



Energy and Climate Change Committee

Oral evidence: [Investor Confidence in the UK Energy Sector](#), HC 542 Tuesday 15 December 2015

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Members present: Mr Angus Brendan MacNeil (Chair), Rushanara Ali, Mr Alistair Carmichael, Glyn Davies, James Heapey, Matthew Pennycook, Antoinette Sandbach, Julian Sturdy

Questions 131 - 178

Witnesses: **Abid Kazim**, UK Managing Director, NextEnergy Capital, **Paul Barwell**, Chief Executive Officer, Solar Trade Association, and **Nick Boyle**, Chief Executive Officer, Lightsource Renewable Energy, gave evidence.

Q131 Chair: Thank you, witnesses, for coming. I would like to say at the outset we are in quite a big room here and you seem quite far away, so can we make sure we use our voices reasonably loudly and that we are communicating clearly with each other? Can I first ask the witnesses to state their name and organisation for the record, please?

Paul Barwell: Paul Barwell, CEO of the Solar Trade Association.

Nick Boyle: Nick Boyle, CEO of Lightsource Renewable Energy.

Abid Kazim: Abid Kazim, Managing Director UK for NextEnergy Capital.

Q132 Chair: Thank you very much. To kick off, we understand that DECC's decision on changes to support for solar PV is imminent. Perhaps before we get into detailed questions, could you begin by telling us what you hope will be in the DECC announcement for PV support? I know it is near Christmas but we do not want a Santa Claus—

Nick Boyle: Indeed. I do not believe in Santa Claus, unfortunately.

Paul Barwell: Do you want us to go in turn?

Chair: Yes, Paul.

Paul Barwell: Yes. We submitted what we called our £1 plan. In terms of the FiT outcome, that is an 8 pence tariff for domestic, scaling down to 4 pence for commercial rooftop. DECC's original proposals had about £7 million allocated over the whole of the three years, so that was a very substantial drop from what was originally proposed. We have requested £95 million over a three-year period, which would essentially add £1 to consumer bills by 2019.

In terms of the RO, we would obviously love them not to close the sub-5 megawatt market, but bearing in mind they have already closed the greater than 5 megawatt I think the anticipation is that is quite likely to happen. Most importantly, we do not want them to remove grandfathering and we do not think it is necessary to do a rebanding. That is a broad summary.

Nick Boyle: First of all, clearly I would want them to leave it exactly as it is, but living in the real world, even though it is Christmas, I have a feeling that obviously the changes have to be made. Certainly, from our perspective I think that it is realistic to assume that we have to live within the LCF budget and, therefore, our submission to DECC was about rather than increasing that budget refocusing it on the areas that require the support most, basically focusing on those areas that are furthest from grid parity so that we can drive those areas along with the large scale to grid parity as quickly as possible. That is obviously the FiT.

In terms of the RO, I suppose it is some level of certainty. Obviously, we have plans in place to continue with the RO until the end of March. That obviously should continue and beyond that point I think removal of the RO support for large-scale solar is something that the market is ready for.

Abid Kazim: As you know, we are an investor in this space so we acquire operating assets, which we consider currently to be extremely safe because of the regulatory environment they were already built in. Our interest is fundamentally in the long-term view of this market and we would like to start with saying that there is a solar sector. It is not going away because if they are constructed assets they have to be maintained and operated and run. Therefore, they are very safe for an investor like ourselves, but we are very concerned by what happens afterwards, the future, the new stuff that needs to be built to meet either COP21 or existing requirements.

What I would like to see coming out of the DECC announcements in the next few weeks is a reaffirmation of the safety of the United Kingdom as an investment destination. At this moment in time, we feel that has not happened. Therefore, if we could have that reexpression of safety, clarity about the future, consistency and continuity in the regulatory frameworks and models, that would give us a lot of comfort. All of the investors that we deal with, peers of ours as well as institutional investors that come into our fund or the funds that we manage, if we could give them back that clarity, consistency and continuity we would be happy.

What does that look like? It means that the mechanisms of regulation do not change. We have an RO; we have a feed-in tariff. The big debate is how much does it cost, not that they should exist or not exist. There was a flight path created by DECC a while ago. That flight path established the way in which we would eventually achieve grid parity. There have been lots of disruptions to that flight path, hence delay in grid parity as a consequence. We would like that flight path—admittedly it may be more of an aggressive decline—to come back. Fundamentally, all we want to do from this DECC consultation is to have that view that this is a safe country to invest in and that it will not be played with. If that can be honoured, then I think we are in a good place.

Q133 Chair: You mentioned peers in the industries. Speaking to some of them, they have mentioned caps per quarter. Is that anything that registers on your radar?

Abid Kazim: Yes, it is interesting. I do not buy into caps per quarter unless they are set up properly. It is a mechanism, admittedly, and you could argue that it allows you to manage the costs over a shorter period. The biggest problem we have is that there is a cycle. The cycle historically was an annual cycle. As tariffs went down, the industry geared up for it. A quarterly cycle would create a different type of cycle, which would be more frenzied. For an investor, frenzy is a bad thing. We would like very much there just to be the three words I keep repeating: clarity, continuity and consistency. That requires early-stage investors, people who do development. The life cycle for solar is not just me; I am right at the very end. We acquire assets that are operating and, therefore, they are accredited and we know what they do. The investment lifecycle starts at the beginning where a small or medium-sized enterprise, a businessman, uses his own money and starts development. They would, in this current proposal, lose a lot of money. It then becomes construction companies. It becomes consultants that support that. It becomes planning consultants. All of these people have invested to the point where I can acquire the assets post construction. A cycle that is quarterly does not necessarily support them. They have to get into a frenzy where it takes six months to get planning permission. It might take four months to get grid connection offers. It might take six months, three months, two months, to build something. If you are going through a quarterly cycle, those costs that they are going to pass on to us will go up. We do not want that.

Nick Boyle: It is probably just worth saying we are involved in the process from the very beginning. We own assets but we also develop the whole way through. It is a very low margin business that we are working in and in low margin businesses certainty is absolutely key, otherwise it is no longer able to raise the money that obviously is appropriate for a low margin business. The problem with the caps is if you are in a situation where you have a cap every quarter, you potentially run the risk of not having at the end of the process sufficient funds to pay for the investment that you have planned. Therefore, what happens with those caps is you never get to start the process in the first place. Unless you have an out you cannot start the development process and that is my concern with caps. I think caps are a bigger killer than the actual tariffs themselves. The tariff gives you certainty; the cap unfortunately, regardless of what the tariff is, means that you could end up in a situation where you have gone through that cycle, you have unfortunately fallen foul because you have come in after the cap has been depleted, and you are left in a situation where that money has then been wasted.

Q134 Chair: You are talking of frenzied activity leading to spikes and in the past we have seen big spikes of activity immediately before the feed-in tariff rate was about to be cut. Are we seeing the same thing now in the industry?

Nick Boyle: Definitely. Abid makes the point about the fact that certainty and continuity is absolutely key, and it is. The only time we have ever seen spikes is whenever there are kneejerk announcements because of some external force and then what happens is people are sitting halfway through or three-quarters of the way through a development process and then they realise that in order to make sure that the money that they have spent to that point has not been wasted they have to have a frenzied approach to getting things grid connected within the window. That is a completely inefficient way to run any business. However, it is an inefficient way to run any business borne out of the fact that there are external announcements because of some, as I say, external reason that means that we do things outwith the plan that we originally had in place.

Q135 Chair: Thank you. The Secretary of State has also said that solar will be cost competitive through the 2020s. First, do you agree with this? Secondly, something the Committee is concerned about are the minimum import pricing restrictions for the European Union on solar panels. Could you maybe expand on that second point as well?

Nick Boyle: Do you want to take MIP?

Paul Barwell: Okay.

Chair: Paul, away you go.

Paul Barwell: In terms of cost competitive, we had submitted nearly 18 months ago this “Solar Independence Plan”, which is basically a premise around—

Chair: It is on the desk in my office.

Paul Barwell: Yes, you read it, I am sure. It is very readable. The whole premise there is that we are on a path to be off subsidy by 2020. It was a five-year plan to get there and the existing proposals that DECC had with their feed-in tariff meant that we would still have landed up with quite an expensive system with high tariffs even at 6 or 7 pence by 2020. The whole idea was to redesign it so you accelerate the tariff reduction over a five-year period rather than the huge step change, which is what is going on now. We all support in the industry getting off subsidy and across all of rooftop we think that can happen by 2020. I think larger-scale solar is a slightly different animal. It depends on the wholesale price. We will be cost competitive with onshore wind by 2017-18. We will be cheaper than gas beyond that period of time. The difference is whether you are offsetting retail electricity price or whether you are offsetting the wholesale price.

In terms of MIP, yes, sadly, the announcement from the European Commission last Saturday was that they have decided to extend the review, which means we may have between 15 and 18 months of a review looking at anti-dumping and the minimum import price. While that review is going on, MIP stays in place and that will maintain costs to somewhere between 7% and 15% higher than they need to be. Of course, those costs are being effectively passed on to the end consumer.

Nick Boyle: Can I make one point that I think seems to be being missed here? We started the tariff regime five years ago. The whole point about a tariff regime, whether it is ROC or whether it is FiT, is to do two things: one, to stimulate a market, but ultimately to drive it towards grid parity, and you are talking about whether or not we get to grid parity by 2020. One of the things that is being ignored here or missed is that we started with a tariff of 33 pence on large scale plus the sale of the electricity price. Certainly, Lightsource Renewable Energy next year, and I am sure other companies as well, are going to be building plants in the UK without subsidy, large-scale plants. Now, admittedly they are not to be connected into the grid yet so we are not able to compete with wholesale prices, but we are able to build and connect into large electricity users and compete with their retail price. That is a massive statement.

Rather than us say tariffs, they are terrible, they have been a drain on the country, we should be saying well done because tariffs in this country have done what they were meant

to do, which is drive a market towards grid parity. We are not there yet in the true sense of the word. We are a couple of years away from that yet, but we are at a point where we can build large-scale electricity plants, hardwiring them into large electricity users, and be able to compete and beat the total all-in electricity price that they are paying today. That is an amazing feat to achieve.

Q136 Julian Sturdy: Can I drill down into the cost here a little bit? What is the percentage cost of the panels in an overall scheme?

Paul Barwell: If you look at the domestic market, a typical 4 kilowatt system would cost about £6,300 and that is all the evidence that has been gathered for DECC by Parsons Brinckerhoff.

Q137 Julian Sturdy: But the percentage? I am after the percentage cost, if that is okay, of an overall scheme.

Paul Barwell: The equipment cost within that £6,500 is probably £2,800, of which £1,800 or so is the panels. It is £1,800 on £6,500; what is that, 20%, something like that, 20% to 30%. It is a very dramatic difference now. Back in 2008, that 4-kilowatt system would have cost nearly £18,000, of which the equipment would have been £13,000 or £14,000. A greater part of this cost reduction has been the overseas equipment. However, now well over 60% of the installs relates to the UK, the UK supply chain, and that is why volume deployment is so important because to get those costs down to hit zero subsidy it needs to be the supply chain costs that are reduced, the market in the same.

Q138 Julian Sturdy: Okay, so we are saying the cost of the panels is 20% to 29%. Within that, what is the percentage cost of the minimum import price? What does that add?

Paul Barwell: You are talking about something like 10 pence per kilowatt. For a domestic system, it is about—

Nick Boyle: €120,000 per megawatt.

Paul Barwell: Yes.

Julian Sturdy: Percentage-wise, where does that leave us?

Paul Barwell: It is about 7% or 8% for domestic but for larger-scale projects it is more like 15%.

Q139 Julian Sturdy: So that is costing about 7% or 8% on top of the price you are paying?

Paul Barwell: No, that is already within the price. If MIP and anti-dumping was removed we would save 8% on the cost of a job.

Julian Sturdy: 8%, right, okay.

Q140 Chair: So you get 8% off the £1,800?

Paul Barwell: No, 8% of the whole install. In other words, your £6,500 would drop by about £300 to £400.

Abid Kazim: Just to add to that statement—I think it is quite important—we are talking about domestic installs versus ground based. The current price under the MIPs is 56 euro cents a watt. If you were to strip away MIPs, you would immediately be at about 41 euro cents a watt and that is a significant number. If you were looking at the flight path that it was going through before MIPs was introduced, so back in 2013, spring, we were being offered—I am going to pence now—panels at 31 pence a watt from the Chinese. That potentially is dumping so it was a bit high.

Q141 Chair: If I can just stop you there, just to keep the goalposts the same, we are talking about a 4-kilowatt installation and the panels would cost £1,800. Without the minimum input pricing, what will that £1,800 price be for us to keep on the same measurement?

Abid Kazim: If we were to stick with the same measurement, if the flight path had not been disrupted with the MIPs, I think it would be nearer £1,000.

Chair: It would be £800 off the price of the panels?

Abid Kazim: Potentially. If it was to be removed today, I think it is very reasonable to say between 10% and 20% of that price would go away.

Paul Barwell: Yes. MIP on a domestic install, it is about £380 less for a 4-kilowatt system.

Nick Boyle: It is worth saying that residential is much, much, much more labour intensive and, therefore, as a percentage of the overall the actual kit is less. For large scale, the interesting thing is everyone talks about the reduction in the kit price. The reduction has been at the same rate in terms of the actual install price. When we were building in 2011 at over £2 million, we are now building well below £1 million. The same proportion of kit to install cost has existed throughout, on large scale that is. We have driven down the prices not just in terms of the actual kit itself, albeit unfortunately buoyed up by MIP artificially, but we have also driven down via better logistics management and basically driving down via economies of scale the price of install.

Q142 Chair: There is quite a lot of interest. Just to clarify this, on the £1,800, you are saying there would be £380 off the price of panels, about 20%, yes?

Paul Barwell: Yes, for a domestic system.

Q143 James Heappey: I wanted to ask you the same question using a different measure. You say 2020 for grid parity on current price projections. If there were no MIP, when would the solar industry achieve grid parity?

Paul Barwell: We are assuming MIP will go at some point in 2017. Our calculations that we put forward, that £6,500 would approach £4,500 in 2020 and that is the point where we think we can operate without a generation tariff.

Q144 James Heappey: Indulge me just hypothetically. If it disappeared, if it did not exist right now, how much sooner would we achieve subsidy-free solar industry?

Paul Barwell: We have already assumed it is going to be going in 2017 so we are assuming that it is going to be—I think the worry is if it maintains MIP and AD that could go on for another five years and that really will limit the ability to get to zero subsidy.

Nick Boyle: The 2018 figure, let's say, if that is where we believe we can get to grid parity, could be 2020 if MIP continues. If you want to ask it the way you did, 2020 is when we will get to grid parity if MIP stays, but we will bring that two years forward if it does not stay.

Q145 James Heappey: If the EU continues to protect the market, your forecasts for grid parity become obsolete?

Nick Boyle: Correct.

Abid Kazim: I think there is a point there that is being missed. Grid parity is not just material costs, it is also the cost of capital. We were invited here to talk about investment in this sector. If we change the cost of capital negatively, and I made this in my submission to you earlier, then grid parity could take a very, very long time. Fundamentally, if you look at the European market and say, "What can we learn lessons from?" one of the lessons we learnt is that when you get to volume costs come down. That is fantastic and that happened in every single country in Europe. We as a fund predict a very happy place for us when we get to grid parity and we are driving to that.

However, if the cost of capital goes up, then the delay to grid parity occurs as well. Fundamentally, right now in European states you are looking at return on equity north of 10%, 12%, 14% in southern European states. If we were ever, god forbid, to get into that territory, it would have a massive impact on costs. The biggest trick we need to have right now is that consistency thing. Removing MIPs would be extremely helpful for people upstream from us, those who are building plants. Yes, they would make more profit or they would be able to reduce costs, cover their risks, but as an investor what we are saying is we would like to acquire those plants on a basis of decreasing cost of capital over time. For us, that means having in place those measures that allow us to have a sensible level of predictability.

Anything that we do is based on weighted average cost of capital, is based on discounted cash flows. It is never perfect, but having a bet that this is the revenue stream you are going to have over the next 25 years allows you to then buy an asset or fund an asset. Currently, within the consultation processes that we are looking at, that has become less predictable. It has become so varied that we cannot bet on plants. Today, people are coming to us and saying, "Can we build you a plant? If we built you a plant, would you buy it?" and I am saying, "Don't bother building me a plant today". Because even though you might be able to build it at a fantastically low cost, I cannot guarantee I am going to be able to buy it because I do not know what the regulatory regime is going to be next year. The concepts of grandfathering have been introduced for new assets. Old assets are safe; new assets are not, potentially. Therefore, our cost of capital begins to go up more and more and more. Achieving grid parity in 2020 assumes that we are buying it at a cost that makes sense because fundamentally somebody has to pay the bill. If we cannot buy it at a cost that makes sense anymore, you cannot achieve grid parity.

Q146 Glyn Davies: Can I come back to the minimum import price because it is interesting me today particularly? I think in our minds, and probably in a lot of our minds, is this some sort of a market protection or is it dumping? We use the term anti-dumping mechanism quite casually in conversation, but is it really anti-dumping or is it just market protection? You are in a better position perhaps than we are to make that judgment.

Paul Barwell: Market protection I would say. The evidence that we have now, which we are going to be submitting to the European Commission, is those companies that have to sell under MIP have to follow very, very strict rules, but there are some companies that are backed by EU ProSun, which is the body that has been submitting all these requests to the European Commission. You can now buy that equipment cheaper than you can under MIP, which shows how absurd this whole process is because you have to go through a lot of configurations to buy panels through MIP and you can just go to the European market and buy it cheaper. You are artificially inflating the price, as Abid has pointed out, by nearly 10 euro cents right now. It is absolutely market protection in our view.

Q147 Rushanara Ali: Can you all say a bit more about the impact of the proposed changes on the supply chain? You have already mentioned a number of barriers and uncertainties that have been created, but could you possibly illustrate on that?

Abid Kazim: Let's start with understanding the supply chain from the beginning. It starts with an entrepreneur saying, "I would like to build a solar park". It has been that. In this industry in the UK it has been small businesspeople starting on the basis of saying, "I will go get planning permission, grid connection rights. I will go get the land, et cetera, and I will create a bundle that can then be constructed". That can take six months, a year, of investment by the small businessperson to get to that point. Recently, larger companies have got involved but historically and even today subcontractors are small businesspeople. That can take a year.

At the end of a year, worst case scenario, it is ready for construction. You order the materials. You start construction and that can take three months, it can take six months. It has gone down massively from the old days when it took a lot longer. Then you are in a process of somebody like me coming along and saying, "I would like to acquire that asset post construction and run it for 25 years". In the act of running it for 25 years, I will optimise it. I will make it so that it has capacity management and all that stuff built into it over time. That can take anything from six months to 18 months. It is getting better. It is getting shorter and shorter and shorter. It is linked to grid connections. It is linked to planning permissions.

Most of this investment that happens happens early, so there is decreasing amounts of risk. By the time we get involved we can price the capital properly and say 25 years forward it is 7% to 9%, whatever it might be, but the developer who starts at the beginning is pricing it based on whether or not he can sell his asset. We saw an example in May 2014 where the day before we thought that there was going to be time to build these assets and get them through planning and on 13 May 2014 the Government announced a consultation saying that anything above 5 megawatts for ROCs would no longer benefit from ROCs. Two weeks before that, we were able to look at asset prices at £80,000 to £120,000 a megawatt. That is that package that is ready to build. A week after, two weeks after, those prices had gone from £80,000 to £120,000 to £200,000 to £300,000 a megawatt. They had more than doubled because that early stage developer was now looking at bankruptcy. He

was saying, “The assets that I am ready to sell now may be the last assets I ever sell. In fact, all the money I have invested in all these other assets is now wasted because I will never get it out”.

Q148 Rushanara Ali: What would your estimate be of the overall cost of an announcement like that?

Abid Kazim: Well, if the total cost of an asset is £1.2 million for me, the package for ready to build, the permissions, the rights, they represent anything from 8% and they went up to 20%, so either the supply chain got squeezed or I could not buy or my price went up. Making announcements that then take forever or changing that flight path, as what has been going on for the past few years and is happening today, can add 10%, 20%, 30% in extreme cases, to the cost of an asset. We have seen the 30% only recently. About two months ago, assets that were originally priced a year ago at £80,000 to £120,000 a megawatt eventually were ready to build; large assets, 30 megawatts plus, 50 megawatts in a specific case. A German had to come in and buy those rights for nearly £400,000 a megawatt because they benefited from the original grace period, they were ready to build and they could go build it because they had people they had to feed, staff they did not want to fire. They paid three times as much for rights and they did that because the developer was looking at the end of his business. He was going to—

Nick Boyle: There is also supply and demand. If you are in a situation where you have a finite amount of assets and a large pool of money that has been raised to buy those assets and not surprisingly the developer is saying, “Hang on a second here, I have something that everyone wants; therefore, I am going to hike the price”, that is an artificial hiking of the price caused by a changing of the rules. Again, built-in inefficiency simply by external forces. As Abid says, anything that comes in externally and does not allow us to continue on the flight path causes unrest, increased risk and, therefore, the drive towards grid parity becomes longer.

Abid Kazim: Just to add to that last point to that one, today is a big example. Today we are looking at the Minister of State talking about new gas power plants and we are looking at those gas power plants coming in potentially under what is called the capacity mechanism. Over the past six months, the grid company has been going around the market—the market is about buying and selling electricity on the wholesale prices—and making deals on the capacity side with generators. As a consequence, the market is now not a good indicator of what the real cost of wholesale electricity is. When we move to grid parity, we need to have a market that we can predict. If the market is being undermined by continued interventions, it is no longer possible for us to predict that market and set a cost of capital and invest in this country. Fundamentally, as investors, we are the investment manager for the NextEnergy Solar Fund, which is dedicated to the United Kingdom. We created that fund to dedicate money to the United Kingdom, but it goes and gets money from pensioners, it goes and gets monies internationally. Those international investors are saying, “Do I invest in renewables? Do I invest in energy? Do I invest in coal? Do I invest in the UK or do I invest in India or America?” We would like them to invest in the UK.

Q149 Rushanara Ali: What do you think our Government needs to do to rebuild confidence? You have mentioned some of the themes earlier on about consistency and clarity. How confident are you that you are going to get that later this week when there are some announcements? Would you say that the Government are cutting their nose to spite their face

given that some say some 20,000 jobs are affected by some of the recent changes in an industry that has led to investment of over £3 billion?

Abid Kazim: Actually, the investment is much higher than that.

Rushanara Ali: Much higher?

Paul Barwell: It is probably about £12 billion now.

Nick Boyle: Our company alone has done £2 billion so I sincerely hope the rest of the market is doing—

Rushanara Ali: Okay. I am quoting the Friends of the Earth's number.

Abid Kazim: Let's be clear. The early stages of this industry required a lot more investment than they do today. Just to answer your question, I think very much the Government are cutting their own nose. They are having a laugh, basically. The whole concept of consistency, of an integrity of a marketplace, is what we—

Rushanara Ali: Quite a lot of investment to have a laugh with.

Abid Kazim: Yes, it is a lot of money, you see. Let's be thinking about this. 10 gigawatts of solar represents something in the region of 10% to 12% of the generation base of this country today. We are an 85 gigawatt country. 10 gigawatts of solar, if you take into account that construction started in 2009, is anything north of £20 billion of investment coming into this country. It is a lot of money. Early solar cost £2,000, £3,000, £4,000 a kilowatt. Today we can talk about it being £1,000 to £2,000 a kilowatt depending on where we are looking at. It was a lot of money. International money came into this country. A lot of it was raised here through tax efficiency schemes, which are now gone. EIS monies, VCTs, they are gone. In fact, now if you raised an EIS fund, forget feed-in tariffs, you just cannot invest in energy generation at all. It was international money coming into this country as much as anything else. International money says, "Do I believe what is being told to me?" By definition, when you have an announcement you have clarity, but if you are then saying, "I am investing for 25 years and my bet is today. This is the job I am doing today so I am betting based on what I see today, not betting on the next Government or the next Government after that. I am betting on what I see today". If I am betting on what I see today for the next 25 years, I need to feel very, very comfortable that that bet is going to be honoured. Now, I am not asking for certainty because certainty is ridiculous. What I am asking for is clarity, consistency and continuity because that just means that it is my bet, not your bet. Certainty would be your bet. There is no point in me putting money in.

Nick Boyle: Can I make one point, sorry? It is not all international money, just to be absolutely clear. We last month completed on a £284 million M&G—which is a Prudential pension fund—institutional bond, the largest ever sterling-denominated institutional green bond. There is definitely a big appetite for these assets. However, that was on assets that we already held, obviously not assets that we are now looking at because now there is the uncertainty brought in. There is massive potential among our own investors, our own pension funds and our own Mr and Mrs Smith to invest in these assets

because solar is a very reliable generator of electricity. The sun comes up, the sun goes down, and it is really, really predictable. That is something that should not be ignored.

Abid Kazim: Just to go back to the question, old solar, very, very safe. Solar that was built, already constructed, already accredited, this country is the safest place in the world to come to, in my opinion. That is why we raised the fund here, but new solar—

Q150 Rushanara Ali: Just quickly, are you saying that Britain is now the least attractive? Where does it fare in terms of other countries given the changes—

Abid Kazim: It has actually gone down. My apologies, it has gone down in the attractiveness indexes that are published and there are currently risks and increase in the cost of capital across infrastructure.

Nick Boyle: It is number 11; it was number 8 for a long time.

Rushanara Ali: Sorry, say that again?

Nick Boyle: It is now number 11, apparently. That is before the announcements.

Q151 Rushanara Ali: Okay. Just a final point, which is about feed-in tariffs. In 2001, many said that this was going to devastate the industry, and yet it was not as devastating as people had predicted. What is different about the recent announcements?

Paul Barwell: I can answer that question.

Nick Boyle: Go for it, Paul.

Chair: A brief answer, please.

Paul Barwell: A quick answer, okay. 2011 was the announcement and, first, a lot of the industry did support those cuts because there was not a degression mechanism. There were a number of people that said it would decimate, kill the market, et cetera. The reality is there were a lot of very good companies that did go by the wayside, that did lose jobs. If you look at the deployment graph, we have dropped very, very substantially from 2011 and it is only now that we are in a steady-state growth. When they put the impact assessment out in 2012, we have not been overdeploying in solar at all under the feed-in tariff. It has been underdeploying, if anything. Yes, there was a rush that led up to that 2011, but it has taken three years to recover to where we are today. That is all about investor confidence. It is all about the end consumer being told, “The tariffs have gone. There is nothing left”. We are also trying to manage this process a lot better than 2011, but what we are asking for is not a cliff drop. It needs to be a gradual glide path otherwise it is going to be impossible for those installers to sell solar to the end customer if they do not believe that there is a mechanism in place to take them to the next three or four years.

Q152 Julian Sturdy: I just want to get back to the cost. What does the minimum import price cost the industry a year? You must have a figure. What does it cost the industry a year? It surely does cost the industry a large amount of money.

Nick Boyle: I will give you exact numbers. I do not know how much we install a year. However, we were buying pre-MIP at €420,000 and we are now having to pay €560,000,

so €140,000 multiplied by the number of the installed capacity. That is the answer. Now, not everyone can buy at €420,000—we are the largest buyer in the UK—but they are certainly able to buy at €450,000 or €460,000. It is at least €100,000 per megawatt per annum, so it is an extremely significant amount of money.

Paul Barwell: I think you are after a big figure number. Since the MIP has been in place, we have deployed nearly 6 gigawatts in this country and nearly £600 million of extra cost has been applied because of MIP and AD. That is how significant it is.

Q153 Matthew Pennycook: I just want to shift the focus slightly on to retrospective changes, which is contested in itself. The Government would probably no doubt argue that some of these changes are not truly retrospective, but I wanted to get your opinion on whether they have been. You can separate out the removal of the climate change levy from the grandfathering of the RO; they are different. What are your concerns both in regards are these genuine retrospective changes that have been damaging to investor confidence for the reasons we heard or is it more, particularly in terms of grandfathering, the fear that they are the thin end of the wedge for things to come?

Nick Boyle: Are you referring to the likes of levy exemption certificates, grandfathering?

Matthew Pennycook: Yes, and the grandfathering of—

Paul Barwell: Levy exemption certificates, as far as the industry is concerned, are retroactive because investors can only plan their projects based on what they know right now. They do that in good faith knowing that there is a 20-year lifespan, which is where the grandfathering comes in. If you remove that levy exemption certificate, that has basically increased the cost of all those projects by nearly £5 a megawatt hour. It happens to all existing projects as well. The grandfathering is where we hit this term, “thin end of the wedge” because that is the most important aspect for all forms of infrastructure to know that when you invest in a project and you are given a tariff for a lifespan, particularly of a structure because it is 20, 25 years plus, that they need to know that that is going to be in place. Can you imagine the nuclear industry if they were not guaranteed that strike price for 35 years, if there was any risk whatsoever that it would be removed after 15 to 20 years? All of a sudden their weighted average cost of capital would just rocket, and it is the same really with all the renewables sector. They need to know that they have it in place and the investors are now being very directly impacted by these proposed changes. If they are going to remove grandfathering, what does it mean for the remaining projects out there? The cost of capital is very expensive.

Nick Boyle: I think there are some other more subtle ones that will not headline but if you are running a discounted cash flow, which is essentially what we are, we are bringing back to net present value future cash flow so everything is taken into account. One little subtle one that no one seems to talk about is the capital allowances. Solar capital allowances allow for an 8% reducing balance, solar alone. Every other technology, wind and all other technologies, is allowed an 18% reducing balance. That means you can write off what you have spent at 8% per annum on solar but at 18% accelerated with other technologies. That might not sound like a big message, but if you run a financial model that has a significant negative effect on the actual value of the asset. There are a significant number. We have the grandfathering, accelerated depreciation, LECs, CfDs—we were expecting them;

where are they—et cetera. There is an element of death by 1,000 cuts and not all of the ones that are headlined are necessarily the ones that are most damaging.

Abid Kazim: Paul answered the question so eloquently I do not need to go back into it, but I will say the thin end of the wedge bit, it is not just renewable energy. It is not just energy. It is roads, it is trains, it is hospitals, it is schools. If a Government sets a precedent that it will build into legislation the right to make retrospective, it is overturning hundreds of years of this country's credibility. Nick is absolutely right, it is not just international money but it is international money because M&G could have invested anywhere in the world to be benefiting its pensioners that put money into it. I have case studies where Barclays put money into America but did not put money here five years ago, four years ago, large sums, \$3 billion to be precise. The attractiveness of a country is based on the actions of its Government. Interventions, if they are negative, have a very long-lasting effect.

It takes 18 months to raise money. We need to be certain we can deploy it before we even start the process. If you have a total demise of an industry for two years until grid parity happens miraculously by itself, you have no employment base left to go rely upon. You have no supply base left to go rely upon. You do not even have stock to go build. You do not have the money because you start the process of raising money when you have enough confidence that it can be deployed. Grandfathering is more than just the thin end of the wedge. It is a very clear message that the Government are willing to toy with credibility. If DECC does that, it affects every single industry. We are not worried about existing investments because this country has a long track record of not being retrospective, but the concept of discussing grandfathering in this consultation says, 'We are going to be so clever that we are going to introduce retrospective change in legislation, that you can spend £100 a day but because the costs have gone down five years later we are going to change your tariff based on five years later. How do we spend the money?'

Q154 Matthew Pennycook: We do not know what is going to come out of the consultation review but grace periods, exemptions and grandfathering, all of that—

Abid Kazim: Is retrospective.

Matthew Pennycook: But you would say that does not go far enough. Are you saying the damage is already done by the mere mention of, the mere putting it on the table—

Abid Kazim: Yes. I have a case study where an institutional investor basically called the Government a liar and if they have lied once, will they lie again?

Q155 Matthew Pennycook: You have taken me slightly off my train of thought but what is your take on why solar and other renewables are treated differently from other forms of energy generation like nuclear? Why would this never happen in nuclear?

Abid Kazim: Interestingly it is big centralised expenditure. Nuclear is a big project. You are spending, £12 billion, £20 billion in one location, creating X number of jobs in one location. Solar is a prime example of jobs distributed across the country. 2,500 jobs have gone since the consultation started and we have not even got to the response yet. As a consequence, what we are looking at is 30,000 jobs potentially going, not just in the south-east, not just where there once was a large steel mill; we are talking about in the north-

west, the north-east; we are talking potentially Scotland and Wales and Northern Ireland. All of these jobs are at risk. Now, there is some tail. Scotland has said they are not going to touch grandfathering, which gives us a lot of good confidence about investing in Scotland. Northern Ireland has not been touched yet but grandfathering may be taken away from there. But there are 30,000 jobs across the country. There is not one place, it has not got one big headline, and as a consequence those communities where people work, their families, are all affected by this. This is why I am here, because I can continue to invest our investors' money in existing solar in the UK for a very long time, very confidently and with good results for our investors on existing solar, but the changes are about the future. It is about this country's future and infrastructure is required for energy and other things and it is about the jobs that are affected. It is the thin end of a wedge and it affects a lot of people. It is because it is distributed and because it is small businesses.

Q156 Matthew Pennycook: Mr Boyle and Mr Barwell, would you agree with that?

Nick Boyle: I think if you asked certain people in DECC the question they would say it is because it is baseload versus uncontrollable. However, let's be absolutely clear. If somebody pays me £92.50 for 35 years I will give them as much baseload from solar as they want because solar with a battery produces baseload in exactly the same way as nuclear does. We were lucky enough last year to win one of three CfDs won by solar, and we won that at £79. So we will receive £79 for 15 years. It is not baseload but nuclear will receive £92.50 for 35 years. Now, please, if you give me those extra 20 years and that extra money, I will build you as many batteries as you want. Let's be absolutely realistic, the answer will be because it is not baseload, but it is not the truth.

Paul Barwell: The comment of the CEO of the National Grid on solar is, "That is the baseload on people's roofs". The whole concept and the discussion around baseload is very outdated. I think the Government need to rethink their whole energy policy and look at what has happened in Paris and look forward. Just as Nick says, you add wind, solar and storage together and you are getting very close to baseload, but do you need baseload? You need to be matching demand profiles. There needs to be a whole rethink around energy infrastructure. I think one of the reasons Government have not really been listening to what we would call smaller-scale electricity generation is because we are a large number of small SME companies versus several large companies who have influence within Government and that is what we are trying to change.

Q157 Antoinette Sandbach: I understand how grandfathering protects investment but of course the levies are being paid by consumers on their bills, so effectively some of the poorest people in the country are subsidising your profits. In those circumstances, don't you think it is right to have regular reviews on FiTs, given that you are asking people, potentially on very low incomes, to subsidise the kind of investment you have been speaking about, Mr Kazim?

Abid Kazim: That is a great question. I do not think it pans out that way though. I will tell you why. What we have seen in the European market where solar has been deployed very much more extensively—38 gigawatts now in Germany—it has resulted in much reduced wholesale prices, so the generation cost of electricity has gone down. If you look at it long term—

Q158 Antoinette Sandbach: Can I just interrupt you? I accept that. But the grandfathering protects for example that 45 pence per kilowatt that was a few years ago. That level of payment seems very high. That is where you get your return from in respect of the cost of generation.

Paul Barwell: The cost of the install is an upfront capital cost. It has gone. That might seem a large amount of money, that 45 pence versus the 12 pence now, but the return on that investment was about the same then as it is now. The fact that these tariffs were introduced and the fact that the industry has grown and helped force those costs lower, with a declining tariff, is a good thing. Having that stability, as we discussed earlier, will help bring down those costs and will help reduce the amount of money added to people's bills. In terms of the long-term picture, renewable energy with its zero cost of fuel will start lowering the wholesale price, just as Abid was pointing out, and there is all the evidence that we have within the UK and overseas. This is an investment the Government should be making now for that end consumer because that will yield its return later on. Those consumers will get lower bills.

Nick Boyle: The consumer looks at the pounds, shillings and pence of the bill. They do not necessarily look at how it is made up. As long as it is going down, whether or not that is an extra for FiT and ROC but the overall wholesale price is down and therefore they are paying less, that is the only thing that is relevant to them. That is the point that Abid makes and that has been the experience in Germany.

Q159 Matthew Pennycook: Very quickly, gentlemen, because we are pressed for time. I want to get some sense of how the changes that have been proposed—again, we do not know what will ultimately be introduced—compare with retrospective changes made to feed-in tariffs in other countries? Are they as damaging? What was the long-term impact of changes in places like Italy and Spain on investor confidence?

Abid Kazim: The Italian and Spanish model is a really good one to look at. Those markets are now settled and are pretty good investment opportunities today. However, the cost of capital in those countries is north of 10%. If you are buying a solar project or a wind project in places like Italy and Spain, they are relatively safe projects now because they have been through their disturbances, in fact they are very safe projects now, but those disturbances led to assets historically—because they have had disturbances all their democratic lives in different infrastructure—at 14% to 16% on equity. What we are looking for in this country at NextEnergy Solar Fund we would look for 7% to 9% and in fact we would drive that down on a leveraged basis so it would be an even lower cost of equity. The cost of equity in this country needs to come down significantly to 5%, 5.25%. That is where we like to get to and that is reasonable and sensible. But those countries that have had historically disturbed markets because of the ability to do retrospective change pay a massive premium for capital. If you are looking their current economic state, would you say Spain is doing particularly well coming out of this recession? People are not putting money into that country because they are scared about what will happen to that money tomorrow.

Nick Boyle: If your question is about what did it do to the investment return for the assets that were built, that was the answer. What did it do to new deployment of solar? It killed it stone dead and I will give you the figures. Absolutely stone dead because you are in a situation where retrospective legislation makes people think, “Hang on a second here, that

is not safe to invest”. I don’t know what the Spanish market did last year, but was it even into single figures of gigawatts?

Paul Barwell: The UK has got the greatest deployment across all of Europe right now and that is why it is an interesting country for people to invest in. All the other larger countries, Spain, Italy, have pretty much died a death.

Nick Boyle: I think that is a really important point that again we seem to miss. Maybe it is a Northern Irish expression, but I think the UK has played a blinder whenever it comes to what they have actually paid for the tariffs and the solar that they have. We are up to nearly 10 gigawatts. If you compare the price that we have paid for that in terms of tariffs on our bills, compared to maybe Germany, or Spain or Italy, which are the extreme examples, we have paid so much significantly less because of the fact that, in an organised way, we drove the market. The only negatives to that were the knee-jerk reactions and the changes, which unfortunately meant that the prices were driven up again. We have done quite well and that is something we should not lose.

Q160 James Heappey: You have put 2% as the sort of political risk premium in your submissions to us. Can you explain exactly how you get those figures?

Paul Barwell: I can do it and Abid can cover. Energy UK has stated in one of its reports that there needs to be nearly £200 billion of investment in energy infrastructure, of which about £45 billion has already been spent. If you take that remaining £150 billion and apply that 2% to it, that is how you get the additional cost of £3 billion.

Your question is how do we come up with that 2%. If you look at the majority of investors in this space, they are basically investing all over the world. There is a lot of transactional evidence, particularly out of Spain and Italy, that show that after they made their significant cuts and they did their retroactive changes—and the retroactive is the key point here—that transactional evidence suggested it was going to be an additional 2%. In other words, that is something like a 25%, 30% increase to that cost of capital. When you borrow that amount of money to invest in infrastructure you are borrowing it over a 20-year period. That is why 2% times that £150 billion equates to nearly £3 billion for every year that you are earning that money. That is a huge cost and the only way that cost can be recovered is effectively back through consumers because that is where the money—

Q161 James Heappey: So you have fixed all other variables and you have said you are isolating here a cost for political risk.

Paul Barwell: Yes.

James Heappey: You have made a comparison presumably with other sectors in the UK economy for what the shenanigans of this place means to them.

Paul Barwell: Yes. It is specifically looking at how the cost of capital changed in Spain and Italy and looking at the transactional evidence. In other words, what was the required additional premium for investing in projects afterwards?

Q162 James Heappey: What is the political risk to an investor in the automotive industry in this country and the political risk to an investor in rail infrastructure in this country?

Abid Kazim: There are international standards that are published but they never tell you the entire picture, because an investor needs to make a decision based on how his equity is first raised and the promises he made to the markets to raise that money. Therefore, how you would deploy that money needs to keep the promises you made.

Automotive is very different to long-term infrastructure. When you build a factory you expect it to run for five, 10 years but a lot of it is robotics now; you can dismantle it and move it somewhere else. Automotive works very differently to infrastructure. Infrastructure comparisons make a lot more sense because if I build a road I would like it to last, subject to maintenance, for a very long time; as I would really like a hospital to last for a very long time; as I would a nuclear power generator or anything else. Solar is exactly the same. We would like to deploy monies in solar and make it last for a very long time and in fact it needs to be for ever, if it were possible—I am not saying it is—because the technology will last 30, 40 years as long as you maintain it.

That time horizon is what we need to reflect. Therefore, it is what you would say to your investors. “I am going to continue to invest in this place but I will do so by paying you more money. How much more money would you like, sir, to continue to invest in this country?” and 2% seems to be where the current shenanigans are leading us to. I am not saying that is where it is going to end. I am hoping that it reverses because the end result could be a lot worse. It could be like Italy and Spain.

Q163 James Heappey: So 2% is the political risk premium for infrastructure investments, full stop. In this country it is not necessarily through the fluctuations in policy in DECC; it is a similar political risk premium for the building a road or electrifying a railway?

Abid Kazim: That is the risk. That is the thin end of the wedge conversation we had.

Q164 James Heappey: I want to be clear, therefore, that the 2% you refer to is not a product of DECC policy; it is the political risk premium generally for investing in infrastructure in this country.

Abid Kazim: That is not what I am saying. I am saying there is political risk already built into the returns we get. The 2% we mentioned is specifically as a consequence of what is going on by DECC.

Q165 James Heappey: This is a 2% additional risk premium above the normal political risk of investing?

Abid Kazim: Yes. If you look at investment rates in countries like Germany they are significantly lower than investment rates in this country, as they are for Japan, for infrastructure. There are stories of 2.5% to 3.5% equity returns on long-term infrastructure in countries like Japan and Germany. They are not that here. DECC talks about a 4.45% return on equity; actually it is 7%. So you already have a risk premium built in and then you have to start talking about the additional risk premium of investing in a new one.

Q166 James Heappey: We are going to come later on to the return on the investment so we might just park that for now.

You say that additional 2% political risk premium equates to a 25% to 30% increase in funding costs, which you—Mr Kazim particularly—have then equated in your submission to a £130 per annum increase in bills. Can you explain exactly how you arrived at that last number?

Abid Kazim: It is distributed. The cost is £3.14 billion based on what Paul talked about earlier on and it is distributed across the value chain, because the value chain of buying electricity in the household is generation, transmission, distribution and supply. That cost will be picked up across that value chain in terms of increased cost of capital and it will hit the bill at the end because somebody needs to pay that bill. We are not talking about subsidies but about levies and that levy will hit the consumer because they are having to pay for the extra cost of generating, the extra cost of changes to the transmission system, and the extra cost of distribution because we are updating the grid. The supply companies are saying, “We are paying for this. Fundamentally we are paying for it before we pass it on to the consumer. We are going to add something to that as well, thank you very much”. By the time it gets down to here, the consumer is saying, “Gosh, I’m having to pay a lot more”. So what we are saying is £3.14 billion in that £140 billion, £150 billion is more cost that has to be spent, and somebody has to pick it up and that is going to be picked up by the consumer.

Q167 James Heappey: But this is a cost associated uniquely with solar.

Paul Barwell: No. It is energy infrastructure.

Abid Kazim: It is energy infrastructure as a whole. If I was going to invest today in CCGT gas I would say to myself, “Am I feeling confident that the capacity mechanism and/or other regimes that have been set up for grid costs, not even subsidies or levies, but grid costs and supply costs and all those other costs are regulated in a way that does not penalise me tomorrow—capital allowances and VAT and all those other things?” I need to feel confident that we have a relatively good flight path for that investment. It is the same when I move out of energy—we are just talking about energy today—I would have the same conversation about a toll road if the Government were to go down that route, or an airport.

Q168 James Heappey: I understand your frustration with us being sympathetic to consumers over what their bills may be, but I want to be clear about this political risk premium. That has not yet acted as a barrier for people being willing to invest in solar and energy infrastructure in this country and there are other advantages of investing in this country beyond the uncertainty that we generate, which thus far has meant that we have remained a relatively good market to invest in. So, why the concern?

Abid Kazim: Let’s be very clear. Nick said it earlier on. The Government have played a blinder. It started on a basis of a clean flight path that allowed investors to understand where tomorrow is going to go and costs were reduced through volume. So it did a fantastic job up until now. Anything that is accredited to date, built, connected to the grid, been accredited, is a fantastic investment; fantastic long-term investment in this country and we will continue to invest in that at a lower cost of capital. But going forward what you are looking at is new investment and these things that are happening today affect not so much the past, because this is still Great Britain; as a nation we don’t do retrospective

change. Therefore, we are not worried about past investments. We are worried about future investments. There is some bleed-through, by definition. If future investments become much more volatile everything will be looked at with the same pair of glasses. Let's accept that. But we are worried about future investments. We are worried about the next solar park or the next energy generation plant, the next infrastructure grid investment, the next road. So that is why it is the thin end of the wedge. That is why it is so important to hold firm and say the blinder that we have played, the thing we set out to do, we have succeeded in doing. Let's not kill it now it is delivering what we wanted to deliver. That is the consistency bit. That is the bit that we would look forward to when we make a bet. We would say that you have honoured those promises and you have stayed consistent.

Q169 James Heappey: But that blinder has proven unaffordable for the Exchequer. That is what this all boils down to.

Abid Kazim: It is not, though. Let's be very clear. It is not the Exchequer. The levy control framework is a framework that defines a notional payment that could have been taxes but it has been passed to the consumer through a levy mechanism. It is not taxation; it is levy. The net cost of that levy needs to be taken into account, not just the gross cost. The net cost says, "Have I reduced the cost of generation in the investments that we have made so that when you add the levy to the wholesale prior prices and you take into account the way it is delivered to the consumer, which is basically when business needs it the most—midday—does it reduce the net cost at the end of the day?". That is not taken into account. The levy control framework is a levy and that levy potentially is equalised through the whole mechanism.

James Heappey: Mr Barwell is chomping at the bit.

Abid Kazim: He is.

Q170 Chair: I think we are moving into the area that we were planning to move into anyway. The levy control framework is a major area that perhaps the National Audit Office should have a look at. We have heard calls for clarity about the underlying assumptions that are used to calculate how much money is left under the levy control framework. What exactly do you think is missing from published documents and what would the Government need to publish in order for investors to be satisfied?

Paul Barwell: So you are talking about clarity around the underspend on the levy control framework.

Chair: Yes.

Paul Barwell: We issued a Freedom of Information Act request to get more information and unfortunately the offer was declined. We were told it was a manifestly unreasonable question and could have the potential to affect the confidentiality of commercial information. So, sadly, we are none the wiser in terms of the LCF overspend. We do know that one third of it relates to the wholesale price, one third of it relates to increased load factor for offshore wind, and the remaining amount apparently relates to the overspend on FiTs, which again we would dispute, depending on your view and your perspective under the feed-in tariff. Unfortunately the levy control framework is not currently going to be fit for purpose if they continually lower the forecast on the wholesale electricity price. With

crude oil trading below \$37 a couple of days ago, the long-term picture of the wholesale price is going to continue to drop. That puts an additional burden on the levy control framework, which means projects that might be in the pipeline may also be at risk. We need to have clarity around what is within the levy control framework; what projects are being planned.

Nick Boyle: It was never meant to be a budget and it has become a budget.

Paul Barwell: That is true. It was an arrangement between Treasury and DECC back in 2010.

Nick Boyle: So every time the projected wholesale electricity prices drops, the delta then has to be paid for by the LCF but that was never envisaged as what the LCF was designed to do. The one thing that we ignore, because it is about consumers' bills, is that the consumer's bill is going down because the wholesale electricity price is going down. So the LCF is going down because of the fact that it has to pay for that gap yet the ultimate payer of the bill has enjoyed the reduction that is being paid for by the reduction in the LCF, if that makes sense.

Paul Barwell: Yes.

Nick Boyle: So it is doing things it was never meant to do but that is not the first time.

Q171 Chair: Is the LCF one of the biggest state secrets in the UK?

Nick Boyle: I don't know any of the other ones. Maybe they are smaller.

Q172 Chair: Can you imagine another state secret with so many billions involved in it?

Abid Kazim: Possibly you can but the reality for us is that the levy control framework is probably not being used in the way that it is meant to have been used and it is not clear and transparent as to what we can do with it, but it is probably not our job. Our job is to work within a regulatory framework that makes sense and we can predict against. The LCF for us right now does not convey the real value to the consumer of what we are doing because fundamentally somebody has to generate. Somebody has to generate the electricity that we use in the homes. Somebody has to pay for that electricity. If we go back five years and ask why we created this, we created it so we could change the energy mix and this week we came back. It is not aspirational. When we look at COP21, it is meant to eventually be something that is of value to this country and to the rest of the world. The Minister talks about it being aspirational, implying that we do not have to achieve it. We do. There was a mechanism created to help us achieve a change in the mix. It has succeeded and in doing so it massively reduced the cost of that change to the mix. Going forward, that cost is going to reduce further and it will affect the consumer's pocket because that cost reduction is already beginning to play through.

Nick Boyle: It is really difficult to do, and no comment on the LCF because there has to be some mechanism, but the cost is not just today. Kicking the can up the street by basically focusing on gas, which is still a fossil fuel last time I checked, is only putting off until tomorrow something that we really should be dealing with today. If you invest in solar and wind and other renewables you don't have that cost and nobody is paying for that; there is

not differentiation in terms of the cost of renewable to take account of the fact that there is no carbon adding up in the future.

Q173 Chair: Another minor point before I take in Matthew. Just a brief answer to my question. The LCF has been affected by the fall in the price of fossil fuels. Others will argue the LCF has also been affected by the extra generation that renewables have put on the system because the fuel of renewables is very cheap: the sun shines, the wind blows, the capital costs are really where the expense is. Have you any idea how much of the LCF has been taken up by cheaper electricity from renewables?

Nick Boyle: We would love to know but unfortunately our question was not answered.

Q174 Matthew Pennycook: It is straying slightly but your answer is particularly interesting so I am going to follow up. The whole argument about gas is that it could effectively be a bridge that if you did not lock in would move you off. Do you think we have gone past that point and that does not make sense anymore?

Nick Boyle: The concept of a bridge is you have a point on and a point off. What is the point off?

Matthew Pennycook: I am saying is there any point off?

Nick Boyle: I am saying there is not. The whole point of the exercise here is to get to a point where—

Matthew Pennycook: I am not under questioning here.

Nick Boyle: You got voted in; I just got asked in. I don't believe that there is a bridge to gas. I think gas is basically putting off 15 years or whatever and it is essentially letting the next generation deal with the issue. The reason I say that is because of cost. We are in a situation here where we are talking about what the consumer's bill is because of the fact that we have built solar. But what is the consumer's bill going to be in 15 years' time because we did not build solar, we chose to build gas? Someone has to tidy up the carbon that is being thrown into the atmosphere. I don't want to sound like a tree-hugger here but that is the reality at the end of the day.

Q175 Antoinette Sandbach: I want to come back on that because we saw a NISM issue the other day because of the unpredictability of wind. Solar, it shines for the number of hours in the day—

Nick Boyle: Sometimes.

Antoinette Sandbach: Sometimes. Exactly.

Nick Boyle: Not in Northern Ireland.

Antoinette Sandbach: Clearly there has to be generation that can generate when there is not sufficient—

Nick Boyle: Either that generates when it is needed or stores it whenever it is generated and then uses it. The holy grail here is batteries and other forms of storage. I absolutely

agree with that, which is why we had a focus on that in our submission. That completely metamorphoses the whole scenario. As a country, we have to produce 10% or 15% more electricity than we need. With batteries and other forms of storage you do not. Think about the saving to UK plc if we focus on that.

Q176 Antoinette Sandbach: If that is introduced at a household level, the chances are that they will not be pulling from the grid in the same way as they have been.

Nick Boyle: Absolutely. In our submission—I hope you have read it—we said exactly that. The KPMG report, which we were one of the funders of, focused on exactly that. There are so many clever things going on in the world that focus on this and we have a whole division looking at it. Believe me, the UK could be at the forefront of it or it could be a follower. We should be at the front.

Q177 James Heappey: Finally, some discussion of the rate of return. We have heard some criticism of DECC's use of 4%. You brought it up earlier on, Mr Kazim. What would be a fair rate of return?

Nick Boyle: Can I just comment quickly on this? PFI plans: at the end of the day for an investor it is about looking at one investment versus another, risk and reward and so on. PFI projects in the UK: is a promise to pay from the Government, no fluctuations, 4%. The market is efficient in the UK. If you look at the listed funds, whether it is Bluefield or Greencoat and so on, they are at 7%, 7.5%, so that is at the end of the day what the owners of these assets are willing to pay. The market is efficient, therefore that is what investor will go for so that is what you should be looking at. However, it ignores one fundamental point, to the point that Abid made earlier. Someone has had to get those projects to the point where they are able to sell those revenues at 7% , 7.5% so therefore there has to be built into the numbers something for the people that take that development risk. What the DECC report does is look at 4% on pure cost. It is just not realistic.

Paul Barwell: You also have to look at a domestic customer because you can get a return of 3%, 3.5% in a five-year pension bond, so to ask somebody to put solar on their roof for 30 years, because that is the way DECC are looking at it, to get a return of 4%—it is an illiquid asset—is one of the barriers that we have to rooftop deployment so it needs to be a commensurate level that represents that risk. It is not a lot of risk because there are no moving parts, it will last for that 20, 30, 40 years, but it needs to be somewhere where you can borrow money at.

Nick Boyle: Good luck borrowing at 4%.

Paul Barwell: Green Deal was 7%, 7.5%, but not enough people were borrowing at that level. I would say 6% to 8% seems to be an acceptable level in this current market with very low interest rates but if interest rates rise, it needs to be looked at again.

Abid Kazim: I hope you enjoyed my answer. Fundamentally the answer is this: to be able to reduce the cost of capital you need to have consistency, you need to have a level of clarity and you need to have a level of continuity. PPP/PFI contracts that they relate against are massively leveraged contracts. Huge amounts of debt go in against a very predictable income revenue stream. Right? If you were to go for a heavy-leveraged solar model you might be able to reduce the cost of equity but to be able to get to that leveraged

model you would have to take all the risk out. A PPP/PFI contract says, “I will pay you X amount of money every year regardless. You will have a service level agreement. You will achieve to it”. I used to work in the sector so I know how it works.

Generation is not the same. A similar thing to PPP/PFI is capacity payments. Regardless of what you generate, I am going to pay you money, which is going to hit the consumer by the way. That is the same thing as PPP/PFI. But if you are open to the market, you are taking risk, you are doing it on a basis that makes sense for the consumer, you are doing it on a basis that makes sense for this country, you are going to end up with a higher cost of capital unless you are willing to give me absolute certainty and that is what 4% equals.

Q178 Chair: Thank you, witnesses. We are about to move to move to the next panel of witnesses to discuss the low carbon network infrastructure. Can I invite the next group of witnesses to come in? But can I thank especially the witness group we have had here today, Mr Kazim, Mr Boyle and Mr Barlow, for your time and your frank exchanges. It has been very worthwhile. Thank you.

Abid Kazim: Thank you for inviting us.