jeremy Nicholson: It would certainly be an interesting legal situation if subsequently payments were made and deemed to be unlawful, but I am not sure of the timing would be on a likely ruling if there is one.

Sara Bell: It is a decision for Ed Davey, so he needs to decide whether to go ahead or postpone.

Chris Elder: I think the danger is if the auction proceeds and then it is subsequently essentially overturned through that decision and there is new plant, in particular, that is incurring development costs on the basis that it has won a capacity contract. I think that is a risk for those investors and they have to weigh up the probability of the challenge being successful or not. It depends a little bit. I think if it is existing plant, yes, it may change some investment strategies but it is a bigger risk for new plant that has won those contracts.

Q124 Chair: Just leaving the troubles on one side for a moment and looking at the balance between supply and demand in terms of how we address peaks—because this is all about addressing certain peaks that only occur for fairly limited periods across the whole year—is there not a danger that we are not yet taking enough account of what smart technology might do to enormously expand the potential of demand response, that all sorts of automated technology could switch off lots of consumption without the consumer having to do anything about it at all when the price reached a certain level or when demand reached a certain level? What we now do with a smart phone was not even dreamt of five years ago and routinely we find that we never buy a deep freeze that does not automatically switch itself off. There seems to be a danger that we are going to build lots of fancy new generators to make ourselves feel better and the *Daily Mail* will not be able to run any scare stories, but we are locking ourselves into a pattern of much higher costs, much higher emissions and missing out on a technology that could transform the way in which we address peaks and demand?

Sara Bell: Those technologies are being manufactured in the UK, so if we supported those technologies we get economic development opportunities out of that as well. The Tempus business model is all based on flexible customers moving their noncritical consumption into lower price periods and cost optimising their energy bill. Businesses want lower bills and the demand that is not time critical can be used at different times, and businesses are very open to doing this. Householders with flexible demand are also open to doing this. We have had a great reception so far to our propositions and these are using technologies that do not interfere with businesses. Air conditioning load, for example, chilling load, can all be moved into noncritical, lower price periods without having to inconvenience the customers at all using smart technology. It just turns on and turns off automatically and the customer gets a lower bill.

Locking into 15-year contracts at a time when we do not know the innovation that is right around the corner does not seem to make sense for this country. There are some fantastic businesses

that are developing sensor technology, control technology and data processing. There are lots of innovations going on in data processing. These are all UK-based companies that are driving jobs creation.

Jeremy Nicholson: It is absolutely right that there are huge opportunities to do things in the domestic sector and with small businesses here that would never have been possible without smart metering. I hope some of these innovations do take place because otherwise the £10 billion plus we are spending on smart metering would have been largely wasted. It is a gateway technology. It can facilitate a lot of things but on its own it is not necessarily going to deliver benefits for consumers, so it is very important that that next stage takes place.

In a sense what we are trying to do for all classes of consumers is what already happens in the large industrial sector. Most industrial sites are already half-hourly metered. Some of them are providing premium services for National Grid to help stabilise frequency, a frequency response service, others provide short-term operating reserve and some of them are participating in the measures this winter and next for demand-side balancing reserve as well. The most common form of price response in the industrial sector is triad load management. This is the response to transmission charging, the three highest periods of demand on which industrial consumers' transmission charges are set.

There is quite a powerful incentive to load manage under those circumstances and if we can create similar incentives without causing hardship for other consumers that must be a good thing in terms of balancing the system at least cost. It is absolutely right that we maximise the opportunity for voluntary commercial demand-side participation, as opposed to anything more coercive. That said and without wishing to sound negative about demand-side response at all, we need to be clear which sort of problem we are trying to solve with this. Certainly, if we are talking about relatively short duration periods of time that can occur particularly, but not necessarily exclusively, during the winter periods at certain hours of the day, switching off 1 million fridges simultaneously for a few minutes might be extremely valuable.

What it will not do and what demand-side response can never do is to make up for the UK wind fleet only producing, in certain instances, less than 1% of its rated capacity. If you look at the output for September this year, that was pretty much what the wind fleet was putting out for a lot of it. I have to say if you look at recent weeks it has been producing record volumes of output and that is welcome. I wish one could rely on it doing so more often. If this was only happening for short periods of time then demand-side response could cope with it much more easily. You cannot shut down factories, still less domestic consumers' demand, for days or even weeks at a time and that is, unfortunately, where you need conventional, dispatchable back up to make sure the system remains in balance.

Sara Vaughan: Absolutely. It is the diversity point that was made earlier. We need a mix of these different technologies, and I know that the Committee had an inquiry on smart metering. I think you took some evidence last week. Clearly we are looking at another delay there. We are hoping to move on forward, but I think there is a question of timing and scale that comes into it as well.

Q125 Sir Robert Smith: I had better remind the Committee of my entries in the Register of Members' Interests, in particular to do with oil and gas and a shareholding in Shell.

There was just something Mr Elder was saying about the fact that, the way the market has gone, the incentive now is to refurbish coal plant that originally people had predicted would use up its

particle emissions and other emission capacity. If there is an incentive to refurbish them in this capacity auction, how much longer would they then be on the system?

Chris Elder: I think that depends upon the life of the coal plant in question. Some of them are 40 to 50 years old. In addition to refurbishing the plant itself, they are also going to have to do lifetime extension costs, which are not insignificant. As we look at it probably, if you had asked us a couple of years ago we would have forecast that most coal plant would have closed at least by early 2020s. Depending on how the capacity market goes, because clearly we need to see how it goes next week, if a number of those plants are able to successfully refurbish and ultimately become compliant with ID and enter the transitional national plan then I think we are concerned that those could run into the late 2020s.

Q126 Sir Robert Smith: Is there a scale? Can you get a perspective on the scale of extra carbon emissions?

Chris Elder: If you compare coal to gas, in a broad sense coal is essentially double the emissions of gas on a gigawatt basis, or slightly more than that. DECC's original forecast assumed that as that coal plant retired you would bring in new gas plant essentially to replace it or replace some of that capacity. If that is not happening then you are essentially looking at probably 10 gigawatts to 12 gigawatts of coal that is on the system that, as originally forecast, would not have been there.

Jeremy Nicholson: From a consumer perspective it is tempting to say, "What is wrong with that?" I appreciate from the point of view of investors in gas and for the much longer term UK decarbonisation, as opposed to decarbonisation of the European power sector, raises some issues about timing, but this is one of the consequences of demand being lower than everyone expected. We know it is lower in the industrial sector. There are some plants that are no longer operational in the UK and no longer consuming hundreds of megawatts as a result, and, although there have undoubtedly been efficiency savings in the domestic sector, I think we all suspect a significant proportion of the reduction in demand has been economies made. When incomes start growing again people will naturally wish to take some of that in the form of increased comfort at home and, indeed, reduced hardship as far as fuel poverty is concerned. There will be growth there, but it is coming later than expected.

There are two factors that do affect the economics of coal negatively, albeit perhaps on a slightly slower scale than anticipated. The Industrial Emissions Directive is going to impose significant costs for anything that is going to remain operational, and the UK-only Carbon Price Floor, which, despite the welcome capping in the recent Budget, has not gone away and still leaves coal operators with a higher carbon price here than anywhere else in Europe.

Q127 John Robertson: I want to ask some more questions about this challenge that has been done because I am quite concerned, Ms Bell. You are a new company.

Sara Bell: Yes, that is right.

John Robertson: And you are challenging the Government. Who is funding your challenge if you lose?

Sara Bell: Tempus Energy is funding the challenge. We have a number of supporters on the demand-side and on the environmental side.

Q128 John Robertson: Would I be right in thinking, as I have been doing as I have been listening to Mr Nicholson's rather extensive support of you, that there are lots of people who are behind your company in challenging the Government? Would that be fair?

Sara Bell: There are definitely entities that want to see the demand-side treated fairly in the auctions, and want to see customers having the opportunity to—

John Robertson: No, that is not what I am asking. What I am asking is, because I have some concerns, whether your company has either been created for a reason or you are being used for a reason. Which one is it?

Sara Bell: It is neither of those. My company has been created by me under a completely new business model, which I have worked phenomenally hard to create. Last year I worked four different jobs to fund this company.

Q129 John Robertson: In that short space of time you are going to challenge the Government and nobody else? This is more a critique of the rest of you. Why aren't you doing as this new company is doing, as Mr Nicholson has just extensively said? Why?

Sara Vaughan: We do not need to challenge the Government on the capacity mechanism because we believe the most important thing is to get on with the capacity mechanism and to get it in place. We have had a lot of iteration with the Government through their consultations and everything else and, while I have made a couple of comments and the team have made a couple of comments about things that may not be perfect, they are not bad enough that we would be wanting to take the Government to the European Court.

Q130 John Robertson: You have voiced a number of concerns, particularly including the interconnector and its capacity.

Sara Vaughan: Yes.

Q131 John Robertson: If you are so concerned, why have you not challenged?

Sara Vaughan: If you read the state aid decision that the Commission published, it is quite clear that, in order to get state aid approval, we have to get generation in other member states. The way that the Government has chosen to do that is through use of the interconnector, so we do not want to threaten the whole—

Q132 John Robertson: I get where you are coming from. Mr Steele, ScottishPower?

Rupert Steele: From our perspective, like any situation where the Government is doing something and people are participating, we agree with them on some things. There are some things we do not agree with them. You look at the thing overall.

Q133 John Robertson: You get taken to court every time you disagree.

Rupert Steele: No, that would keep the justices very busy.

Q134 John Robertson: There lies my problem. We have a new company on the scene and the larger companies do not want things to go to court because everything gets dragged on and nothing gets done. People who are investing lots of money into lots of industries will now take a step back because they are wondering whether the Government are going to survive a court case. Why is this happening?

Jeremy Nicholson: I think the timing is unfortunate. From a consumer perspective, we do not want to see any delay in this mechanism coming in. On the other hand, we would have preferred it was more demand-side-friendly in the first place. I am not going to attack Tempus' right to take legal action on this. It is unfortunate it has come to this. I hope any decision that can be arrived at is sooner rather than later and that it does not put off investors in the supply-side of the market.

Q135 John Robertson: Let us ask more general questions about the system. The demand-side response industry approached the issue of choosing between the T-4 capacity market option and transitional arrangements next year. Where are we? What is going to happen? Good, bad, indifferent? Where do we go forward with the T-4?

Jeremy Nicholson: The only remark I would make on behalf of industrial users is there has obviously been quite a lot of interest in the transitional arrangements, with demand-side involvement this winter and next. I am not sure how that is going to affect rates of participation in the full capacity market. You can be in one but not in both.

Q136 John Robertson: Are there advantages in the transitional arrangements or are there disadvantages

Jeremy Nicholson: I think it is expected that the participation in the transitional arrangements, for certain users, might be more lucrative than in the longer term capacity mechanism and for them that might be an advantage. I am not sure that is necessarily true for all.

Q137 John Robertson: The implications of the recent announcement on 2 December that the interconnectors would be eligible to participate in the next capacity market option, Ian has already raised concerns on this. Do you want to broaden that?

Sara Vaughan: Yes.

John Robertson: I cut you short on that one.

Sara Vaughan: No, that is absolutely fine. As I say, if one reads the state aid decision one understands why the Government felt compelled to include interconnection. I think the issue we have is around effectively a level playing field, because interconnectors are transmission capacity. They are not generation. As such, they do not pay transmission use of system charges. They do not pay balancing use of system. They do not pay the carbon price floor. The first point is that there is this inequity between them.

The second point is that under the European model, under market coupling, power flows according to the economics, where they are going to make more money. When you look at the way that interconnection is treated under the market model it is usually treated as floating, as zero. In other words, it does not provide any additional capacity at times of system stress and so, again, it just does not feel right.

Q138 John Robertson: Part of your complaint, if I am right—I am reading this note here—is National Grid is a shareholder and a number of UK interconnectors suddenly changed to a company itself.

Sara Vaughan: Yes, that is our conflict of interest concern that needs to be looked into. There have been, as you will remember, concerns raised around conflicts of interest in the past of National Grid. To date, the Government has resolved them to a position where you were happy with the existing position, and I am sure that they will be able to resolve this as well. We are flagging it.

Q139 John Robertson: What would you like to see implemented then so the whole thing is successful and maybe, Mr Steele, you can say as well. Carry on. Mr Steele will know how ScottishPower are going to come into that system.

Sara Vaughan: I think what we have to ensure is that you cannot reach a position where National Grid is both advising the Secretary of State on security of supply assessments and the capacity demand curve while also benefiting as a participant. We need arrangements put in place to stop that happening.

John Robertson: Mr Steele?

Rupert Steele: This is one of these areas where you perhaps would not start from where we are but, again, given where we are starting from, DECC are probably doing the best thing that is feasible in the circumstances. In approving the capacity mechanism, the European Commission insisted that it was open to plant in the rest of Europe. I think DECC correctly reached the view that, at the current level of European market integration, it was not possible to get generators to participate directly, right now, for the second round auction. They believe it is essential to have the second round auction and I agree with them. The compromise agreed with the Commission, and it is in the documentation, is that it would be done at the interconnector level. I think everybody, DECC included, recognising that is suboptimal, but we were between a rock and a hard place and it was the right decision to go forward with that. With all those caveats, we are supporting DECC.

Q140 John Robertson: What further arrangements are needed to ensure genuine competition in the future capacity market options?

Rupert Steele: I think it feels pretty genuine at the moment.

John Robertson: Not if we are going to challenge in court it is not.

Sara Bell: It is called contract length.

Q141 John Robertson: I understand what you are saying and that sounds all very fair but we are asking companies investing billions of pounds into new power stations. Is it fair to them to have a short-term length of time?

Sara Bell: In the US no capacity market gives a contract length of more than five years and they are building power plants. Those capacity markets are based on a level playing field, everyone getting the same contract length, and they are building power plants.

Q142 John Robertson: With great respect, this is not the United States. We do things slightly different; not always best but we do things differently.

Sara Bell: Having a competitive electricity market is of benefit to all customers here and we do not have one at the moment.

Jeremy Nicholson: The only comment I would add on this is that I do have some sympathy for the Commission's position. Whatever else one may think about the European Union, a single energy market is a good thing for energy consumers. Reducing barriers to trade benefits all of us in terms of security of supply and pricing and potentially makes decarbonisation cheaper as well. I am not suggesting we would feel comfortable if all our electricity was being imported, but an element of our capacity could be located outside the immediate UK. It need not, of itself, be a matter of concern. E.ON quite rightly said we have to demonstrate additionality here and I think, if you look at the comments from the Secretary of State when the announcement was made, it is clear that payments should not be available for something that does not bring something extra and can be relied upon.

I would stress that there was scepticism from the Energy Intensive Users Group about the need for a capacity mechanism. We did not object to it but we did not support it either when the Government raised the idea, we are part of an international federation, the International Federation of Industrial Energy Consumers, which represents energy intensive industries across Europe. We are similarly suspicious of them because in many instances they have not resulted in very good value for money for the consumer, but if we are to have them it is important that there is equitable demand-side access and there as vigorous a competition as possible and that the arbitrary elements, including some of the ones Mr Lee asked about earlier on, are kept to an absolute minimum. If it be useful to the Committee I would be happy to send you a copy of the IFIEC statement on capacity mechanisms.

Just to wrap up on this, the final point is that they must not be barriers to trade and this is where the Commission is quite right to intervene.

Q143 John Robertson: My last question is about National Grid again. Is there a risk that National Grid would overprocure capacity in future auctions and, if so, how should that risk be managed?

Sara Vaughan: It is a risk that comes around, as I say, because you are procuring four years in advance. I think you can help deal with that risk, if the delivery body, National Grid, feels that it has overprocured, if it were able to perhaps sell overprocured capacity on the capacity market.

Q144 John Robertson: When will you find out, four years' time?

Sara Vaughan: Maybe three years' time when it becomes a bit clearer and then that would reduce the cost of overprocurement. As a number of us have said, it is a terribly difficult thing. You do not know how demand is going to rise. You do not know how the market is going to develop.

Q145 John Robertson: Is demand not going down in general terms?

Sara Vaughan: If we are recovering then it is possible, we hope, that industrial demand will fall. It is true that energy efficiency is having an impact the other way, which just adds to the difficulty for National Grid, I think.

Q146 Chair: I would not like the statement that a single European energy market is an unqualified good to go completely unchallenged. For example, if a very large European country chose to become very heavily dependent on gas supplies from a country outside Europe and those were suddenly cut off, the consequence of that rather rash policy would be felt in the form of higher prices for consumers in other countries who did not follow that policy. I think there are some potential risks attached to it that we should at least bear in mind before rushing headlong in that direction, although I think gradual steps towards something more approaching a single market are probably helpful.

Can I be absolutely clear what the arguments are? We may have covered this already, but just to summarise them. This is for Tempus. What are the arguments for increasing the length of the capacity market contracts for demand-side response?

Sara Bell: To ask different resources to compete on uneven grounds does not make a level playing field. The reason why the contract length is the same in other markets is to create that level playing field. Demand-side customers, when they become flexible, need technology. They need to make that investment but, much more importantly, they need to, as a company, buy into the value of being flexible. I have made this example before. A car manufacturing plant, for example, is not in the market of being flexible. It is in the market to make cars.

If we want to persuade our industries, our small businesses and our individual consumers to become flexible for the benefit of reducing costs for all, it needs to make sense to them. Asking a company to change business processes or to change the timeframe for when they are running processes, for a one-year investment is not long enough. We have been trying to make that sale to customers and they are not buying it because it is not long enough and it does not make sense

to them. What company in their right mind would change how they are doing things for a one-year revenue stream? It does not make business sense.

Q147 Sir Robert Smith: I wanted to pursue what the early CfDs under the Financial Investment Decision Enabling for Renewables had done to enable renewables.

Sara Vaughan: Yes. The original intention behind the FID enabling contracts, we will call them, was to provide help to investors who were making investments ahead of the first CfD allocation band. Clearly we are in the middle of that. We had the prequalification for the first CfD allocation round in October, and we are now waiting for the real thing to happen. What is not clear to us is how many of those plants that benefited from this preferential regime have taken a final investment decision, which was the thing that the whole process was supposed to enable. The concern we have is around the fact that clearly the CfD allocation round is a competitive process, whereas the original FID enabling was contracts being granted on the basis of the CfD strike prices as they currently stood.

I suppose we have a question both around the proportion of the budget that has gone in that first round, and also around the competitiveness for customers of those prices as opposed to what might come out of the auction.

Sir Robert Smith: Do others share that?

Rupert Steele: Yes. We think it was important to have a mechanism to keep investment going while EMR was being put together. With the benefit of hindsight and the way everything turned out, if we had been running the process we would have put slightly less stuff through the FIDeR process and rather more through the competitive process. We have arrived at a situation where the FIDeR process is four or five times the size of the competitive process and that feels to us, with the benefit of 20/20 hindsight, to be a bit of a suboptimal ratio.

Sir Robert Smith: You would move to auctions.

Rupert Steele: If they were going to move to auctions I would have had a bigger proportion of the portfolio in the auction so that the consumer benefit could have been achieved on more plants.

Q148 Sir Robert Smith: E.ON also said that the auction could be more efficiently designed. I wondered what you thought.

Sara Vaughan: Yes. What we suggested would be a more efficient way of running the auction looks more like the capacity auction, so a descending-clock auction. What we have instead is a sealed bid, a once and for all, put your price in an auction. We think that there are some risks around that process that, to be fair, DECC have tried to deal with. The risk is one that in order to win in what you believe is going to be a very competitive auction you pitch your bid a bit low and, therefore, you are not able to follow through and so the capacity does not get delivered. The way DECC has sought to deal with that is through disincentives to non-delivery, but we think it could have been dealt with by designing the auction in a rather different way.

Sir Robert Smith: Would others share that?

Rupert Steele: I do not think we have a huge problem with the auction design. It is academically curious that when DECC were designing two auctions at the same time they came up with two different designs but, again, we are now at the stage where we just need to do it.

Sara Vaughan: I agree with that.

Q149 Sir Robert Smith: Looking forward, were there any concerns about future CfD allocation rounds?

Rupert Steele: The biggest concern is that none have been announced. Therefore, as a developer, we do not know whether to be spending money on bringing forward new offshore wind projects, for example, to participate in a subsequent round because we do not know when that round might be. We know that there is some money left in the levy control framework but we do not know when or if the Government intends to spend it.

Q150 Sir Robert Smith: Do you need to see the levy control framework move further into the future because of the long time lag?

Rupert Steele: Yes. We may think that further decisions on rounds and on the levy control framework may not happen before, say, May next year for one reason or another, but as soon as possible after that people who are developing projects will have delivery dates that are beginning to get outside the levy control framework period and so the Government of the day is going to need to address that. Depending on what they want us to do, they will then need to put the budget in place to enable that to happen.

Q151 Graham Stringer: Whatever the details are, this is an expensive business. What is the best way of controlling the costs of the capacity market?

Jeremy Nicholson: We have already heard some comments on that. The most vigorous competition between generators and between generators and demand and, indeed, perhaps some generation at the margins outside the UK, too, is part of the solution. Ultimately, because a judgment will have to be made about the level of capacity required, there is always the risk that that capacity may be larger than “is needed or desired” by some classes of consumer. That is inherent in the capacity mechanism itself. There is no way of avoiding that. One can keep the costs down by having, for example, inadequate or highly risky capacity margin, but that obviously does not solve the security of supply problem. As I say, the simple answer is as much vigorous competition between as many participants as possible with the fewest barriers to participation.

Sara Bell: The way in which the costs are being rebilled to suppliers and then rebilled to customers could have provided a price signal to customers that tells them, “For these very few events in the year this is how much it costs; therefore, this is the benefit of being flexible”, but we have chosen to apply a cost-allocation method that smears the costs across the whole of the winter period. We believe very strongly, that if we had made the original proposal that DECC had put forward, which was effectively a deepening of the triad process where you basically create a sharp price signal to customers so that there is a benefit for them in reducing their demands—

even if they are not in the capacity market and they do not have an obligation, they can still benefit through their energy bill by reducing their demand at that critical peak period—that will be the best way of signalling, for next year’s auction, what is required because then you can see, “Okay, these customers are prepared to be flexible; therefore we need less”, or, “No one is prepared to be flexible; they are prepared to pay the price”. We believe that will be the best way of keeping the cost truly reflective for customers.

Chris Elder: I do not think you can look at competition in the capacity market without looking at competition in the energy market as well. We have strong views ultimately as we would like to see more openness and transparency in the energy market. We think there are elements of that that certainly could do with looking at again in improvement. We are concerned that there is still a huge amount of market concentration. It is absolutely right there is a lot of competition in the first capacity market. Some of that is pent up development, developments have been waiting around for this for the first capacity market. Whether they will be there next year is debatable, but we still have a huge market concentration. You can look at the statistics and, to collate an example, EDF have over 50% of the price-making plan in the first auction. Clearly there are rules around how they bid that in but, to give an idea of that concentration level, it is not insignificant.

Jeremy Nicholson: There is an issue on transparency with respect to the capacity mechanism and, indeed, to CfDs generally. DECC publish every year, and did so a few weeks ago, an annual report on the impact of climate and energy policies on prices and bills for consumers. Very strangely this year, for the first time, they omitted the information on prices and only told us the impact on bills. Those of us of a slightly cynical disposition believe this might be because the percentage impact on prices are higher than they are for bills and it might suit the Government or DECC to slip these figures out at a later stage. We are still trying to find out from DECC why the data on prices has not been released. We know they have produced it because they could not calculate the impact on bills without it.

The reason I mention it now is that one of the policies that will impact on bills is the capacity mechanism itself. You might say that a well-designed capacity mechanism could deliver no net increase in costs, compared with the alternative or might even be cheaper than not having a capacity mechanism under certain circumstances, but the circumstances that have given rise to its apparent necessity is the fact that we are going to have an awful lot of intermittent plant on the system, predominantly wind and some solar, as a result of the renewables programme, a programme with a capital cost of what, £110 billion, something like that?

I agree with DECC that it is potentially cheaper to deliver on the CfD mechanism than might have been the case with previous alternatives like renewables obligation, but it will not be cheap. The levy control framework shows costs going up to £7.5 billion per annum by 2020 and presumably escalating beyond that. These are significant costs. They are not confined to the CfDs themselves. There is an impact on transmission and, to a certain extent, distribution charges and there is an impact potentially on the capacity mechanism as well, to the extent that that creates net costs for the consumer. All of this makes it less straightforward to identify the total cost impact, but it is important that DECC attempts to do so and, when it has done this sort of calculation internally, it is important that the price data is put in the public domain and not withheld unreasonably.

Q152 Graham Stringer: At the start of the session we talked about the volatility of energy prices and if we could predict them none of us would be sat around this table. We would be somewhere else. Given that, is it sensible to have these auctions four years before the capacity comes online?

Rupert Steele: The reason DECC went for a four-year period was to maximise competition by allowing, essentially, a new plant on the drawing board to bid in the auction and be able to deliver by the due date. If you had gone to three years you would have been limited to new plants that are shovel ready and if you went for shorter then new plants would not have been able to participate. DECC had a trade-off between the breadth of the competition and the level of frosting on the glass that they were looking at the future through and that is a judgment call. Would we have gone for three years if we had been designing it, rather than four? I do not know, but it is clearly one of those if you want new plants to have a role.

Jeremy made a very important point when he said that the cost of the capacity mechanism could be zero or negative because people always focus on the gross capacity payments made to the power stations and not on the effect that those payments have on the markets by bringing forward capacity in a planned way with lower risk. The cost of capital in investing in a new power station where there is a capacity mechanism will be lower than in the environment where there is no capacity mechanism. If you can get the capacity procured right then basic economics suggest this should save consumers money. Obviously if you get it wrong then it could be costly or if you go for a higher level of security of supply than customers are willing to pay for then it may cost some money, but it is incorrect simply to look at the gross payments and not take account of the effects on the cost of market entry and on the long-term price of power.

Q153 Graham Stringer: Mr Nicholson, I have asked you this question in previous sessions but I would still like an update. Where are we now with the impact of market reform on energy-intensive industries and what action could DECC take to improve the situation?

Jeremy Nicholson: We are certainly in a better situation than we were a year ago at the important announcement on the carbon price floor and the extension of compensation payments for the indirect effect of renewables obligation and feed-in tariffs on energy-intensive users, which will make a significant difference, but the job is not done yet unfortunately. BIS and DECC have been consulting on the proposals for compensation for the renewables obligation and feed-in tariff, which is the largest missing element of the package, but it is clear from their proposals that, unless they modify, there will be certain significantly trade-exposed sectors, such as the ceramic sector and there are others too, that are likely to miss out on this compensation. The same is likely to apply in terms of thresholds for exemptions for part of the cost of contract for difference and this is hugely important.

Obviously the CfD costs do not start to kick in seriously until towards the end of this decade. They will start impacting on consumer bills earlier than that, but the real ramp up will occur in a few years' time. The proposal is that energy-intensive users will be exempted for around 85% of those costs, but the thresholds for eligibility for that, which are being proposed by BIS at the moment, look like they will leave a small number of very significant energy-intensive processes undercompensated or underexempted from these costs. As I say, even for those that do get compensation and exemption it is only going to be up to a certain level, which may not be the equivalent level available to an energy-intensive industry in Germany, for example, where the compensation levels for most energy-intensives tend to be somewhat higher. There is work still to be done on this.

I do not wish to sound churlish about the efforts that have been made by BIS, DECC and Treasury over the last 12 months, which have been very significant, but I would not like to leave the Committee with the impression that the job has been finished. Unfortunately, it most certainly

has not and, of course, the most problematic element is the UK-only carbon price floor even for those lucky enough to be compensated for it, which is less than half our membership, because the EU State aid rules do not permit compensation for that except in a relatively narrow number of circumstances. There are significant sectors that will, effectively, end up paying the higher cost of carbon through their bills, just as generators do in this country, even though their competitors elsewhere in Europe do not face these costs at all.

Rupert Steele: The carbon floor price is, in some ways, problematic. It is one of a series of interventions that are in place at the moment that have the effect that generators overseas are effectively being subsidised to compete in the UK market. Interconnected generators from overseas do not have to pay a number of grid charges that have to be paid by UK-based generators and obviously it is only UK-based generators that have to pay the carbon price floor tax. The effect of this may be to significantly reduce the generation industry in the UK in favour of imports. It is a particularly unusual Government intervention because normally governments intervene to prop up their own industries at the expense of those overseas, but we seem to be doing the reverse. It may be that if a situation ever arises where the revenue is not essential to the Government, particularly the hidden nature of this revenue, people will want to look again at the level of that tax because I still think it is high.

Q154 Graham Stringer: That is very interesting. You are saying that it is effectively a subsidy to foreign power plants but it will also, if those plants are not carbon intensive, lead to higher levels of carbon dioxide into the atmosphere. It is the same argument as the embedded carbon in manufactured goods.

Jeremy Nicholson: The UK-only carbon price floor cannot reduce emissions. What it can do is help redistribute where those emissions take place within the emissions cap for the Emissions Trading Scheme and in Europe.

Chair: Had our witnesses read any of our previous reports they would know what the Committee's view on this subject is. The carbon price floor has nothing whatever to do with EMR. Can we return to EMR?

Q155 Graham Stringer: Right, but it is interesting. Should future contracts for difference have clauses for clawback on excessive returns?

Sara Vaughan: We would say they should not. The whole purpose behind contracts for differences was to provide revenue certainty to investors in order to reduce the cost of financing for the investments they were going to make and, therefore, enable them to deliver low-carbon investment more cheaply. If you introduce a clawback mechanism then you are putting back some uncertainty and, by doing so, you are likely to increase the cost of the CfD and thereby undermine its purpose.

Jeremy Nicholson: That is a fair argument certainly for shorter contracts. When you look at what is being proposed for nuclear, it is somewhat a different situation. There is a very long lead time for new build, as you know, and then you are talking about operating a plant potentially for as long as 60 years and certainly with 30 or 35 years of that operational period covered by a contract for difference. Under those circumstances, with a very highly capital-intensive project, it

seems right that there is an element of benefit sharing for the consumer and the project developer if it turns out that the operating costs or more likely the capital costs are significantly cheaper than expected. In a sense, that is a special case, not because it is nuclear but simply because of its capital intensity and the contract duration. You could make similar arguments with other renewable schemes of a similar scale. If something the size of the Severn Barrage or some other huge offshore scheme were ever to take place it would probably need similar arrangements.

Q156 Graham Stringer: Mr Steele, ScottishPower have said, “It is for Ministers to weigh up the benefits of differing levels of ambition in EMR against the impacts on bills.” How should Ministers prioritise those levels of ambition to ensure that EMR offers the best value for money while fulfilling its aims?

Rupert Steele: That is an interesting question because what we are saying is that that weighing up is for Ministers to do. For example, in setting the level of the capacity mechanism, the amount of energy to be procured and the target reliability standard, they need to decide how reliable a system they want and understand what the cost of that is. In deciding how quickly to build up renewables, Ministers need to weigh up the benefits of a rapid deployment of renewables against the inevitable cost that will be incurred in doing that. We do not think it is for us in the industry, certainly at ScottishPower, to specify how those factors weigh up. We think that is a role for the elected politicians.

Jeremy Nicholson: The principal cost of EMR to the consumer, of course, is the contracts for difference. I accept they may be slightly less expensive than some of the alternatives if we are to pursue our decarbonisation and renewable targets but, nonetheless, it does come at a huge cost to the consumer. The Energy Intensive Users Group and my colleagues in the EF representing manufacturing more generally have argued that the sooner we move to technologically neutral CfDs the better. I accept we had to start from where we are and there were practical problems doing that straightaway but, as a matter of principle, it has to be the right thing.

We would like to see if not this Government then a future administration commit, sooner rather than later, to moving towards technologically neutral CfDs and certainly by 2020 at least for established technologies. This is in accordance with the move that the European Commission would like to see as well for mature technologies. Obviously there is going to be a case for higher levels of subsidy for demonstrating very early-stage technologies on a relatively small scale and we are not talking about that, but the massive rollout of tens of gigawatts of capacity. If it is to be done cost effectively we should have as few artificial restrictions in there as possible and let the market find the most cost-effective solution. If there are other environmental concerns, legitimate ones about the impact on communities in rural areas of onshore wind for example, then it should be the planning system that deals with those concerns rather than simply relying on differential banding and subsidy to try to control that.

Q157 Chair: On that point about technology-neutral options, do you think it is possible to deal with the differing reliability of supply from some technologies? For example, how do you compare an intermittent technology with one that clearly provides base load, such as some waste or energy streams might be able to do, compared with onshore wind?

Jeremy Nicholson: Theoretically, you could do so by only providing subsidy support for technologies that are internalising the cost of their own backup. In other words, you contract for a dispatchable unit of power or you contract for a base load unit of power, exactly as you would in a conventional market. That would mean intermittent technologies like wind and solar having to contract with something else to provide their own backup. You might well find that quite a lot of their backup is fossil fuelled, in which case their low carbon credentials might be perhaps less glowing than they would like to make out.

It is very easy to be low carbon if you are an intermittent generator, if you happen to have a low carbon source of backup available. In the long run we may well do so, but we are not in the happy situation of Scandinavian countries that can use hydro, for example, to back up wind and solar. To an extent we can do it with biomass and, of course, the demand side can help too. Leaving nuclear to one side because it is its own backup, it is primarily a base load source of energy, but for anything else—you asked me to justify the EMR process. It was not—

Q158 Chair: No, I had asked you to justify your statement, which you moved quickly to technology neutral auctions.

Jeremy Nicholson: Yes. My personal view would be—

Chair: If you are not imposing a hybrid bid, which may say, “Okay, I have this wind farm but I have to get backup gas—”

Jeremy Nicholson: Yes, but it only provides—

Chair: Let me just finish the point, “I have this wind farm that I want a CfD for but it is going to be backed up by some gas-fired plant”, you get into hideous complexity very quickly, do you not, because what is the limit then on how much of your commitment is provided by one technology and how much by another?

Jeremy Nicholson: By its average carbon intensity, would be the obvious way of doing it. If you are going back up wind with gas then that is less carbon intensive than backing up with coal. If that is what you are contracting for that is what you provide. That would be one suggestion. If you have some truly low-carbon dispatchable alternative then great. Why should we not be covering its environmental cost? Why should it not be covering its grid connection costs the way other technologies do? It does not seem to me to be economically or environmentally sensible that it is treated in a different way.

Q159 Chair: Can we just go back to the point about clawback? I am not clear how clawback creates uncertainty about the minimum revenue that a CfD provides.

Sara Vaughan: It clearly depends on how the clawback clause is drafted because it will be making an assumption, will it not, around the amount of revenue that is recoverable under the CfD? The risk arises that it introduces that additional uncertainty.

Q160 Chair: But the term “clawback” is normally applied where the CfD provides the generator with a guaranteed price. There is clawback if the market price happens to be higher than the guaranteed price.

Rupert Steele: That exists anyway. If the market price is higher than the guaranteed price then the generator has to pay the excess under the CfD.

Chair: Yes, but that was known at the time the contract is signed. I am not clear how you can justify the statement just now that somehow the clawback introduces an element of uncertainty about the guaranteed revenue. It does nothing of the sort.

Sara Vaughan: No, it potentially can and it depends on, again, how the clawback clause is drafted. If you still have a guarantee as to your expected revenue then, as you say, that does not change the risk profile as you enter into the contract. However, if it is a rather more widely-drafted clawback provision where a later Government perhaps just does not like the bargain that has been entered into by an earlier Government and uses that as an opportunity—

Q161 Chair: Are the existing CfDs being written in that sort of way?

Sara Vaughan: The existing CfDs do not have a clawback provision in. There is not a clause that I can look at and say, “That one works but that one does not”.

Q162 Chair: This is a theoretical risk attached to the possibility of a change of view by a subsequent Government, but that exists whatever policy you have, does it not? The CfD does not in any way increase that risk. It slightly reduces it.

Sara Vaughan: It gives it a handle, does it not? It is an opener.

Chair: You are saying the CfD is not legally enforceable.

Sara Vaughan: No, because there is no clawback provision in the CfDs that are being put in place. A CfD is a legally binding contract. If you put in place a clawback mechanism within that contract then, depending on how the clawback mechanism is drafted, it potentially creates a reopener for one of the parties and that is the risk that sits there around it.

Q163 Christopher Pincher: With respect to the capacity mechanism, one of the concerns that was raised to me by generators during the passage of the Bill a year or more ago was that, if the Government imposed overly onerous penalties for the capacity market, then those generators would be compelled to build in excessively redundant capacity and the cost of that would be passed on to the consumers and some were bandying around figures like 14% of extra costs. A year or so on, how do you feel about that? Does that risk still obtain or has it receded somewhat?

Rupert Steele: I think we are broadly okay with the penalty regime as set out. It is a very heavy penalty if you do not perform at a peak and I guess that is appropriate because that is the whole point of the capacity mechanism, that you do perform at the peak. However, one has to

recognise that any bit of apparatus has a potential failure rate, however good it is. In setting the amount of capacity you need to make an allowance for that, so there is a balance. The Government has made a few changes. They have this four-hour notice period that protects generators from being penalised when they had no real reason to be running in the first place. There are caps applied that recognise a bit of the reality of operating real equipment. On balance, while, like so many of these things, it might not be precisely how I would have put it together, it is okay.

Chris Elder: To echo your point, probably 18 months ago it probably was not bankable as a product, essentially, with the penalty regime. I think it has moved on significantly since then and it is now in a position where it probably strikes the right balance between incentivising generators to deliver but also making sure they are there in that circumstance. The capacity market penalties are probably the least of the worries for generators that cannot deliver in those circumstances. It is the energy market imbalance costs that people face in that scenario that is the real danger.

Sara Bell: On the demand side we agree on the penalty regime. You do have to strike a balance in ensuring that customers are paying for something so that there is a penalty for not delivering and I think that balance has been struck.

Q164 Dr Whitehead: For further clarity for investors over the coming years and how investors might look at the outcome of where EMR now is in terms of that investor confidence over the next period, what sort of priority would you put on those and the various considerations that might be needed, such as allocation round budgets, timetable of future actions, transparency of expenditure and so on?

Sara Vaughan: Certainly transparency of future allocation rounds is one of the points that we touched on a little earlier and transparency of availability of the levy control framework post-2021 is another concern. I think there is also another issue around which we, DECC and everyone, possibly need to do some more thinking in a competitive auction process. How do we deal with the risk for a developer that they will have invested tens of millions of pounds in developing, for example, an offshore wind farm to get it to the point where it can be entered into the auction but with no guarantee, because it is a competitive process, around its success in that auction? The concern is how you encourage developers to keep developing against that risk. Seeing a track record of allocation rounds would help with that because clearly if you are not successful in one it is possible that you may be successful in the next, but I think it is a bigger concern that we need to find an answer to.

Jeremy Nicholson: It seems to be a common call from both the supply and demand side that transparency of subsidy levels and in particular the levy control framework is relevant to investment decisions. I sometimes get involved in debates about how important it is to have published decarbonisation targets for the electricity industry and some people get very excited about this on one side or the other of the argument. I am sure it is symbolically important to a lot of people and certainly the NGOs seem to think so. It is not obvious to me that billions of pounds worth of investment will go into something or not simply on the basis of a target being there or not, whereas information such as the levy control framework strikes me as being far more investor relevant as far as belief and faith that a policy will be sustained, regarded as sustainable not just by this but by future administrations, and tolerable for the consumer. If there is not

sufficient faith about that then who is going to do the preparatory work prior to signing such contracts into the future as the costs mount?

Rupert Steele: I think Jeremy has made a very important point there. The levy control framework, although obviously it curtails the allocation or could do by limiting the amount of money being spent, does have a beneficial effect in terms of investor confidence because it demonstrates that there has been proper thought about the expense of what the Government wants done and political acceptance that those costs are costs that should be borne. That is of huge importance to investors. What investors are less persuaded by are uncostered targets that look good but may not be ultimately affordable and investors worry that, if it has not been costed and the resources put aside, they will end up footing the bill and on that basis they will not invest.

Q165 Dr Whitehead: That appears to suggest that just having something that someone appears to have thought out is, in itself, something that gives investors confidence. Does that imply in your views that, say, Government announcing that there will be a levy control framework and it will be something like this post 2020 is good enough or might the fact that it might not work come into the framework?

Jeremy Nicholson: It sounds like that would be necessary but not sufficient.

Sara Vaughan: Yes.

Q166 Dr Whitehead: You would quite like it to work as well, I guess.

Sara Vaughan: Yes.

Jeremy Nicholson: It clearly needs to be functional as well but, without some recognition of the likely costs impact on consumers and whether that is going to be socially, economically and politically tolerable, why would investors gear up in a significant way to deliver something prior to those contracts being available?

Q167 Dr Whitehead: Sara has mentioned the question of, presumably on the basis of levy control framework up to 2020, a number of people putting large amounts of money into development on the now extremely unlikely basis that they will secure any form of contract. What sort of post-2020 assurance, over and above the fact that there might be a framework, might need to be undertaken that in particular might overcome that problem? Would it be that you would be looking to a similar sort of procedure as occurred on a previous occasion where a headline figure was given at a certain date and then one had to fill in the detail backwards or would you look for something that would appear to be coherent, sector by sector, as far as possible investment would be concerned? If so, how might that work in the context of what we know is happening with the introduction of large nuclear plant in the middle of the next period?

Rupert Steele: The thing that slightly caught us by surprise was the Government's decision to hold back quite a lot of the budget and not make it available in the competitive allocation round that is about to happen. For delivery in 2019/20, for the less established technologies, they are spending £235 million and holding back £915 million. They could have had a bigger auction within

the levy control framework, but chose not to and I do not think we had seen coming the possibility that budget would be held back in that way. Clearly that means there can be another round and there will be another opportunity for those projects that are not successful in this round to bid in that round, but that element of the design was a bit of a surprise to us.

Sara Vaughan: It does not mean we do not support it though. It clearly enables projects that are currently at an earlier stage of development to potentially also achieve a CfD. I think the other thing it does is, if we assume that we are all working to reduce the costs of developing these technologies, potentially it also enables consumers to benefit from those cost reductions that we hope we will see come through.

Q168 Dr Whitehead: What sort of factors do you think DECC should be monitoring over the course of the early capacity market auctions and what is happening currently on CfD auctions and allocations to adequately assess the success of the first phase of EMR implementation? Would success be judged, for example, in terms of things that happened or financial limitations that are kept within or developments that are facilitated as a result of the mechanisms? What might look like success for early EMR?

Sara Vaughan: Probably all of those things. How are we doing against the levy control framework budget? What is it looking like from a customer perspective? Are the cost recovery mechanisms working? I think there has been quite a lot of debate about how you can smooth those to the greatest possible extent for customers and we are not necessarily convinced that that has happened in the best possible way, but clearly that would be our intention.

In terms of the capacity mechanism, has the right amount of capacity been procured? Has there been overprocurement? Has there been underprocurement? How are we progressing towards our renewables targets and our decarbonisation targets? If you were sitting there in business there would be any number of KPIs that you might be measuring DECC against.

Rupert Steele: I think I would characterise success as the capacity auction clearing and setting a price for the capacity to be available in four years' time. I think we are now in good shape for that price discovery to happen and for that to put things in place for 2019. In terms of the CfDs I think what we are looking for is the writing of CfDs to utilise the budget at competitive prices that the Government has made available. It would be a shame if some quirk in the allocation meant that the less established technology pot failed to be properly used up, but let us get the contracts written, get the capacity auction done and then I think at that stage the Government can award itself at least a partial tick and then we will just have to see how it all flows out in years to come.

Jeremy Nicholson: It is going to be interesting to watch over the next couple of years what level of interest is there at the proposed strike price for offshore wind and so on. Does the market seem to be signalling that those strike prices are going to deliver the sort of capacity that is consistent with our targets? I am very much opposed to our 2020 renewable target, so I will not be losing any sleep about us not hitting it but I appreciate other people are concerned and formally speaking we have a legal responsibility. I am much more concerned about our decarbonisation targets and, in particular, the long-term decarbonisation and whether we are proceeding towards it in a cost-effective way. I think the auction process, in addition to whether it is a technical success or not and I have no reason to doubt it will be, it will nonetheless send signals to policymakers and doubtless members of the Committee about whether we are

apparently on track towards some of those targets and perhaps more so towards some than others.

Sara Bell: For me, success in the capacity market would be a fair and competitive auction that delivers security of supply at the lowest cost to customers.

Chris Elder: I would probably echo the point around competition. I think the other key thing is that the plant that is successful delivers in the delivery year. I think there is a risk, particularly with the first option, that there is so much plant there that essentially people could bid down to a price that does not economically work for them with their own run. Probably most importantly, by the time we get to the first delivery year essentially the capacity market and the energy market are the key routes to market for generators and we are not in a situation where we are just now where we are finding National Grid increasingly having to take bilateral action in the market to procure strategic reserves here and contract with individual plants there just to keep the system working.

Q169 Dr Whitehead: Any criterion on the relationship of new capacity towards rewarded existing capacity, for example, in terms of success? You could have a situation where you have lots and lots of rewarded existing capacity but no new capacity, which I think some people thought was the original purpose of capacity.

Rupert Steele: If the lowest cost solution for 2019 is to support the refurbishment of existing capacity rather than build new then that is what the auction will discover. If the auction discovers that some existing capacity is so old that it needs to be retired and it will be cheaper to build new then the auction will discover that and the beauty of an auction is real people using real money that is their own coming to a conclusion.

Q170 Dr Whitehead: What the auction discovers will be its own success.

Jeremy Nicholson: That is the point of a mechanism like that. You will not necessarily be able to define in advance, other than the overarching points Sara has mentioned about being competitively derived and at least cost to the consumer, but the precise mix between new build and current and between particular technologies is not something one can know in advance and we should try to avoid guessing what we think it ought to be.

Q171 Dr Lee: Maybe it is because I am unwell but I have sat through this thinking, "What a God awful mess this all is". To me the central question here is the role of the state in the energy system because the state is subsidising generation. It is now trying to control the capacity generation. Do you think that Ms Bell is doing us all a favour here by legally challenging? Not that we have any particular vested interest in Ms Bell being successful but it at least will cause a pause for thought because all I have heard today is just that people do not know and they do not know what is going to happen then and they do not know what is going to happen then and it is the uncertainty, the ignorance of people who are being asked to make decisions. The Government, and indeed, as I say, previous Governments with renewable targets that we will not meet, have put themselves in the position of having to make decisions to intervene in a market that is dysfunctional, to make decisions on the basis of ignorance.

I just wonder whether the panel, just as a general comment—perhaps we should all just pause, make a decision on what the role of the state is and then proceed, because at the moment we seem to be layering complexity upon complexity upon complexity and getting ourselves in such a mess that there have been times when the panel have been giggling this morning. Energy equals GDP. This could not be more important. Do you have any comments?

Sara Bell: Could I just come in? I completely agree with what you are saying. I think the problem is we do not have a proper marketplace in the UK. We do not have liquidity. If generation is sold on an open marketplace and buyers can come in and buy instead of relying on bilateral contracts behind closed doors, we would be in a very different position and that is fundamentally what my company is here to do. Ofgem have been trying to create more liquidity in the market but we need to do more. Personally, I believe that any generation contract above one megawatt should be sold on an open market.

Jeremy Nicholson: I was hugely encouraged by your remarks. The Energy Intensive Users Group was not one of those who were calling for intrusive intervention in the electricity market. I think we all recognise there is a market failure with respect to carbon emissions and we all have a range of views about whether that is best done through tax or trading and what is a tolerable cost to impose on consumers, but there is no reason why there cannot be a market-based solution to decarbonisation just as there is to the provision of electricity and I think the EMR process has been unnecessarily intrusive. Some of the objectives appear to be almost mutually contradictory but, nonetheless, that does not mean we cannot make some remarks about how the interventions that are being made might be slightly less intrusive and slightly more economically efficient than they might otherwise be.

As far as industrial consumers are concerned, we never wanted these interventions in the first place. We never called for a capacity mechanism. We never called for intermittent energy to be so heavily subsidised. We recognise there needs to be some form of carbon pricing and that is best done on a European-wide level rather than on a unilateral level and we would have liked the market to have sorted this out itself, but what can you say? Regulation of markets and intervention is like weeding the garden. If you are not attentive to it all the time it just grows and grows and grows and you end up having to put sticking plaster solutions to solve the unintended consequences of all your previous interventions.

Rupert Steele: We are very supportive of markets as a way of going forwards. There is, however, an issue with power stations. It is a very big investment and then you are producing a product that is traded on a market that at most times settles down to short-run marginal cost and provides no remuneration of the investment. Your investment needs to be remunerated either through sky-high prices at peaks or through a mechanism that pays back the capital in a controlled manner.

In many industries a kind of boom and bust approach is fine. You have capacity shortages for a particular product at some time, the price goes up and people respond by building. I think there is a question about whether people put a premium on the reliability of electricity supplies that means that a solution that is based on shortages to drive investment is not appropriate. Since privatisation there has been some sort of capacity mechanism in place almost all the time. There was one in the pool. There was a brief period when there was not one when quite a lot of generating companies became insolvent. There was then the free carbon allowances that had the economic effect of a capacity payment and now we have this one under EMR. It may be that some sort of mechanism to reward the capacity is an appropriate way of ensuring reliable energy supplies.

Sara Vaughan: If you pick up on Jeremy's point about intervention breeder intervention, and I think what we are seeing is as a result of intervention, from the time the Government agreed the 2020 renewable target that was going to have an inevitable impact on the market that had to be dealt with. On top of that the decarbonisation target was agreed. Decarbonisation on its own could have been dealt with through carbon pricing, but when you layer on top of it the fact that it has to be done through renewables then the modelling that we and I am sure others across the table did in terms of the impact that would have on the market suggested that changes needed to be made to the market we currently had.

Rupert has given a good explanation of the capacity element. We started off with a capacity element in the market. That was done away with at the time of NETA and BETTA. I think all the issues around the need for a capacity payment in the market would have come to a head earlier had it not been for the free carbon allowances. I am afraid once you start agreeing different positions in markets then you have to put in place new interventions to deal with it.

Certainly we as a company started from the position that we wanted to retain as much of the market and have as market-based measures as we possibly could to achieve the EMR result. The CfDs were not our first choice, but we can absolutely see why Government went ahead with them and we are now supportive of them. The fact that we are in both cases, both the CfD and the capacity mechanism, using auctions as a way of keeping the price discovery element in there I think is the right answer. We believe it will work. We are absolutely ready to participate in it and, as we have said earlier, I think we now just need to move forward with it.

Chris Elder: The UK is almost front-running this from an international perspective. We are seeing this development across Europe now as well. I think the need for a capacity market essentially is becoming clear, not just in the UK but elsewhere as well.

Chair: We have a private session to follow, so thank you all very much for coming in. It has been a very useful session indeed. Can I ask the gallery to clear as well because we are going to resume in private session.