HOUSE OF COMMONS

Business, Energy and Industrial Strategy Committee and Welsh Affairs Committee

Oral evidence: The Swansea Bay Tidal Lagoon, HC 1014

Monday 25 June 2018

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Watch the meeting

Members present: David T. C. Davies (Chair); Tonia Antoniazzi; Chris Davies; Geraint Davies; Stephen Kerr; Albert Owen; Mark Pawsey; Rachel Reeves; Antoinette Sandbach; Liz Saville Roberts.

Questions 126-197

Witnesses

I: Rt Hon Claire Perry MP, Minister of State for Energy and Clean Growth, Department for Business, Energy and Industrial Strategy and Ashley Ibbett, Director, Clean Electricity, Department for Business, Energy and Industrial Strategy.

Examination of witnesses

Witnesses: Rt Hon Claire Perry MP and Ashley Ibbett.

Q126 **Chair:** Minister, thank you very much for coming in this afternoon, straight after the statement, and Mr Ibbett. I am glad to see that both our Committees are now quorate, which is helpful, and the Clerk is going to explain something. I am going to go round the room, starting off with Tonia Antoniazzi who has a local concern, and we are basically just going to fire some questions at you, Minister, on the statement, such as it was, a few minutes ago. Could I start off, please, with Ms Antoniazzi?

Tonia Antoniazzi: On 5 June the First Minister of Wales wrote to BEIS with a simple question: would you be prepared to offer Tidal Lagoon a contract of the same price and value as already awarded to Hinkley Point C? What is the answer to that question?

Claire Perry: Thank you very much for the opportunity to speak to the Committees. As we heard in the committee, the issues that the Government and officials have been considering for a period of time are complex and difficult. Part of the challenge is that only some of the numbers that we can talk about are in the public domain. Many of the numbers that have been discussed extensively between ourselves and the Welsh Government—there have been 10 such meetings this year—are not in the public domain because we are subject to a non-disclosure agreement.

I refer you to the statement that was made by Mr Shorrock when he gave evidence to the Select Committees, I believe in your last session. He said on a like-for-like basis, taking into account the same time period, the same decommissioning liability, the cost of the Swansea lagoon would be about £150 in terms of a contract for difference. Of course, on that basis, as the Secretary of State has set out, as much as Ministers like me and many others have wanted to support this technology—I grew up on the other side of the Bristol Channel, I have seen the tidal range and understand the power of tidal certainly in the UK context—we ultimately have to make a decision that takes into account the decarbonisation potential, the cost for consumers and the competitive advantage it creates both in wonderful cities like Swansea but also for the UK. This project does not meet that value-for-money test.

Q127 **Tonia Antoniazzi:** You are saying there is a non-disclosure agreement. Will we ever find out what these figures are?

Claire Perry: It is up to the developer because it is, of course, the developer that issues a non-disclosure agreement. If the Committees want to understand the asks that have been made of both the Welsh and UK Governments—which ultimately are asks for UK taxpayers because all spending, whether it is in Wales or Westminster or Scotland, scores on the balance sheet—I imagine it is for the two Committees to request that and, indeed, to understand and to see it. At this point, we have signed a non-disclosure agreement and we cannot disclose anything more than has been put in the public domain.

Q128 **Tonia Antoniazzi:** The other thing that is really niggling me is the fact that we have waited so long for a decision. Personally, a campaign was run last year—in which I was successful, thankfully—using the Swansea Bay Tidal Lagoon and electrification to Swansea, and we do not have either of them. Why have you not done the decent thing and told us your answer?

Claire Perry: I sympathise and I have to say that the honourable lady and others have been absolutely fantastic campaigners for this. Rarely has a company managed to get so many MPs from so many parts of the House of Commons to make its arguments for it. Of course, the campaigning for Wales has resulted in the Swansea City Deal and the removal of tolls on the Severn Bridge. There were, I think, 82 foreign direct investment deals secured for Wales last year. Wales, by the way, has the highest growth rate of any country in the United Kingdom currently.

I wanted to take you back to some really important advice that has made me think very hard about this project. That is the letter written by Citizens Advice to the Committee and to others at the time of the Hendry report, which basically was very cautious about the idea of adding to consumers' bills from this project. It also pointed out that the Government have been criticised in the past by the NAO for not scrutinising these bilateral decisions effectively. Very explicitly, we should try to minimise the occasions on which we are doing this, and when we do it the CMA has recommended we must carry out clear and rigorous analysis of the impact of doing so. All of us would have wanted there to have been a speedier process, but we had to go through those steps. We had to involve the Welsh Government. Perhaps I can ask Ashley to talk about those negotiations, but asks were being made, often in public as quite a clever negotiating strategy, of different parts of the UK Government structure at different times by a very canny and well-resourced company. Ashley, do you want to comment on the process that we went through in the negotiations?

Ashley Ibbett: We have been looking at the proposals put forward by the developer for a programme of tidal lagoons over some time, looking at the various aspects, including all those mentioned by the Secretary of State in his statement to the House a short while ago. Earlier this year, we received the offer from the Welsh Government and the developer, which was a different proposal from the one we had been assessing. We talked extensively to our counterparts in the Welsh Government about our understanding of what the implications of that proposal were for them and for UK consumers and taxpayers as a whole. It is in the light of that analysis that we have reached the conclusion that we have.

Claire Perry: If you will forgive me, Mr Davies, this was, as we know, a first of a kind proposal with interesting technology. In terms of the length of the contract that was being asked for—60, 90, 35 years—these are intergenerational contractual commitments at a price that is substantially higher than any other form of renewable energy today. We have to ask ourselves: do we want to burden our children and grandchildren with a contract of payment when we fully expect the UK economy to be achieving zero subsidy, zero carbon sources of energy in the next couple of decades? That is the hard point, which is why the scrutiny I believe has taken so long.

Q129 **Tonia Antoniazzi:** I absolutely do not buy it because the thing is in my constituency of Gower now, the Government—it will be on your desk probably—are going to put in a gas power station. It just does not make sense that you are not investing in renewable energy or even having the foresight to put the money in now at the blueprint stage, of which the Swansea Bay Tidal Lagoon is.

Claire Perry: I have met the Cabinet Secretary of the Welsh Government. We had a meeting on 19 March. We have been in frequent contact with the Welsh Government. The Welsh Government have a very ambitious and brilliant target to bring forward 70% renewables with significant local content. Of course, in the UK we are now up to 30% overall, but we are able to buy that low-carbon power generation at prices very significantly below this proposal that was before us.

It does come down to how much we want to put on consumers' and taxpayers' bills in order to deliver this particular project. The advice that was given to us was that—as I say, I grew up on the other side of the Bristol Channel. Barry Island was where we went on holiday. No one understands better than me the power of that tidal range, the second highest in the world compared to the Bay of Fundy, but ultimately we have to do things that do not put up consumers' bills.

Q130 **Geraint Davies:** On the specific issue of value for money, my understanding is that the cost of the pioneer pathfinder lagoon in Swansea is about 30p per household. The cost for Hinkley is something like £15 a household. What we expect to happen is that as the uranium runs out the price of uranium will go up. You are aware, aren't you, Minister, that currently world uranium supplies are expected to run out by 2050 on the basis that 2.5% of the world is nuclear? If that rises to 12% because the Chinese build more Hinkleys—and once they have built one they will build more—we are likely to run out in 10 years. Have you factored in the price of uranium going up, and therefore the cost of nuclear going up, when you have done your calculations?

Claire Perry: I am going to let Ashley come in on this, but we have factored in a number of things. We can only analyse the deals that we are presented with. As we know, the total programme of lagoons would come in, at both estimates from Hinkley and the developers, at two and a half times the cost of Hinkley for the same power output, and for offshore wind we could buy the same power for £400 million. That includes asset replacement several times over the 60 years. Again, we are only being asked to contract on certain things, the contract for difference and then various debt and equity inputs, but comparing those on the total lagoon basis, this project is very substantially more costly.

Q131 **Geraint Davies:** But even on the figures you have just said, you have basically said it is twice the price over 35 years but of course the lagoon is supposed to last 100 years, three times that, and after 35 years we will have to build another nuclear power station with more contaminated waste and all the rest of it. Again, it is completely unreasonable and the tides will continue to come in and out.

Claire Perry: We have been asked to look at these on a contractual basis of 35 and 60 years. What you have to do is take the offer that a developer or a consortium provides and scrutinise it based on other ways to source that energy, assuming we want to decarbonise, and then also scrutinise it on the overall cost to the power system.

Q132 **Geraint Davies:** Mr Ibbett, I can see you are going to come in. Have you done it over the 100 years and what is the comparison there?

Ashley Ibbett: We modelled the electricity system to 2050 using different forms of low carbon and using the overall electricity mix, and that analysis looks at building a programme of tidal lagoons. The investment in Swansea would be predicated on proceeding to build a programme of tidal lagoons, as Charles Hendry made clear.

Q133 **Geraint Davies:** But my question was: have you done it over 100 years? I know you have done it over 35 years; that is why your numbers are wrong. You are just describing what we know you have done. Have you done it over 100 years and what was the comparator?

Ashley Ibbett: We have not modelled the proposition over 100 years. The further out into the future you get, the more difficult it is to model, clearly. I think it is important also to bear in mind that this will be the first of a kind tidal lagoon. It is not clear that it would last 100 years; it may last 50 or 60, we simply do not know given this would be the first of its kind. We have looked at the length of the contract and we have modelled the electricity system comparing power from tidal lagoons versus power from other low-carbon sources, and that is the analysis we have come to.

Q134 **Geraint Davies:** You have made these comparisons, as the Secretary of State has, with the current cost of wind power. What were you forecasting 20 years ago as the price of wind? The point I am trying to make is that obviously the answer is much more than it is now. Therefore, we can assume economies of scale with new technologies and all the rest of it, can't we?

Ashley Ibbett: We have looked at a range of different modelling scenarios with different costs for different technologies. It was not one single run that we analysed this programme through. We looked at different costs of financing, different costs of different technologies.

Comparing offshore wind as a technology to tidal lagoons, the innovation we have seen in offshore wind has been driven by technological improvement and by reductions in cost of capital as well as better performance from the assets and other things. Our own independent technical advice found there is limited scope for innovation in developing the programme of tidal lagoons. The turbines used in a tidal lagoon are a well established technology and the construction techniques used in the building of tidal lagoons are established.

Geraint Davies: Did you predict the savings in wind power? You did not, did you? You did not. You said then, "We cannot predict them" and you did not predict them, and now you say you cannot predict any cost reductions and there may be cost reductions.

Claire Perry: You are absolutely right, Mr Davies. Again, we have to understand that we are trying to decarbonise the energy supply at the lowest possible cost for consumers. It does not sit well to suggest we should enter into a 100-year contract, which by the way has never been proposed. We are going to burden our grandchildren with a fixed cost now when already we know that the cost being proposed over 35 years is two and a half times higher than alternatives, or three times higher than offshore wind.

Any modelling can be done and, by the way, you will know from discounting that the further out you go, the smaller and smaller the change becomes. Ultimately, we have to ask ourselves: is this a good way to spend UK taxpayers' and bill payers' money to buy low-carbon energy and contribute other benefits, which I know have been talked about? Unfortunately, the answer is no.

Q135 **Geraint Davies:** Would you confirm that today the Government are planning, in agreeing to Heathrow, that by 2030 the share of carbon from aviation will double from 6.5% to 12% and you are happy to make that commitment—that will go on for 100 years and be more and more—but you are not prepared to make the commitment to one project to see how it goes as a pathfinder in the knowledge that you do not have to do them all? The issue is whether this works and whether it forms the basis of an export future and a green future rather than the dirty future you are creating.

Claire Perry: I understand the Welsh Government are supportive of the Heathrow decision, which will benefit all parts of the economy. We are already at 30% renewables across the UK and at 32% in Wales. We fully predict that we will be able to buy increasing amounts of low-carbon energy, and remember all of those forms of energy are bidding into a fixed pot of £557 million. If we are to subsidise a project like this extensively, it reduces the amount of money that is available for better prices.

It cannot be right to say to bill payers and consumers right across the country we are going to put more money into this, we are going to try to deliver the same result, which is zero-carbon energy for you, but at a price that is three times higher than we could buy today. We are stewards of bill payers and taxpayers across the country. We are investing in innovation right across the country.

In terms of the global opportunity, again we benefit from the second highest tidal range in the world. The opportunities for global export, something we have considered, are really limited with estimates of between 54 to 100 gigawatts. There is a great article in *New Scientist* this week. The problem with very substantial tidal extraction is you only get 19%, down to 13% in some pools, and doing very large projects can have a very significant environmental impact. It has been striking to me that the RSPB has had major concerns about the whole string of lagoons that are proposed. In fact, they said the tide lagoons are high risk for wildlife and they do not believe any largescale lagoon development can meet the current environmental legislation. Again, that export market that by the way—

Chair: Order, order. Thank you. I call Mr Stephen Kerr.

Q136 **Stephen Kerr:** It would be interesting to hear about your discussions with TLP because what they said to us in a previous session was that they did not know what they needed to do. They had not been advised on the criteria they needed to meet to secure a contract for difference, "We would love to know what is going on. We would like to have a decision". What was being discussed at these meetings that you can tell us about? Added to that, what is your expectation now in relation to TLP and the project itself? Where does it go from here? Was that discussed at the time of your last meeting?

Claire Perry: I have never met TLP personally; other Ministers have. There have been five meetings between BEIS and TLP in the last 12 months and 10 meetings between BEIS and the Welsh Government. Ashley, do you want to—

Ashley Ibbett: At the time we launched the review by Charles Hendry, we said we would be suspending the bilateral negotiation we were having with Tidal Lagoon Power up to that point. We have obviously kept in touch with them and we have had a lot of interactions. They have access to the most senior official dealing with this proposal in the Department. There is regular communication between us and Tidal Lagoon Power, but we have not been involved in a bilateral negotiation with them. We were clear that we would wait for the Hendry review and our response before taking a view on that.

Q137 **Stephen Kerr:** What is your reaction to the suggestion that was made that they did not know the criteria they needed to meet to secure a contract for difference? It sounds strange given the fact there had been these bilateral discussions.

Ashley Ibbett: We had had some discussions with them in advance of launching the Hendry review about the proposal they are putting forward.

As I say, we suspended those negotiations when we asked Charles to undertake his review.

Claire Perry: We can only go back to what has been said in public because, again, we are bound by the NDA so we cannot comment on the various asks that have been made of different parts of the national Governments. If you go back to the latest evidence in front of your Committees, the suggestion was that the price that could be achieved on a like for like with Hinkley, which we did say was the high point of contracting, as I recall, was £150 per megawatt hour under the CfD.

Q138 **Stephen Kerr:** That was the last set of numbers?

Claire Perry: Those are the numbers that the company put in the public domain.

Q139 **Stephen Kerr:** What do you expect to happen to the project now?

Claire Perry: We have been very clear today that we have spent £100 million supporting tidal and marine energy since 2010. As with all technologies, we have invested widely and deeply in trying to bring forward new technologies. We know that there are other proposals out there with companies and developers and groups talking. We are really keen to support all sorts of innovation, but we have to constantly go back to whether this is an adequate price to pay for that energy.

Q140 **Stephen Kerr:** Swansea Bay itself?

Claire Perry: I am sorry, Mr Kerr, I do not—

Stephen Kerr: What will happen to this particular project? What is your expectation?

Claire Perry: It is up to the developer what it wishes to do.

Q141 **Chris Davies:** Minister, thank you very much for coming today. We were wondering why you were coming to start with when the announcement has already been made, but there we are. I said only half an hour ago that it is a great disappointment, certainly to us as Welsh Conservative MPs—although it is also that realism has kicked in as well—and that the figures that were announced really are prohibitive.

My question relates to the involvement of the Welsh Government, and maybe Mr Ibbett will have to answer. It was made very clear here when we met last that the Welsh Government were allegedly putting some money into this proposal, into this scheme, bearing in mind that whether it is the Welsh Government, the national Government or even European government, it is taxpayers' money that is the important aspect. The Welsh Government tend to, as we all know, take money from us, package it as their own and then label it as Welsh Government. Clearly, you said, if I remember correctly, you had discussions with the Welsh Government on their proposals. That is what you had and you mentioned that a little earlier today. What were those proposals and what were those discussions?

Ashley Ibbett: We had a discussion with the Welsh Government to make sure we understood what the nature of the offer they were making was.

Q142 **Chris Davies:** Would you confirm: was that £2 million, or was that £200 million, which seems to be bandied about?

Ashley Ibbett: I think that is probably for a Welsh Government official to answer as opposed to me. Certainly, we talked them through what our understanding was of what they were putting forward so that we could share with them our understanding of the implications for taxpayers and bill payers from the proposals.

Q143 **Chris Davies:** Could I just stop you there? I am sorry to pursue this point, but clearly they are going to be labelling tonight in the press that they were going to make a substantial donation to this scheme. Mr Shorrock would not admit whether it was £2 million or £200 million. You as a British Government official will not tell us how much that was. We as MPs will have to come up with a report on this. Surely it is fair to us to know what contribution the Welsh Government were going to make in taxpayers' money to this scheme.

Ashley Ibbett: Again, that is a matter for Welsh Government officials and Ministers as opposed to me. It would not really be right for me to discuss the offer they were making.

Q144 **Chris Davies:** Minister, would you like to comment on that?

Claire Perry: You will understand that having signed NDAs and having had the company approach the Welsh Government on a separate basis, we have to be really careful. If the company wants to publish all of the things it has asked for from the Welsh Government and HMG, that is up to the company.

Q145 **Chris Davies:** I would not expect you to give us figures for Swansea Tidal Lagoon as a company but as—

Claire Perry: Sorry, for this project, forgive me. All I can say is that the amount of money that has been proposed is—there are substantially larger financial commitments that would have to be made to get the contract for difference price down to the levels that have been discussed.

Q146 **Chris Davies:** So, not a figure out of either of you?

Claire Perry: I am afraid not, but I believe your Committee has the power to ask, to scrutinise and to see numbers in a privileged situation.

Chris Davies: Okay. I will leave it at that, Chairman.

Q147 **Mark Pawsey:** I wonder if I might start off with a question from the perspective of the supply chain, which of course is overwhelmingly British in its origin. The supply chain would have been encouraged 18 months ago when Charles Hendry gave his pretty positive report. I know that there were companies in the supply chain that, on the basis of that report, continued to invest in and carry out development work. On the face of it, at this stage that sounds to have been money that has been spent unnecessarily, money that has been spent in vain. Given that the case that the Secretary of State made in the Chamber very recently is so convincingly against the project, why did it take 18 months to get there and why have the Government come out with such a contradictory answer to that that Hendry provided only 18 months ago?

Claire Perry: If I may say, Mr Pawsey, you and others have absolutely been on the front foot in making the case for the supply chain, although it is interesting that chief executive of GE has said its issues relate to the downturn in the oil and gas sector and there is a global reduction in the supply of gas turbines. Indeed, the numbers that are pumped around, 100,000 tonnes of steel is a third of Port Talbot's monthly output, 28 full-time jobs are effectively available after construction—

Q148 **Mark Pawsey:** Quite a substantial number of turbines would have been made at GE.

Claire Perry: There are two questions. One is why; I go back to why it has taken so long. This is a £50 billion programme. It is the most expensive at-scale power station ever proposed in the United Kingdom with intergenerational financial support and much more expensive than others, so I think it is right that we have taken the time. It has not been the Government suggesting that there are these supply chain opportunities. It has been effectively the company, which has signed no contracts, by the way, for any of these supplies.

For me, the industrial strategy element of this is that if we can see a technology where there will be very substantial export benefits down the line, that is a reason to take taxpayers' and bill payers' money and subsidise companies' construction, which has not been this case. I go back to the fact that the areas of the world where this is likely to be a viable technology are very likely to want to use their own local rock and local turbine manufacturing and the opportunity for exports are primarily around the service and monitoring package, which of course does not help companies like GE.

Q149 **Mark Pawsey:** Perhaps we might agree that elsewhere in the world they would use their own rock but perhaps they would not have the skill and ability to produce their turbines. Can I go back to the cost? This was always going to be a pathfinder project. It was always accepted that the cost of producing power from a relatively small-scale lagoon was going to be high but was a first step on the road. Has adequate allowance been given for the fact that it was a pathfinder and that if it proved to be successful, future tidal lagoons would be much larger in scale and, therefore, with lower costs of energy produced?

Ashley Ibbett: The assessment we made is of a programme of tidal lagoons, of which Swansea would be the pathfinder project. Those future cost reductions for larger-scale lagoons and the economies of scale and so on that they would deliver is built into the analysis.

Q150 **Mark Pawsey:** In his remarks in the Chamber, the Secretary of State referred to decommissioning and, Minister, I think you have referred to it. We know that the turbines would need replacing every 40 years because they would wear out, but the concrete and stone structure would exist. Why would that need decommissioning? We know that there are harbour walls around the country that are many hundreds of years old, so why hasn't it been possible to assume the life of the structure over a rather larger period?

Ashley Ibbett: We did look at the question of decommissioning, both the question of just simply removing the turbines at the end of life of the project but also whether full-scale decommissioning was required for whatever reasons to restore the natural habitat.

Q151 **Mark Pawsey:** Why could it conceivably be required?

Ashley Ibbett: We have looked at a range of options for decommissioning from simply decommissioning the turbines and reducing them from the marine environment to full decommissioning, which, if we have a programme of large lagoons and there are environmental issues, may be something that would need to be considered.

Q152 **Liz Saville Roberts:** I, too, on behalf of Plaid Cymru, would like to state how disappointed we are with today's announcement. It seems to me from what we are discussing now, very shortly after the statement as well, that the question is how we come to any conclusion on the value for money. On 12 June you said of Swansea Bay Tidal Lagoon there are some very attractive things about it but it has to pass the value-for-money test. The developer provided their own value-for-money assessments, which were submitted to Government back in October 2016. They were then revised in light of the investment offered by the Welsh Government, whatever that may be. That shows from the developer's figures that the tidal lagoon either matches or outperforms Hinkley across the NAO's three value-for-money tests. The project would contribute £2.1 billion to the UK economy and its lifetime subsidy costs of between £302 million and £390 million achieve a net positive social NPV benefit of between £787 million and £875 million. I think that we already heard in the Chamber about the 2,260 jobs in construction.

I have a question, first of all, about when it was decided that the Government's own analysis outperformed that which has been proposed by the developer. More important than that, in our role as a committee in scrutiny it is impossible for us to assess value for money if we do not know on what grounds you are coming to your conclusion on value for money. Could I ask you to commit to provide all necessary documentation to us within the privilege of this Committee, through the

Chair, for us to be able to come to a decision on behalf of the public as to what the assessment criteria of value for money were and how we can make a comparison between what the company has put in the public domain and that which the Government have used?

Claire Perry: Ms Saville Roberts, we frequently sign non-disclosure arrangements and we cannot legally break them. As I said, if the Committee wants to get the developer to produce the numbers it has asked for from the Welsh and UK Governments that is for the developer to provide, not us. We do not breach legal arrangements.

As we have been instructed on numerous occasions by the NAO and others, we have run Government value-for-money tests of any proposal that comes in. For example, many of the social and economic proposals that have been produced by the developer relate to tourism and recreation benefits and flood protection, all of which may well be worthy deliverables. We cannot put those costs on energy bills. We have a responsibility to consumers and bill payers across the country and if those bills, if those benefits want to be captured elsewhere it is not for us, in looking at the cost of this from an energy point of view, to be opining on them. Our job is look at bids to provide energy right across the UK and run them through the test of carbon reduction, cost reduction and competitive advantage creation. We have done so extremely rigorously.

As I say, I was very keen to like tidal because I have seen the powers of it on a daily basis, but the number for this project is very much more expensive in comparables: it creates 28 full-time jobs after construction at a cost of £46 million per job, the company will be spending 70% of its income on debt service—if you look at its own calculations in the public domain—and it means burdening consumers with £700 per household over a 30-year period. People talk about the cost of a pint of milk. We could spend the cost of that pint of milk buying four times as much energy from offshore wind today. We have to ask ourselves why are we prepared to put a subsidy on consumers for this particular project when we are not for other projects. That is the job of our Government and our officials.

Q153 **Liz Saville Roberts:** I represent Dwyfor Meirionnydd on which coastline is the community of Fairbourne. The time must come when we start to cost the social impact of climate change on communities such as Fairbourne—800 people live there. It has been costed that the social cost for that would be in the tune of £70 million. We are looking at these small communities and we must somehow, along the line, look at the balance of costs.

What I asked was the question of when the decision was made. Within 24 hours of the Hendry review launch there was *The Times* headline of "Tide Turns in Favour" and that changed to "Tide Turns Against" on account of negative briefing from an unnamed Whitehall source. Do you think it is appropriate for an independent review of Government to be undermined by Whitehall in this way? When we have this information in the public domain people do wonder as to when these decisions were made. When we cannot scrutinise the figures in question it leaves so many questions.

Claire Perry: To take your first point, absolutely, this is why we are committed to substantially increasing our purchase of zero carbon energy sources. Indeed, while we are the first developed country in the world to ask for advice from the Committee on Climate Change about how we achieve a zero carbon 2050 target, we do value the social cost. The social cost of climate change is implicit in the cost of carbon reduction we use in all of our analysis.

I cannot comment on Whitehall leaks. Whitehall leaks are a disgraceful way of doing business, as are companies briefing newspapers or whatever it is. We have to ignore that and focus on the value-for-money test that we apply, taking into account: does this reduce costs, does this deliver carbon reduction, does it create a competitive advantage? Having done that extensively and rigorously as we said we would, the conclusion is that it does not. This is too high a price to bear for consumers.

All of us should be very minded to see what Citizens Advice, who provide incredible advice to all of us in our constituencies, says about this project. It says that it thinks that this is too high a price to pay, effectively. I refer to its report and the letter of 22 July. If our number one campaigning organisation for citizens' rights across the country—the lady may laugh—taxpayers across the country and bill payers in her consistency and indeed businesses in her constituency do not want to over pay for projects, no matter how attractive they might seem on paper, that is what we have to do.

Chair: I have been very fair to everyone, and hopefully there will be time to go around again, but there are people who have not spoken yet, including the Chairman of the Committee, Ms Saville Roberts. I am making a note, by the way, of how long everyone is speaking for and currently neither myself nor Ms Sandbach have spoken.

Q154 **Antoinette Sandbach:** Minister, may I ask about when you assessed this project? You have largely been questioned on the financial basis but you also, in your evidence, spoke about the environmental concerns. Clearly as this was a pathfinder project, for example, if there had been silting up of the turbines or issues of that sort there might well have been additional costs that were presumably not included in your model. Is that right?

Ashley Ibbett: We have looked at the cost of the electricity system of the programme of tidal lagoons.

Q155 **Antoinette Sandbach:** You didn't consider additional environmental costs that might have substantially increased the cost of the project itself?

Ashley Ibbett: No, we couldn't, no.

Q156 **Antoinette Sandbach:** On the question of the durability of the infrastructure—there have been a lot of storms that have hit both the north Wales coast and the south Wales coast and we have seen many dramatic pictures of collapses of infrastructure, particularly in north Wales—was any of that included in your modelling? Was there a figure put aside to look at what impact of the increasing variability of weather under climate change could potentially have on the infrastructure as built?

Ashley Ibbett: That is something that we could not quantify as part of the modelling but, as you say, one of the potential impacts of climate change is both increased severe weather events and rises in sea levels. Both of those could have an impact on the longevity of the lagoon.

Q157 **Antoinette Sandbach:** Even without taking into account unknown variables such as impacts on fish and bird life, impacts of silting on the turbines, adverse weather impacts—were none of those considered in looking at the value-for-money assessment as we have it today?

Ashley Ibbett: We looked at electricity system modelling.

Q158 **Antoinette Sandbach:** Given that other projects could be carried out that could benefit households nationally, across the whole of the UK, such as a programme of targeted energy efficiency measures looking at hard-to-treat households, did the Government look at the potential benefits of other programmes? You have spoken about wind but have you looked at energy efficiency and the potential gains in reductions in power that are needed? When looking at the cost benefit analysis, did you consider the savings that could be made and the fact, for example, that investing £1.1 billion in energy efficiency programmes would generate £1.6 billion of savings and lead to far greater reduction in energy demand?

Claire Perry: Traditionally we don't, we look at generation comparisons, but I think you have made this point before, Ms Sandbach, and it is an excellent point. I am looking forward to seeing the information from the National Infrastructure Commission, which focuses on the flipside. There are clearly more cost effective and far less environmentally damaging ways to deliver the same image. It did not feature in our value for money but I was very struck by the evidence given to your Committee last time. There has been a lot of lobbying to do Swansea, as the pathfinder, but on the basis that the costs will only come down if you do a large programme. It was very clear from the RSPB, at least from what it said, that its own and the Welsh Government's assessment of the same plan is that compensating for the environmental factors of larger scale tidal lagoons would be challenging. There is no convincing evidence that largescale development could be delivered in a way that is compliant with the environmental legislation.

By the way, my understanding is that that also applies to global exploitation. The problem with this tidal energy is that it tends to be in very fragile marine environments and that is one of the reasons that what experts believe can be achieved is so much less than the theoretical capacity.

Q159 **Antoinette Sandbach:** You spoke about the endless promises—I would argue, not your words, but mine—made to supply chains across the UK. There was dangling of golden carrots all over the place to try to get MPs on board to back this project, as you pointed out. What contracts had been signed for the supply chain? If this project is viable as a pathfinder project, why should it require Government subsidy to go ahead? Why would private equity not back it and support it if it is going to prove to be viable over the timeframe that is suggested of 100-plus years?

Claire Perry: I am not aware of any contracts that have been signed. The challenge is if we were to go ahead with this project at the very substantial subsidy that it would require, which fits consumer bills, we would effectively be taking money from hard-pressed consumers right across the country and giving it primarily to those who provided debt financing. If you look at the company's own evidence, I believe £34 million of its £50 million annual revenue, on the latest estimates, would go to financing, not even paying down their debt. Some of it would then be going effectively to subsidise production from companies, which may be an attractive thing to do but that is not the purpose of energy policy. I come back to the fact that there have been no contracts signed that I am aware of and it seems to be that the primary beneficiaries of this deal as currently structured are those providing debt into the project.

Q160 **Antoinette Sandbach:** Has the company highlighted the level of return on investment? I know when I spoke to it it was were talking about roughly £168 per megawatt hour linked to RPI or CPI—so not decreasing over a term, at that point—over a considerable period of years, certainly more than 60 years. Those were the figures when I first met the company and it discussed that with me. Given that very high cost and the long period of time that it was proposed over, and the environmental risks that as yet have not been factored into the project, had the project passed the value-for-money assessment how would the environmental dangers associated with it have been factored in, or is it just about the money?

Ashley Ibbett: Obviously I cannot comment on the proposition you have described. We are covered by a non-disclosure agreement. I heard the evidence you took from Natural Resource Wales, who were looking at the environmental permitting surrounding Swansea Bay Tidal Lagoon. In a way, the environmental impacts are more a matter for them than for me, given they have the competence to look at those issues.

Q161 **Antoinette Sandbach:** They also have a requirement in legislation to act in accordance with the requirements of future generations. They have a different legal test in Wales and that permitting would have been carried out under that system. I would argue that that would have put a much higher test, potentially, on the environmental impacts linked to the project.

Ashley Ibbett: Yes, my understanding is the tests they would apply are different from the ones we were looking at in electricity system modelling.

Q162 **Chair:** Thank you very much for that line of questioning. Can I pick up on a few things that my colleagues have already asked about? The first is this non-disclosure agreement. Who asked for a non-disclosure agreement and confidentiality? Was it the Government, the Welsh Government or Tidal Lagoon Power?

Ashley Ibbett: The non-disclosure agreement we have is with Tidal Lagoon Power.

Chair: They asked for that?

Ashley Ibbett: I would need to check on that but I think we agreed it with them.

Q163 **Chair:** If they were hypothetically to say, "Yes, please release all the discussions, documents, everything that we discussed with Government", what would be your response to that?

Ashley Ibbett: We would have to consider their question in consultation with our lawyers.

Claire Perry: And with the Welsh Government obviously.

Ashley Ibbett: And with the Welsh Government.

Q164 **Chair:** If they were offering to lift the terms of the NDA, presumably then, in the interests of transparency, the British Government would want to perhaps release all relevant documents to this Joint Committee, would it?

Claire Perry: I believe in evidence-based policymaking. To the extent that the numbers that are material to the calculation have not been put in the public domain—I do not want to get myself into legal hot water and would need to consult on this—I think there has been some canny marketing of the numbers that have been released into the public domain. Looking at the whole thing on a fully costed project basis, a systems basis and a value-for-money basis can only be helpful because we are spending other people's money in every decision that we make.

Q165 **Chair:** One of the figures that has been put into the public domain that we have not had a chance to thoroughly scrutinise is the £200 million from the Welsh Government. I know you can't go into great detail about that but that £200 million is roughly the figure they were offering, is it? That has been put into the press a lot of times so—

Claire Perry: I can't recall, Mr Davies, what is and isn't in the public domain.

Chair: That has definitely been in the public domain a lot of times.

Claire Perry: There is a misconception that this is somehow a separate pot of money that belongs to the Welsh Government. Every project that we scrutinise has to be considered as an HMT project regardless of which country of the Union it comes from because it all goes on the public balance sheet and it is all paid for by bill payers and taxpayers across the country. The notion that the Welsh Government have a separate pot of money from which they can find £200 million, which has been suggested I think, is completely incorrect. If anyone is thinking that that is how projects are done, they are not done on that basis.

Q166 **Chair:** Is that £200 million roughly correct? Really, it has been in the public domain many times. I have seen it in the *Financial Times*, *The Western Mail*, off the record briefings to Martin Shipton; £200 million has been mentioned. I have looked to the rest of the Committee to nod in assent.

Geraint Davies: Chair, that is a share in the business. It is not like we just give them a lump of money. There is a return on that as there is with Wales Airport.

Chair: Absolutely, but that is roughly correct, is it? They were offering to put that in.

Ashley Ibbett: I too have read the newspapers and seen figures bandied around. We have to take the value-for-money assessment in accordance with the Green Book and so on. It has to take into account the overall burden on the UK consumers and taxpayers as a whole. The fundamentals of Swansea Bay Tidal Lagoon, which is the capital cost of building the lagoon, have remained at £1.3 billion.

Q167 **Chair:** Okay. Did you take any account of the risk of an overrun in the costs of constructing the lagoon? What sort of a risk did you think that posed to the project?

Ashley Ibbett: We looked at the costs of developing a programme of lagoons using the sort of estimates that the Hendry review contained. I think he looked at the programme of six lagoons and found an overall cost of just in excess of £50 billion. That is the basis on which we conducted our value-for-money assessment of the programme. You are right, that does not take into account cost overruns. I saw you quizzed the developer of the project about that issue when he appeared before you but, as I say, our analysis was based on the cost of building a programme of lagoons, based on the estimates from the Hendry review and supported by our own independent technical advice.

Q168 **Chair:** As far as the contracts are concerned, it has been in the public domain that various companies, including one in my own constituency, have been offered contracts were this project to have gone ahead. If it had gone ahead, would those contracts have been subject to EU rules while we remain in the EU or to WTO rules or anything else? My understanding is that there might have been an issue about a project receiving public subsidies giving contracts out without having gone through a best value procedure across the whole of Europe.

Ashley Ibbett: I am aware of no contracts having been signed with the supply chain for this particular project. Any responsible company would want to run a procurement exercise given a project of this magnitude. On the question about whether receipt of public subsidies means it must follow EU procurement rules, that is a matter on which I can't explicitly answer today. If we look at what has happened in the offshore wind sector, the companies involved in that have worked very hard to ensure they have a very competitive supply chain through the procurement processes that they run. Any developer of another project would think of doing likewise.

Chair: I know that one member of the BEIS Committee has to leave shortly and once that member goes I am afraid the other members will not be able to ask questions.

Geraint Davies: Why is that, Chair?

Chair: I don't know, to be honest with you, but I am advised that is the case by the Clerks of the Committee. I am afraid I am not an expert on this.

Q169 **Mark Pawsey:** The tidal lagoon is a new and disruptive technology. Do you have any concerns that today's decision might put off future disruptive and innovative developers and investors because this one has not been adopted?

Claire Perry: You are absolutely right to focus on wanting to invest in the future. I would argue it is not particularly disruptive technology in that there is a lagoon system that works on this basis in northern France, which is primarily now a tourist attraction. The technology itself is not a breakthrough. We are always looking for innovation and this is why we have £2.6 billion worth of money to invest in research and development. It is why we have preserved the contracts for different structure because we are very keen to invest in new forms of innovation, and it is why the door is absolutely not closed to other forms of energy. It can come from renewables and indeed marine—

Q170 **Mark Pawsey:** The developer and its suppliers have spent substantial sums of money getting here. Are they not going to be discouraged by today's decision?

Claire Perry: As I think has been mentioned, we are aware of other proposals that are coming forward on a similar technology basis, but ultimately we have to get back to the fact that having gone through a similar painful process of following the Green Book and HMG guidelines, we got to a situation with offshore wind where the prices have fallen 50% in two years, thanks to the auction structure we have put in place. It is brilliant for all of us across the UK because we are able to hit our renewables targets at a much lower price than we ever thought possible. We want to do that for all forms of innovative technology but ultimately we don't want to spend other people's money when we can buy the same or larger amount of zero carbon energy in a way that generates more export potential and more competitive advantage.

Q171 **Antoinette Sandbach:** I wanted to come back to the pricing again. There has been a suggestion that maybe the Government should hold an open competition in relation to tidal lagoons, although I would say that there are still environmental concerns. Ecotricity and Tidal Electricity have some proposals for two lagoons on the Solway Firth, where Ecotricity has suggested that the development would need Government support of £90 per megawatt hour for 25 years, substantially below some of the figures in the public domain for tidal power. Minister, you said that the capital cost of building in the Hendry review was identified at about £50 billion and that the main costs were around financing that. It would be the taxpayers effectively, through additional costs on their bills, who would be paying a pretty high return to finance companies. Are you able to put in the public domain the level of return that Swansea Bay Tidal Lagoon was expecting? My understanding from discussions is that it was well over 12%, but that may be wrong. Those discussions were some time ago, but a 12% return paid for by the taxpayer is pretty high.

Claire Perry: I am afraid I can’t put into the public domain what the imputed return was, but you are right, Ms Sandbach—and there is a question, of course, about whether you should fence off pots of subsidy for different forms of technology. We have been criticised quite heavily in the past for doing that. If we want to do that we have to have very compelling reasons, strategic reasons or export reasons, or competitive advantage reasons to do it. Ultimately, we know that there are all sorts of interesting proposals coming forward but it is the Government’s job, our responsibility to bill payers and taxpayers. We need to achieve our carbon reduction targets, which we are doing very well, we need to get bills falling, which they are but we want to accelerate that. We have to invest in technologies that deliver competitive advantage so that we can all have jobs and growth in the future. It is not our job to provide returns to developers or to financial institutions.

Q172 **Antoinette Sandbach:** Are there marine technologies coming forward that potentially do not involve barrier technology, in other words, devices that could harness tidal energy without creating a barrier? That would be really interesting and not carry some of the environmental risk of barrier technology when it comes to tidal power.

Claire Perry: Yes, we have invested substantially in wave energy and also in tidal stream. I understand that some of the proposals, indeed as part of the Swansea City Deal, involve some technology centres focusing on different forms of marine energy. If we can get the innovation up and the cost down and we look at the global market, they could be very interesting propositions. Charles Hendry’s review was excellent about the opportunities here. Both he and others have a made a very strong case for this but, of course, the review did not cover value for money. It is our job to take the proposals and scrutinise them on a value-for-money basis.

Chair: Thank you very much indeed for that. I am afraid, members of BEIS Committee, that due to rules that I don't fully understand, you must now be silent if you want to stay.

Q173 **Tonia Antoniazzi:** Following on from your point about the Hendry review, why did they get it so wrong then? Did the Hendry review get the pricing wrong?

Claire Perry: As I understand it—and again I pay huge tribute to Charles who had my job several Governments ago—it was not a value-for-money analysis. It talked about the size of the opportunity, the export markets, the project. It did not talk about the financial structure and the returns of the project. That was what the developer presented to us that we were going to analyse.

Ashley Ibbett: That is right. Charles wrote his report before the most recent auction prices for offshore wind were revealed. At the time he was writing the report, offshore wind was at around £115 per megawatt hour.

Q174 **Tonia Antoniazzi:** When were the latest ones published?

Ashley Ibbett: They were published in September last year.

Claire Perry: In September 2017 we had the auction results of £57.50.

Q175 **Tonia Antoniazzi:** Going back to a comment that the Chair made earlier about the non-disclosure agreements, for the normal person on the street, my mum, when I have to explain why the Swansea Bay Tidal Lagoon is not going ahead, surely if the terms of the non-disclosure agreement are not lifted—without those figures being in the public domain there is no transparency and it looks like you are hiding it and the public just have to take your word for it. That is just not good enough. I urge you to go for it—

Claire Perry: I am sorry, I really strongly reject the idea that we are hiding anything. What I would say to your mum is, "The proposal in the public domain is that you, Mum, and all consumers across the country should pay three times as much for this lagoon as we would for any other form of carbon-free energy and that just does not seem fair, does it?"

Q176 **Tonia Antoniazzi:** I do not think it will be three times as much. You seem to think it is but I don't know because you have different figures.

Claire Perry: That is based on the numbers in the public domain. Those are the numbers in the public domain. Mr Shorrock said at your Committee on a like-for-like basis he would want £150, so tell mum it is far too expensive.

Q177 **Tonia Antoniazzi:** When you talk about bills—and without wanting to be party political—this is austerity, the cost of living is going up and you are being very kind in saying that you are not doing the tidal lagoon because we will be okay now, obviously everything will be all right. To me it just seems like a risk averse Government holding on to their pennies because of Brexit, to be honest with you.

Claire Perry: I am sorry, again I have to suggest completely that that is not the case. If we have gone from producing 40% of our energy from coal in 2012 and we will be at 0% from coal in 2025—

Tonia Antoniazzi: Don't put a gas power station in my constituency then, thanks.

Claire Perry: We are one of two countries in the world doing enough to meet even a 2º rise in the world's climate. The other is China. We are the only country in the world that has a Climate Change Act and asked for advice on getting to a zero carbon future. It is not a Government trying to be cautious. It is a Government being exceptionally ambitious on renewables policy and not overpaying, because the last thing we want to do is put hard pressed consumers in all our constituencies through the wringer for overpaying. Frankly, all parties should have a commitment to keeping consumer bills down.

Q178 **Geraint Davies:** My question is on value for money because, Minister, I think you said that you had to look at this quite narrowly in some sense for money for energy for the consumer. Mr Ibbett seemed to say that you look at the overall burden on taxpayers. Maybe it is the same thing, but the Welsh Government's considerations, for example, are clearly looking at the overall impact on the investment—whether it is tourism, or the local economy—apart from energy, given that they have to pay for social services and health and so on. Would you accept that there may be some extra benefits that you are not factoring into your value-for-money figure?

Ashley Ibbett: We did look at wider impacts as well as electricity system modelling to take into account the sorts of issues you are describing. What we found is that, compared with the overall cost of the project, those were not significant compared to the electricity system costs.

Q179 **Geraint Davies:** In the round, as we talked about, the problem we have in Swansea Bay is that we were promised £700 million for electrification of railways and the Government took it away. We were promised £1 billion for Network Rail to invest in railway infrastructure and that was taken away. We were promised £1.3 billion for the lagoon and that has been taken away. That is £3 billion. The Barnett consequential or our fair share of HS2 and Heathrow would be £3 billion, but we are not getting that either. In other words, we are losing £3 billion and we are not getting £3 billion; that is £6 billion.

This is the poorest area of western Europe. It will not surprise you, Minister, that people will be very angry that it has taken five years to come to this point. People are behind this and aware that the cost of uranium will go up, and the fact that we cannot use 80% of oil if we are to avoid irreversible climate change, and there is only a pathfinder. Respectable magazines like *The Economist* have come out and said this should be done and we should have a look at this pathfinder and see what the opportunities are. Can you understand the anger—

Claire Perry: I totally can—

Geraint Davies: Of being starved through austerity and stamped on by your Government?

Claire Perry: But I would also suggest that there are some things that perhaps are not being communicated to constituents in Swansea, like the £1.3 billion Swansea Bay City Deal, like the ending of the Severn—

Geraint Davies: But there is only £100 million from the Government on that—

Claire Perry: Can I answer? Can I please finish? The ending of the Severn Bridge tolls, which has been asked for for many years. The fact that there were 85 new foreign direct investment projects into Wales last year, creating 2.5 million jobs, and the fact that all of these numbers have been shared extensively—

Geraint Davies: Two and a half million jobs? Only 3 million people live there.

Claire Perry: Sorry, 2,500 jobs with 11,000 jobs secured. All of these numbers that we have been able to talk about have been shared extensively with the Welsh Government in coming to this decision. I think that if the good people of Swansea are not being told some of the good news that is a shame. I would also suggest that ultimately what we want is to have a really good, low-carbon, affordable energy supply so that bills across Wales, and in Swansea, and across the UK will be lower as a result of the decision that we have made today. Surely that has to be good news for everybody across the UK.

Q180 **Geraint Davies:** Yes. On the disclosure point, so we are clear on this—I think the Chair has asked some of this question—assuming we can get a disclosure agreement from the company Tidal Lagoon, the issue that is of interest is what judgments, evaluation and analytical methodology was used when coming to your conclusions. Assuming Tidal Lagoon are prepared to reveal their inputs, are you prepared to fully reveal the way you did your analysis? The assumptions that you made in analysing the data will have had an impact on the outcomes that you are now portraying as uncontentious facts.

Claire Perry: We will obviously have to take that away. The numbers that are in the public domain, as verified by the developer at your last meeting, suggest that in order to go ahead with this project it would require a price of £150 per megawatt hour. That is what it said; I have had the research. The costs that we are paying for Hinkley are completely explicit, as indeed is the offshore wind auction of £57.50. On that basis alone it is impossible to create a value-for-money story. I guess we would have to take it away. Of course, given that the conversations have been very extensively with Welsh Government officials as well, I assume we would have to get a joint agreement with the Welsh Government in order to disclose. Ultimately I believe the lawyers will tell us it is the company's decision as to what they can or wish to disclose in the public domain.

Q181 **Liz Saville Roberts:** I would like to ask a couple of questions arising from the starting point. To what degree does energy security feed into value for money? We already know that peak demand is at times exceeding peak supply, and we know that industry needs are increasing, and we have great expectations of electric cars and the demands that that will put in place. Value for money and the definition of what constitutes value for money comes down to our role in scrutiny all the time here.

There is a risk that, particularly in Wales, we have been so dependent on our European funding in the past—and we see the potential post Brexit of major projects becoming more and more dependent on Westminster money—such decisions will be inevitably politicised unless we have clarity on what value for money means. Otherwise the political decision that we come to is that—and I am sure my colleagues Geraint and Tonia have already raised this—we get the feeling that Wales is just not worth it for Westminster, and we would seek proof otherwise.

Claire Perry: Do you want to comment on energy security?

Ashley Ibbett: On the question of energy security, the modelling we use models the electricity system on a half-hourly basis between now and 2050. It does so in a way that means that supply must always meet demand. Tidal lagoons generate with a load factor of around 19%, so the modelling takes account of that, and when it is not available it builds something else to make up the time when the electricity is not generated. Offshore wind, for example, has a load factor of around 50%; nuclear around 90%. Energy security is built into the electricity system analysis, and the tests we have used on that electricity system are the same as we applied for Hinkley Point C.

Q182 **Liz Saville Roberts:** How do you anticipate growth in that demand?

Ashley Ibbett: We forecast demand out into the future, and we use different sensitivities for that. We publish our projections on an annual basis. We published the energy and emissions estimates fairly recently.

Claire Perry: It is right to ask the question, because clearly we are going to be burdening the system with more and more energy demand. I go back slightly on this value-for-money point. The numbers in the public domain say that the proposed lagoon at Swansea would have a capital cost per unit of electricity that is three times more than Hinkley; £1.3 billion will buy that. We could buy the same amount of electricity for £400 million using offshore wind today. The whole programme would then generate the same amount of energy as Hinkley at a cost of 2.5 times, and we could buy the same amount of electricity from offshore wind for £31 billion less. We know that the current proposed tidal lagoons at those stated prices will cost the average householder £700 per household over a 30-year period. It is hard to see how anybody could argue that the value-for-money case was not extremely obvious from those public numbers that have been verified by the developers.

Q183 **Chair:** Can I ask you something on that? I understand the value-for-money argument, but when you calculate the costs of wind at £57.50 per megawatt hour, did you also run into your calculations the fact that wind requires backup, usually in the form of gas and sometimes in the form of diesel generators, in order to match grid demand? To some extent the tidal lagoon would also require that, but there is a lot more predictability over the lagoon than there would be over wind, although obviously, as you will no doubt point out to me, there is much more over nuclear than over either. Nonetheless, there are some additional calculations to be made for the cost of matching grid demand with these other technologies. Did your calculation take that into account?

Claire Perry: That is absolutely the right question. The load factor for nuclear is 90%. For offshore wind it is about 40%, because the wind is reasonably predictable, albeit on a long-term basis. For tide it is 19%. Though the tides are very predictable, they happen for only such a short period of time.

Q184 **Chair:** That is your argument, but I am going to question that because the wind is not predictable second to second. When I went around National Grid headquarters, interestingly they are still purchasing the *Radio Times* there because they need to guess exactly how much electricity is going to be used at any given time. They implied to me, without being critical of the Government, that their job is now a bit more complicated because of the prevalence of wind and solar. Not only do they have to guess how much is going to come off that grid but how much is going to go on. I do not think you can make that kind of accurate prediction second by second.

Ashley Ibbett: The system modelling we do looks at making sure that supply always meets demand for every half-hourly period that we project for. The intermittency of offshore wind is taken into account in developing that overall system cost. It takes into account the load factor of offshore wind in determining the overall system cost of any particular technology mix.

Q185 **Chair:** Your calculation would take account of the need sometimes to fire up diesel generators?

Ashley Ibbett: Yes.

Claire Perry: Hopefully not diesel generators.

Chair: No, hopefully not, but they are there.

Claire Perry: One of the big issues in developing reliable renewable technologies is the investment in battery and other storage technologies, which is absolutely critical.

Q186 **Chair:** I have been hearing the exciting news that battery technology is about to come online within the next year or two. I have been hearing that for about 15 years now. Am I about to be pleasantly surprised?

Claire Perry: I opened the UK's first subsidy-free solar farm last year, which did include battery storage. The boring technical challenge is that lithium ion will store for hours and maybe days, and you want storage for weeks and months. There is lots of technology in the Faraday Challenge, which we have put a quarter of a billion pounds into, that is trying to solve that problem as well. I have to pay tribute to the Welsh Government, who have made some really great strides in bringing forward renewables, particularly in onshore and in solar. Wales is at 32%; it wants to be at 70%, a really ambitious target that we would support. There is local support for developments, and they are conscious that it has to be done at the right price as well.

Q187 **Chair:** Can I ask you two quick questions from my list here? What strike price would you have seen as good value for money? If the developers came back to you and said, "We can do it for £96.50 over 35 years without any extra subsidy at all from the Welsh Government or anyone else", do you think you—

Claire Perry: I slightly thought I might get asked that question. The challenge is that every deal is different. Every deal has a whole series of Ts and Cs that come with it, with the strike price being the headline. We are happy to look at all sorts of proposals and run the triple test over them: cost, carbon and competitive advantage. If you will forgive me, I would not like to put a number on it.

Q188 **Chair:** If they came back with a different figure, would you be willing to perhaps look again if it was a significantly cheaper figure than the one that you have had?

Claire Perry: The door is open. We have a £557 million pot. We want to buy the maximum amount of renewable energy for that, ideally on a subsidy-free basis, increasingly in some technologies, and we want to make sure that we are bringing forward the technology that best—

Q189 **Chair:** Okay, the door is open. That is great. Are the Government going to respond formally to the Hendry review at some point?

Claire Perry: I would need to check with the Secretary of State as to whether this statement is the response, but we do meet with Mr Hendry. We are extremely grateful for the work he has done. Sorry, basically "I do not know" is the answer. I will check with my Secretary of State.

Chair: Okay. I appreciate you have been here for over an hour, but I would like to give everyone another chance, if I may.

Q190 **Geraint Davies:** Just a couple of quick questions. The people responsible for the financial management of Welsh Water said to me that if the project had been approached with long-term bonds it would have developed a more cost-effective basis. Are you able to relook at the same technology on a different financial model that might deliver the same thing cheaper?

Claire Perry: We would have to look at every proposal as it came in, but you are right to spot that green bonds have become an area. For example, Thames Tideway has been one of the first corporates to issue a green bond on the London Stock Exchange and increasingly—assuming they are not green washing, we have to be very careful that they meet the criteria—the London Stock Exchange is listing many green bonds now from private companies and from different governance. We would be happy to look at any proposal that came forward.

Q191 **Geraint Davies:** The issue with this project is not about the technology or the energy; it is simply about the cost, isn't it?

Claire Perry: It is about, as we have talked about, the tests that we run. It is not just looking at one specific item. It is the whole programme and it is trying to understand the cost of that programme on the energy system and the cost that will be borne by taxpayers and bill payers.

Q192 **Geraint Davies:** Can I ask something that is completely different? Are you still considering the Severn Barrage or something equivalent? I know there was a scheme of water wheels at one point—I read about it in *The Economist*—along the Severn for General Energy. Are you looking at any alternative water schemes?

Claire Perry: The Severn Barrage was around when we moved down to near Clevedon in 1970. My understanding was the environmental costs were just too very substantial. Water wheels were effectively the kind of tidal turbine technology or the tidal stream technology that is still out there and we are still investing in.

Q193 **Geraint Davies:** Presumably we could do it after Brexit. It was because it was a breach of the habitats directive, wasn't it?

Ashley Ibbett: That is right. There was a very lengthy process of consultation on the issue of the barrage on the Severn, and the conclusion the Government reached at the time was that they did not think they would be proceeding with that.

Claire Perry: My strong belief is that we will be maintaining at least equivalent environmental protection standards post Brexit.

Q194 **Geraint Davies:** I am not proposing it. I just assumed you will not be trashing the environment after Brexit.

Claire Perry: We have been very clear that we want at least as good, if not stronger, environmental protection after Brexit and the intention is to deliver that.

Q195 **Tonia Antoniazzi:** I want to make one final point. You say that your door is always open to discussion, but the Department has not replied to meeting with Tidal Lagoon in the run-up to this meeting. You have not had that many meetings, from what we can gather. Is there a reason for that? The Secretary of State for Wales has had regular meetings with them.

Claire Perry: I believe there have been meetings at the official level continually, certainly between the Welsh and the UK Governments, and there have been meetings with the companies. There was a proposal put on the table and we have been forensically scrutinising that, for all the reasons we talked about. We wanted to make sure that no stone was left unturned in doing the value-for-money analysis.

Q196 **Tonia Antoniazzi:** Are we able to have the dates of those meetings so that we know for our records?

Claire Perry: Are we able to release that? I will have to take that away, sorry.

Q197 **Chair:** To be fair, I do not see why we would not be allowed to know how many times officials from TLP have met with officials in BEIS. I think that is a reasonable request.

Claire Perry: I can tell you, for example, I know that in this year alone our officials have met our Welsh Government counterparts 10 times. We will check to see if we can write to the Committee with all the various meeting dates.

Chair: That will be very helpful. I am going to draw this to a close, and I am going to ask if Committee members could stay behind for a few minutes afterwards—that would be helpful—while we meet in private. Thank you, Minister and Mr Ibbett, for coming again. I am afraid I am going to have to ask the members of the public to leave as well.