

Business, Energy and Industrial Strategy Committee

Oral evidence: Industrial Strategy: Sector Deals and Productivity, HC 663

Wednesday 17 October 2018

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Watch the meeting

Members present: Rachel Reeves (Chair); Vernon Coaker; Drew Hendry; Stephen Kerr; Peter Kyle; Sir Patrick McLoughlin; Mark Pawsey; Antoinette Sandbach; Anna Turley.

Questions 201 - 277

Witnesses

I: Benj Sykes, Vice President, Ørsted; Andrew Jamieson, Chief Executive, ORE Catapult; Emma Pinchbeck, Executive Director, RenewableUK.

Examination of Witnesses

Witnesses: Benj Sykes, Andrew Jamieson and Emma Pinchbeck, Executive Director, RenewableUK.

Chair: Thank you very much to the three of you for coming to give evidence this morning as part of our inquiry on the industrial strategy and on sectors and productivity. We are obviously looking this morning at the offshore wind sector as part of our inquiry. We are going to kick off with a question from Sir Patrick McLoughlin.

Q201 **Sir Patrick McLoughlin:** I am not sure who will start on answering this, but I wonder if you can give us an outline as to how you think the UK is doing as far as global offshore wind and energy are concerned.

Benj Sykes: Thank you for your question. Offshore wind is thriving in the UK. We kicked off this whole exercise around 2000, with a couple of turbines in Blyth in Northumberland, which are still turning, just, and still producing electricity. They are not very offshore, actually; I think you can just about reach out and touch them from the shore. Since then the industry has absolutely flourished, and we are now at a stage where we have almost 2,000 turbines in UK waters, approaching eight gigawatts of capacity. What does that mean in real numbers? It means around 8% of Britain's electricity supply coming from offshore wind, enough to power almost 7 million homes. It has become a major player in the electricity system.

Q202 **Sir Patrick McLoughlin:** When you say it is enough to power 7 million homes, is that completely powering those homes?

Benj Sykes: Yes. That takes into account the variability of output. Over a year, our offshore wind fleet produces enough electricity into the system to match the consumption of 7 million homes over the year.

Q203 **Sir Patrick McLoughlin:** Would you say that we are in the lead, or are we still lagging behind other countries? What are we doing differently to those other countries?

Benj Sykes: We are definitely the global leader. We have more capacity installed in the UK than any other country currently has. However, things are starting to change.

It may be worth mentioning that the reason we have such a strong lead as a country is because we have had consistent policy ambitions around offshore wind at a certain level. I am sure Emma will comment on that in a moment. We have seen the cost of offshore wind come tumbling down as a result of that steady build-out, the ability to use learning and the competition that has come in through the way in which projects are contracted. All of that has enabled costs to tumble. We have seen the costs of new projects halve over just two years, and that means the rest of the world is now into this game as well.



HOUSE OF COMMONS

Q204 **Sir Patrick McLoughlin:** Did you think costs would tumble in the way they have, or has that been a surprise to you?

Benj Sykes: Andrew, my colleague here, ran the Cost Reduction Task Force back in 2012, I think.

Andrew Jamieson: I am trying to remember the date. When I was chair of the trade association, and Charles Hendry was Energy Minister, I prepared a report that took some nine months to put together, to look at getting to less than £100 per megawatt hour, and the timeframe we could do it in. The report was confident that we could break that target by 2020.

It has surprised everyone positively that of course we are now showing we are outstripping even that projection. At that time, that was taking costs out of about 30% to 40% on the average projects that existed at that time.

Emma Pinchbeck: I find, when I am talking to the public, Ministers or the media, that there is something about speed and about scale with this sector that is poorly understood. We did not expect the costs to come down so quickly, and the speed of change in the energy sector now is faster than we have seen ever in energy. You have to look to something like telecoms to find an equivalent. We are expecting those cost reductions to continue, so certainly we are on a route to subsidy-free in the 2020s.

The other thing is scale. That is the point of the sector deal, rather than energy policy, in that this is now the country's fourth biggest infrastructure project. It is responsible for around 23% of all construction contracts in the UK. It is huge. We employ 11,000 people. It is as complex as something like aerospace or automotive, and well over 90% of that economic output is in places other than the south-east of England, which is also important if you are thinking about productivity.

As the others have said, we are a market leader in this, and other countries in the world are now stepping up and looking to the UK for exports. We are exporting to over 20 countries worldwide, and my head of policy, for example, is currently in China, talking to their industry about how they can benefit from the learnings we have here from the supply chain.

Benj Sykes: I was just going to add one thing about scale, which may be helpful. I mentioned two turbines, our first offshore windfarm in the UK. We are now building windfarms that have the same output as a nuclear reactor. These are power stations. They are not what you might think about when you think about wind power. They are at a scale that is industrial. They are utility scale, and they are able to scale up to be the backbone of the power system in the UK.

Q205 **Sir Patrick McLoughlin:** Were you involved in the first two?



Benj Sykes: I was not. I have a background in oil and gas. I left the oil and gas industry after 20 years as a geologist, and have been working in the offshore wind sector for about 10 years.

Q206 **Sir Patrick McLoughlin:** Are you surprised by how much it has improved?

Benj Sykes: It has been an extraordinary journey. As Andrew said, we set an ambition—we would not agree to it being a target—of getting down to £100 per megawatt hour by 2020. We are down at £57.50 already, with projects contracted last year. We have massively exceeded anyone's expectations. As Emma said, there is more work to be done; we are already heading down the cost curve but we are already competitive with other forms of new-build electricity generation.

Q207 **Sir Patrick McLoughlin:** Are we doing enough to exploit this?

Benj Sykes: That is a good question. To some extent there is more we can do, and I am sure we will come on to the sector deal as an important instrument for that future for the sector. The consistency of policy ambitions has been important. We now have an opportunity. I mentioned that the global offshore wind industry is really taking off, and that is because countries around the world are thinking that this has to be the clean, green future that is affordable for economies all over the world.

There is a huge opportunity that we can grasp, and in terms of the jobs growth that Emma has mentioned, we are currently at 11,000 to 13,000 and are looking at getting up to 27,000-plus by 2030, if we can get our sector deal away. A lot of that will be driven by exports. We are looking at a fivefold increase in exports around the world, as that global market takes off.

It is a double-edged sword, of course, and we need to not lose sight of the fact that all of these other markets will be looking to build their own supply chains. We have a great first-mover advantage, but that does not last forever.

Q208 **Anna Turley:** Building on that success story, could you say a bit more about how Government support has helped the industry to flourish? You talked about the continuity and security of policy being important, but what other Government support and investment has enabled the sector to flourish?

Benj Sykes: There are a number of things that have happened over the last 10 years, I guess. We have had the renewables obligation regime, which has consistently allowed offshore wind to be deployed. I know it has had some discussion, but the process through EMR whereby we were able, through the FID enabling process, to keep projects moving forward, is what has enabled us to get down the cost curve as far as we have. The prices you see today are very much the result of that continuity of deployment of offshore wind.



HOUSE OF COMMONS

The fact that we have had all three main parties being consistent on policy around offshore wind has been important, because it is a global industry. We are building these windfarms with material, equipment and expertise from around the world. Around the world everyone has seen that there is not a party political divide on offshore wind. That has been really important in boardrooms outside the UK, to see that clear signal.

Q209 Anna Turley: Are there any challenges or things you would do better, if we had our time again?

Andrew Jamieson: There are always things that we could do better. I am trying to think of something that has been of such an impediment. I think, as Benj said, it is about having the vision to push through with offshore wind. We are an island nation surrounded by water. That is always my imperative as to why we should be looking at these things. It is an energy resource for us to be looking to try to best exploit, by which I mean use.

The policy angle has been supportive. There are always elements across Government, within Whitehall and elsewhere, to improve joined-up thinking. Linking planning more readily to Government objectives on climate changes, for example, can expedite matters.

Coming back to that Cost Reduction Task Force report that I chaired some years back for the then Energy Minister, these are things that we highlighted. There were about 17 actions, all with names against them either in industry or in government, to do the endeavouring. What I have seen out of that report is a continuation of industry and Government working hand in hand to tackle these issues.

Emma Pinchbeck: I came into this job two years ago, and there has been a remarkable change, because of the cost reduction, in how renewables as a whole, but particularly offshore wind, is being treated. Some things that have really helped are that we have had a clear budget set now for the next round of auctions—that £557 million commitment—and a commitment to regular auction cycles, which is something that happens in other countries where they have auction systems. This is a global market, so having a really clear timetable helps an international industry prioritise the UK market, when they could be planning to go elsewhere or looking around the world.

The other thing to mention is that the CFD has been remarkably successful. We hear a lot about the CFD in a negative, subsidy conversation, but that auction system has been a competitive way of driving investment into a new technology, which is now delivering, across the piece, the cheapest forms of electricity that are available to UK consumers. There are conversations going on in government at the moment about the future of the CFD and other auction systems such as the capacity market. That enduring mechanism has been very valuable, so we should be cautious before jettisoning it.



HOUSE OF COMMONS

Andrew is the person to talk to about R&D, but we have been really good at making sure there have been regular R&D commitments. One of the things in the sector deal we want to maintain are the current levels of R&D investment, which are about £40 million or £50 million per year.

Q210 Anna Turley: In the context of trying to learn the lessons for broader sector deals, would you use your learning to encourage more ambition from Government? It does not seem that long ago that people were dismissing offshore wind as too expensive, the supply chain would never come to the UK and it was flawed. Now, of course, we are looking at other things like the tidal deals and so on. Would you say to Government, "Take the risk, create the framework and give them the support, because look what we have been able to achieve"?

Emma Pinchbeck: I have been struck this week that the conversation on 1.5 degrees, the IPCC report from scientists and what we should do about decarbonisation has been, "We first have to consider costs". While that is absolutely true, I do not think we have learned the lessons of investment. These policies that were designed to invest in early-stage green technology have now delivered a huge infrastructure project with enormous supply chains and value to the UK. Yes, I think we should be doubling down on that in the industrial side for this sector, but also looking to invest in other technologies, like wave and tidal and like onshore wind, which are cheap and valuable for domestic and international consumers, for export.

Q211 Antoinette Sandbach: Mr Jamieson, I wanted to ask about the way you feel the Catapult has supported the offshore wind sector. What have been your key achievements?

Andrew Jamieson: I am the chief executive of the Offshore Renewable Energy Catapult. We are based primarily in Glasgow, but with very large, world-class testing assets in Blyth in the north-east of England. We have the biggest machines for testing the largest components on a world stage.

We have a number of programmes. We work with the biggest players, so the turbine manufacturers, helping them to commercialise and test the large components, such as blades up to 100 metres long, and we are about to commission what we call a drive train to test the box that sits at the top of the turbines up to 15 megawatts. They are the largest in the world.

We take the challenges for those industrial player about what needs to be remedied down the layers of the supply chain, all the way through to the SMEs, to come up with novel ideas and solutions, and we work across the academic community as well, which is quite often an untapped source of knowledge and intelligence, to find answers to these industrial challenges. We then do the opposite: we work with those who have an emerging idea that the industry is not quite looking at yet, and help them to go through and become more commercialised.



HOUSE OF COMMONS

Q212 **Antoinette Sandbach:** It would be helpful for us if you could point to some of your successful stories, perhaps not now, but if you have not sent that information to the Committee, it would be useful if you did.

Andrew Jamieson: I would be happy to send you examples of companies we have worked with.

Q213 **Antoinette Sandbach:** Clearly there is a concern after the 2017 Ernst & Young report found that you were one of the five Catapults that fell short by about £25 million in delivering on your one-third/one-third/one-third funding model. Why was that? Why were you not meeting that model? What has the centre done to remedy it?

Andrew Jamieson: The Ernst & Young report was measuring our success a few years from inception. It takes a while to build up skills, experience and track record for others to come and use our products and services. Ernst & Young showed there were signs of benefit coming back into the UK economy, but that should continue to be measured. The biggest thing we have done since the Ernst & Young report is to sharpen up our reporting on the benefits, and made sure the gross value added that we bring to the UK economy is demonstrated back to the UK Government.

Q214 **Antoinette Sandbach:** I am asking specifically about the £25 million. Why have you fallen short on that? Has the board taken steps to rectify it?

Andrew Jamieson: Yes, our plan has accelerated the expectation of industrial funding that we want to see come into the Catapult, because one third is meant to come from Government support, one third is to come from competitively won grants and one third is to come from industry.

Q215 **Antoinette Sandbach:** Is it the industry section that has let you down in terms of R&D funding?

Andrew Jamieson: That is a powerful phrase. It is up to us to earn our stripes with industry, for them to come and invest. We have just won a multi-million pound deal with GE Renewable Energy to come and test their manufacturing. It is a deal over five years. We did not have that fully in the bag when Ernst & Young were coming to measure. We were in live discussions with them at the time. Had we done that, we would have been able to rebalance those figures much more readily.

Q216 **Antoinette Sandbach:** Do you think there has been enough investment in R&D from the offshore industry, particularly in the UK, and have the Government held up their side of the bargain and given you the funding?

Andrew Jamieson: I am satisfied with my funding, yes. It is an industry that has grown away, since privatisation, from the research and development angle of things. These were all things that went out very quickly as an overhead cost. I think, however, the offshore wind sector is seeing much more readily the opportunities in investing in research and



HOUSE OF COMMONS

applying demonstration towards that research, to help bring the cost down. It is bringing the cost down, but it is also affording the opportunities for other players to come into the sector with new products and services. We will come on to the sector deal, and I find that one of the most attractive opportunities that we have in the UK.

Q217 Antoinette Sandbach: Can I ask you about the opportunities that your centre affords more widely in terms of work, and providing equal opportunities? Are you able to tell the Committee how you are encouraging women to come into the industry, and what level of female engagement or employment you have? Do you deliver apprentice programmes, for example, that include females?

Andrew Jamieson: Our position currently is very typical of engineering at large, which we recognise is not good. We are about to publish our annual report, which will give the statistics in full on where we are. We have 120 men in the business now, with 37 females. It is not a great position.

There are three things we are working on to attract new young ladies into the business. We are doing that by reaching out through STEM engagement right into schools. I have staff going to engage in schools. We have a project in Levenmouth in Scotland, where we own a large turbine for demonstration. We fund an officer who goes and speaks in schools and encourages young people about what engineering is as a career, and obviously in renewables.

It is then about retaining women when they are in the business, and supporting them, and recognising that they might need more support and development than we might have been able to afford in the past. I am recognising we are in a very typical industry situation, but that is not a good position to be in, and it has to be rectified.

Q218 Stephen Kerr: Mr Sykes, you co-chair the Offshore Wind Industry Council. Who is the other co-chair?

Benj Sykes: It is the Energy Minister.

Q219 Stephen Kerr: Was the sector deal that you are proposing done without her involvement?

Benj Sykes: The way the sector deal is working is I am leading the work from the industry side, the two parties to the deal being Government and industry. There is obviously regular engagement both with the Minister and her office but also with the Department, as we develop our proposal and get into the negotiation phase.

Q220 Stephen Kerr: Was the Minister involved in the development of the proposal?

Benj Sykes: Involved in the sense of testing out, finding out where things should go. The sector deal process has been an interesting one, because it has not always been that transparent exactly what the process



HOUSE OF COMMONS

is, if there is one. Through a lot of dialogue, we have reached the point now where we are very much ready to step up and agree a deal with Government.

Q221 Stephen Kerr: That is quite interesting. In relation to the sector deal, there was not a clear process? Can you expand on that?

Benj Sykes: That is it, really. There has not been a clear process.

Stephen Kerr: That is it in a nutshell.

Benj Sykes: The industrial strategy Green Paper came out at the beginning of last year. On the back of that, I got my industry colleagues together and said, "Look, this is a great opportunity. We are a successful industry. We have a lot more work to do. Let us cement our partnership with Government through a sector deal". However, in terms of exactly how to do that and what it was, it has been a little bit of wrestling with—

Q222 Stephen Kerr: It was not clear what it was and it was not clear how to get to what we did not know it was.

Benj Sykes: Yes.

Q223 Stephen Kerr: You have put forward some proposals now. You have been very clear about that already this morning. What are you looking for from Government?

Benj Sykes: Interestingly, our initial ambition as a sector and our initial ask was that we get clarity on this future pipeline of CFD auctions, because historically we have seen auctions being announced one at a time. As Emma has mentioned, the Minister said in late July that there would now be regular two-yearly auctions, so that piece is there.

The other thing is the scale of ambition. What the Minister has said at the moment is one to two gigawatts a year. If we want to realise the supply chain benefits and the job opportunities around the UK that this industry offers, we need to be able to scale this up to two gigawatts of deployment a year, because that creates the scale and regularity of pipeline that will get investors into the supply chain. We still need to get that; we need to go from one to two gigawatts.

Q224 Stephen Kerr: Is that intention clear?

Benj Sykes: Yes, and a lot of it is driven by the budget. Emma mentioned the £557 million. We are very confident that we can deliver two gigawatts a year, staying within the budget. In terms of talking to investors, I was talking to one yesterday looking at building a factory in the north-east that would employ 350 people. They are looking to see if there is going to be a sector deal, because without that they are not confident that the industry will have the scale in the UK.

Q225 Stephen Kerr: By sector deal, do they mean specifically these two things you have mentioned?



HOUSE OF COMMONS

Benj Sykes: They mean the whole deal. There is quite a bit in the deal apart from that.

Q226 **Stephen Kerr:** This is driven by the industry, is it not? These are things you are going to do anyway.

Benj Sykes: We are asking things of Government; Government are asking things of us. I guess that is why it is a deal. I think doing a sector deal is important. We have worked closely through the industry council now for six or seven years, with Government. We have had a strong partnering relationship. In terms of the world that we have come through, where we have all worked well together and developers such as Ørsted and others have all collaborated, those days are over, because we are now fiercely competing with each other for these auctions. You have seen the costs tumbling down; that is because we are not going to share our secret sauce with each other. Pointing slightly to what Andrew was talking about, collaboration is becoming more challenging.

The future is very much going to be built around a sector deal that enables me and my colleagues to say, "Okay, we are going to work together on certain things as an industry, as a sector, in response to certain things Government are going to give us through the deal". The deal is really important to enable that industry-level work to continue, as well as this signal to boards outside the UK.

Stephen Kerr: That is very clear. Thank you very much.

Q227 **Mark Pawsey:** I want to follow up Stephen Kerr's question, because you started off by telling us the massive success story of your industry. You said that you were thriving, it had absolutely flourished and Emma spoke about an enormous pace of change. Why is a sector deal going to make any difference?

Benj Sykes: It very much comes back to the point I made earlier, about the need to continue to hold us together as an industry.

Q228 **Mark Pawsey:** You seem to be doing that pretty well already.

Benj Sykes: We are already starting to see the areas where we can work together shrinking. We are fiercely competitive on a commercial basis, so for earlier-stage research and development, sure, but, in terms of working to build the supply chain for now, it is much more difficult than it has been in the past.

Q229 **Mark Pawsey:** It sounded from your answers to Mr Kerr that this is totemic. It is going to be a signal and a sign. It is not going to do anything massively different that you are not already doing. You want some certainty about the future progress of Government in terms of encouraging the industry; that is understandable.

Benj Sykes: I think there are things to consider. We are looking, for example, as an industry to come together to do certain things to support



HOUSE OF COMMONS

the development of the UK supply chain in response to agreeing a sector deal. Those things will not happen if we do not agree a sector deal.

Q230 **Mark Pawsey:** What will not happen if there is not a sector deal?

Benj Sykes: For example, we are looking, as I say, at putting a programme together to support development in the supply chain.

Q231 **Mark Pawsey:** Why would you not do that anyway? It is in your interest and the interest of the main manufacturers to support their supply chain.

Benj Sykes: What is in our interest is to win auctions, because if we do not win auctions we will not have any projects to build so we will not need a supply chain. As a developer, I need to know that I am working in partnership with Government and with my colleagues in industry; otherwise, what I will do is chase after the lowest-cost way possible of building my windfarms. If I do not do that, I will not have a project to build, because I will not win an auction.

Emma Pinchbeck: Fantastically, as a trade body I get to be really neutral across both the supply chain and the developers. It is helpful to think about what the sector deal is trying to achieve as industrial strategy rather than energy policy. The driver through the CFD, for everyone in this sector, is to get costs down for consumers. That is the main priority. There are other benefits to the UK that can be invested in by Government for the supply chain and for productivity, such as, for example, making sure that the workforce is diverse, making sure that we are pulling in workforce from around the UK and helping our oil and gas industry transition into renewables. It is also about ensuring high-skilled jobs and training on the supply chain side.

Q232 **Mark Pawsey:** This is motherhood and apple pie. This is what everyone wants to see anyway. What I am struggling to understand is how a sector deal will make any difference to doing the right thing anyway.

Emma Pinchbeck: It is about locking in things like the R&D investment, and channelling it through a joined-up structure in industry that means that it is focused on doing those things as well as getting costs down. It is an international sector. If the pressure is on cost, and rightly so, then they have as much incentive to go to supply chain companies across the world, who could do this for them, or to invest in other markets. What is really nice about the sector deal is that the industry is committing to another £48 billion of investment here in the UK, and in return for that they are asking for Government to continue commitments on things like R&D, or help them in terms of reaching out to higher education institutes for diversity.

Andrew Jamieson: We have benefited enormously from competition in the marketplace. We have seen that with the costs that have come down and continue to be projected to be going down. What we have is industry going into various corners and not speaking to each other.



My view of the sector deal is that we will create some central ground for industry to come together with Government to help continue to assess the priorities, for instance on gender equality and training, but it is also about understanding the technical issues that this industry faces. Also, very importantly, as we reach forward and think about greening the entire economy—greening transport and greening the heat situation—it is not just up to offshore wind developers to do that when they are competing on individual projects. I see the sector deal as an opportunity to pull all of these things together more holistically and have a true and deep understanding, with Government, about what this industry can offer. I do not think the market alone will simply deliver that.

Q233 Mark Pawsey: You have been doing that for a fair while, but your sector is very successful. Do you not feel a bit guilty that Government are giving you all of this attention when there are other sectors that are struggling? Ought Government to be spending their time on other areas that are less successful?

Emma Pinchbeck: Do you mean across the energy sector?

Mark Pawsey: I mean across the UK industrial base.

Emma Pinchbeck: I frequently find when I talk to Government that this sector is actually the one that is overlooked. Despite £557 million and the commitment, as I said at the beginning, I do not think the scale and the industrial scale of it is appreciated by many in government.

Mark Pawsey: You are quietly getting on with things successfully.

Emma Pinchbeck: For example, there is aerospace, automotive and the nuclear industry. They are all confirming sector deals with Government. Why not this sector?

Benj Sykes: Just to chip in, we also need to look at what the sector deal delivers for the UK economy. I do not necessarily see sector deals as tools for supporting sectors that are struggling. It is about delivering the objectives of the industrial strategy. What we are talking about is a deal that will enable us to drive supply chain growth, particularly in parts of the UK that other sectors simply are not active in. Whether it is the north-east, the north-west, the east of England or Scotland, we are very much focused in those parts of the country, creating jobs—high-quality jobs, long-term jobs.

In terms of driving up productivity outside the south-east of England, it would seem to be a sector that is well positioned to deliver on the Government's industrial strategy.

Mark Pawsey: We have not heard a great deal as to why the sector deal is important. You have now told us why it is.

Q234 Peter Kyle: Perhaps, Emma, you could start by talking about the supply chain. At the moment about 50% of the components and the content for



HOUSE OF COMMONS

the British offshore wind industry is British. Is that going to increase as a result of the sector deal?

Emma Pinchbeck: The priority for the sector deal is to focus on the industrial side of the industry—jobs, skills and definitely the supply chain too. My organisation, RenewableUK, is 50% supply chain companies now, and I think 50% is a pretty good number when stacked up against other manufacturing sectors in the UK. Yes, the priority is to increase this, and I think the industry has said they are looking to go to 60% of UK content by 2030, but, in addition, to target the things we are really good at. We are really good at O&M—operations and maintenance. We are really good at high-tech, high-skilled jobs. We are looking to borrow knowledge from other sectors of the economy as well. Martin Whitmarsh, F1 chief, has been looking through the offshore wind supply chain, and has made recommendations to the industry as part of the sector deal process about how we could pull learning in from other sectors, and indeed work with them so we are getting high-skilled jobs that are relevant for a number of areas of the economy.

Q235 **Peter Kyle:** It might sound like an obvious question, but what does it take to increase British content?

Benj Sykes: I am glad you asked, because I was going to jump in and answer the question anyway. Emma has said we think we can get from 50% to 60%. Just as a point of reference, automotive, after 70 or 80 years, is at 44% for manufacturing cars in the UK.

Q236 **Peter Kyle:** How do you do it?

Benj Sykes: What we have to do is improve productivity, develop new technologies and bring them through to commercialisation. What we have to do is build a supply chain that is globally competitive. One of the things that has been really helpful over the last few years is pushing developers like Ørsted, but all the others as well, to work really hard with the UK supply chain to bring players in, not just to go with the supply chains we have used for our previous projects, for example in Denmark. We need to get the UK supply chain to the point where it is winning orders globally. Of course, that means also winning more orders for UK projects.

Q237 **Peter Kyle:** I hear that. It is quite general. In granular terms, does that mean it will take more start-ups to supply specific components that at the moment you cannot source locally, or is it about getting in touch with existing manufacturers and getting them to get involved and interested in your sector?

Benj Sykes: All of the above. Martin Whitmarsh, who Emma mentioned, was the CEO of McLaren F1; he was team principal. He is very technology-focused. He has led a review of the industry's opportunities in the supply chain, and just two weeks ago launched his prospectus. That has gone out to companies around the UK. That is quite targeted at bringing new technology companies into the offshore wind supply chain.



HOUSE OF COMMONS

In terms of bringing in new technology capability, that is absolutely part of it, but it is also about improving productivity in the existing supply chain. We have manufacturers that are already successful in supplying UK projects. We need to help them to step up in terms of productivity, capability and the bottom line, so that they can start winning orders globally. That will then bring them also into the UK projects.

Q238 Peter Kyle: Andrew, there are clear implications for you. Is it your job to be picking up the phone and getting people into the Catapult, and upscaling the industry?

Andrew Jamieson: The short answer is yes. We have heard the industry council, with Martin Whitmarsh's report, talk about those three or four things, about how to better improve the current relationships between the development community, who own the windfarms, and their existing supply chain, and how to get people who are not in the supply chain to come into it. Once people are in it, how do you improve the efficiency? It all comes down, to my mind, to investor confidence. Lots of British industry can see the booming scale ahead of them in offshore wind, but they are never quite sure whether now is the time to invest and to make a new component. They do not know when it will be market-ready or whether there will be someone pulling that order through for them.

As an example, I heard recently that the cost of developing a brand new offshore wind turbine is in the hundreds of millions of dollars for a big OEM to do. That is quite a lot of risk. Take all of the various components that go into that, and that is down to smaller suppliers to do that. They want to know that if they are going to invest for a couple of years to test and trial a new component that they are actually going to be used. That is where the industry comes together to say, "Let us look at the specifications and make sure that the standards and the qualities that are being set are correct", to improve their chances of being procured in the future. These are things that historically this industry has not satisfied, and that is why we have had a low starting point from the UK supply chain. We can see where there are opportunities to improve. It is all about improving investor confidence for those manufacturers.

Q239 Peter Kyle: Emma, what you have described and what we have heard is a very complex, global supply chain of talent, finance and components. How is Brexit going to impact this?

Emma Pinchbeck: Thank you for that question. The answer is the same as it would be for any complex industry, in that we just do not know the detail yet, but we do know that, firstly, no deal would be very bad news for the industry. Secondly, because it is complex we could really do with some more engagement from Government, particularly DIT. The reason for that is that most of the projects—especially the projects that have already come through the auctions—will be going through construction in March next year, and we need to move components and labour across borders with relative ease.



HOUSE OF COMMONS

In each project, we are going to have a mix of international—third country—and UK and European companies working together to deliver. On top of that, we have companies in the supply chain exporting abroad, and we do not know what the law will be to cover things like dispute resolution yet. In terms of physically moving electrons, the energy sector is complicated. I have seen from the notices last year, there are plans to do something with the EU ETS and carbon pricing, and we look forward to seeing more on that in the budget. It is also about keeping the lights on in the common energy market, because we will want to trade across borders, and also Ireland is an issue for us, as it is in bigger geopolitics, in that we have a single energy market in Ireland and Northern Ireland.

Q240 Peter Kyle: You are describing a deal that sounds pretty bad, but you also said that no deal would be pretty bad. Could you just illustrate that? What is “pretty bad”?

Emma Pinchbeck: We just do not know. We have not put a number on it. We do not really want to. Industry is planning for everything from how they are going to move vessels in UK and international waters to get out to projects, how we are going to make sure that components that we need to put up on the wind turbines are not stuck.

Peter Kyle: This could happen.

Emma Pinchbeck: This could happen.

Peter Kyle: It could happen in a few weeks.

Emma Pinchbeck: In terms of how we are preparing, RenewableUK is planning, in the new year, to work in particular with our supply chain companies, especially those that are too small to have public affairs or other resource, on a one-stop shop on what happens in the event of no deal. Our public affairs team have been sharing the news that comes out of Government whenever we get notices, and we have had several meetings with DIT and with BEIS on what their plans are, but it would be good to step that up.

Q241 Peter Kyle: It sounds like even the deal you are anticipating, should there be one, would be a considerable burden on your ability to move components, energy, talent and so forth. Are you thinking of a number, in terms of the impact? This is a very price-sensitive market you are operating in. If there are even slight burdens in addition to this, there will be an impact on your sector. Could you just illustrate, with clarity, what you feel that that will be?

Emma Pinchbeck: We have numbers but I am not in a position to share them, partly because, as the trade body, if we put numbers in the market we have an impact on the market. We are also not yet clear what will happen at the end of this particular round of negotiations, and, if there is a withdrawal agreement, that looks very different from no deal. Our members have access to that information but we are not yet sharing it publicly.



HOUSE OF COMMONS

Q242 **Peter Kyle:** Is there any scenario that you have put to your members that is a positive one, where Brexit will deliver more income, less friction and more opportunities for your sector?

Emma Pinchbeck: This is a forward-looking industry and they are used to coping with policy change of all kinds. What is really important—and if anything has come out of this conversation it should be this—is that it is also a British industry. We have lots of UK companies here, who I am sure will look to make the best of whatever market we have.

Q243 **Peter Kyle:** In the scenario you have put to your members it is a burden.

Emma Pinchbeck: We did look at positive scenarios too. We have looked at the full range, but again I cannot share any of those with you at this stage. It is for my members only, I am afraid.

Q244 **Peter Kyle:** Can you tell us what a possible benefit is?

Emma Pinchbeck: One is that the British Government's carbon budgets are actually further ahead in ambition than some of the EU's are. There is a negative consequence, possibly, in the UK not being part of the EU bloc when it comes to things like negotiating the Paris Agreement, because we are very ambitious as a country on targets. Of course, that has filtered down into really good domestic low carbon policy, but also energy sector policy. We have a real strength there, and it would be good to see the UK Government, in the event of Brexit, pushing on more with low carbon sectors of the economy where we think we can make progress and beat the rest of the world.

Q245 **Drew Hendry:** Following that, I have to put my questions in the context of you being able to navigate all of these difficulties, but I wanted to pick up on something that Benj was talking about earlier, and ask you all about the sector deal. Would it have specific benefits for the different nations and regions? Who is set to benefit?

Benj Sykes: One of the things that we are putting forward in the sector deal is the development of clusters around the UK. We already see one emerging in the Humber region, with Hull, Grimsby and other towns in that area starting to come together and work together with companies in the offshore wind industry to build skills and capability. It is absolutely delivering in terms of regenerating those parts of the Humber. We are looking at seeding clusters in Scotland, in other parts of England and also in Wales. The idea is that these clusters would bring together local enterprises, or the agencies such as Scottish Enterprise and so on, to come together with industry and with local academic institutions to drive innovation, working with Andrew's Catapult organisation, driving skills through the skills agenda that we are developing and through the targets we are going to set ourselves around developing and diversifying our employment base.



The answer is, yes, we are looking at pushing this out around the UK. Each of these hubs will need to drive itself once we have seeded it, and it will be really built on the creation of globally competitive supply chains that will grow in that. We have seen this happen in continental Europe, in places like Esbjerg in Denmark, Cuxhaven in Germany, and Bremerhaven in Germany. We know that the model works. In answer to your question, yes, it will absolutely push things out into the regions of the UK and into all parts of the United Kingdom.

Andrew Jamieson: This is where the sector deal comes into its own. We have touched on the fact that individual developers will compete. They will do what they need to do for their own project, but you get a synergistic benefit by asking people to think about regional aspects and place, and where they can come together more naturally to work with the local bodies, companies and stakeholders there, to self-sell and self-organise. They will be much closer to the intentions, needs and abilities—

Q246 **Drew Hendry:** Can anybody give me some specifics?

Andrew Jamieson: I was leading to an example. In Scotland, where clearly I am from, we have to be looking at the oil and gas sector more readily, and in particular the manufacturing side of what has been going on there with the yards whose orders wax and wane. We want to see an awful lot more come in from those kinds of jobs and give them the longevity. If we asked one individual developer to try to make that work, that would be too difficult. If you asked them to come together and think about how they can truly collaborate—again, I am coming back to my investor confidence point—why should those yards scale up to do what this industry needs? If someone could give them more and more confidence on those things, then you see those things coming round.

The other sector opportunity, I think, is with things like autonomous vehicles, robotics and so on. No one individual company from the electricity side is going to make that sector happen. Together, though, absolutely, and that is where I see the innovation opportunities for SMEs and others, which this Catapult is supporting the industry at large to be driving.

Emma Pinchbeck: As part of the sector deal, the OWIC has reached out to a number of regional bodies and groups, for the benefit of the supply chain who want to get involved in the sector. I have the list in front of me, and they have reached out to Scottish Enterprise, to Highlands and Islands Enterprise, the Scottish Investment Bank, and Opportunity North East. In England we are working closely with the LEPs, with Green Port Hull—because we already have a cluster near where the Siemens factory is—and the Liverpool City Region future energy project. In Northern Ireland, it is with Invest Northern Ireland and Enterprise Northern Ireland, and in Wales it is with Business Wales and the Development Bank of Wales.



HOUSE OF COMMONS

We are also tying in with UK-wide sources of funding and research for the supply chain, including Innovate UK and the research councils, but also Horizon 2020. I did not mention it when looking at Brexit impacts, but another one we are worried or concerned about is access to European-wide funding, including funding from Horizon 2020.

Q247 **Chair:** How much funding do you get?

Emma Pinchbeck: Off the top of my head, I do not know, but I can send that to you.

Chair: If you can send that to us, thank you, that would be helpful.

Q248 **Drew Hendry:** Based on that, would you be expected to be heavily involved in the UK Government's proposed local strategies?

Emma Pinchbeck: Yes. In fact, in planning terms, one of the things that has been very helpful is for renewables developers as a whole to be working closely with communities and local authorities on the ground. They are actually pretty good at that, so we would expect to be involved with any work the Government are doing there.

Q249 **Drew Hendry:** Are there specific parts of the UK where these strategies could have the most impact for your sectors?

Emma Pinchbeck: Just to stereotype the renewables industry, this will change when the Crown Estate publishes where the next development sites are for offshore, but broadly at the moment down the east coast we have a huge amount of offshore wind development, with some sites on the west. Marine energy, so wave and tidal, is down the west coast, down into Cornwall and up in the Orkney Islands in Scotland. For onshore wind it is across the UK but the best sites for development are in Scotland and Wales.

Where we have a concentration of renewables, we tend to have a very good connection with local MPs and with LEPs and local authorities. The industry is also used to engaging with community groups as part of what they do in terms of their planning and development bit of projects.

Q250 **Drew Hendry:** I would like to move on to the types of jobs. The OWIC is proposing a deal that could mean more than 27,000 jobs by 2030. I know you have touched on this earlier in the session, but what kind of jobs are these?

Benj Sykes: There is a mixture of jobs. There are manufacturing jobs, and particularly, as Andrew has mentioned, around some of the new emerging technologies, such as robotics, autonomous vehicles and all of those higher-end technologies, but it is also manufacturing some of the more straightforward components that go into our windfarms. One specific example would be the cables that take electricity from individual turbines to the substation. They need a special type of protective system around them as they come out of the base of the turbine foundation. Those are manufactured in the UK, in the north-east of England. That is



HOUSE OF COMMONS

a business that can expand as the industry expands, if they have confidence that there is a pipeline of opportunity for them.

There is also a lot of growth, as Emma has mentioned, in operations and maintenance. Every time we open up another windfarm, we create 100-plus new jobs in association with that specific windfarm. They are very much across all areas, but they are typically skilled and semi-skilled jobs.

Q251 Drew Hendry: On the skills, what specific skills are most needed? Are the Government doing enough to support the development of those skills?

Benj Sykes: Engineering is the key thing. I am sure you hear about STEM all the time. If I could voice one frustration with the sector deal process, it is great that each sector has been asked to come up with ideas; STEM education is one area where every sector I have spoken to says we need to do something about bringing more people, particularly girls and young women, into engineering. It would seem to be a sensible thing not to do sector by sector, because ultimately we are all trying to achieve the same thing, which is to get more people into this space of engineering and technology. We are very focused on that.

Q252 Drew Hendry: Do you feel that is inhibiting?

Benj Sykes: I do not think it is inhibiting. It is more that it is an opportunity missed. We are collaborating very closely with oil and gas, with nuclear and with other industries that need similar skillsets to join those dots, but it is absolutely also a role that Government can play.

Emma Pinchbeck: 85% of the energy sector as a whole is still men, so yes, I think it has been inhibiting. To talk about specifics, which we have broadly managed not to do in this evidence session, one of the things that the sector deal is committing to is a set of really targeted training schemes. They are looking at both transitioning skilled workers from other industries into offshore, so, for example, a common passport; if you are a marine diver working on an oil and gas rig, it is very difficult at the moment for you to transition to being a marine diver doing assessments and surveys for offshore wind. That is do with things like your health and safety certificates and your training certificates and how they move across. The sector is taking that on and saying we will have a passport, and we will try to make that something that can also apply across countries where possible.

They are looking at standardising the curriculum and the career pathways into this industry, and they are looking to establish T-levels—education for 16 to 19-year-olds with higher education colleges. Some of those we are looking at diversity targets and quotas with scholarships attached.

Q253 Drew Hendry: Is there enough being done on diversity, do you feel? If not, what would you do differently?



Emma Pinchbeck: Diversity is a soapbox I like to stand on and talk about fairly often, from a gender side but also including black and minority ethnic targets, and also social demographics, so making sure we get people in from different bits of society and regions. This industry has been really responsive to that. Nobody is sitting here saying that it is currently a diverse enough sector, but I have never found this industry to be particularly defensive about accepting that and looking to do something about it, and one of the best things in the sector deal is the thought that has gone into skills and the future workforce.

If you target STEM subjects across the board, if you get training right and if you reach out to people when they are young enough, that in some ways solves the diversity problem in itself. On top of that, they have set targets for gender diversity: for 33% of our management functions to be women by 2030, up from 17% now. In the industry as a whole, we have set targets.

Q254 **Drew Hendry:** Going just a little bit further on encouraging women and girls into the industry, how would you remove those inhibitions? What would you do differently?

Emma Pinchbeck: This is now from a RenewableUK point of view rather than the industry, there are three broad things we see. The first is about training, skills, development, STEM subjects and getting to people while they are still thinking about what they want to do with their futures. The second is about business and workplace practices. In our business, we found that things like flexible working policies, transparency over pay, mentoring and management culture all help people progress. Paternity leave helps men and women to make sure they have time with their family as well as time at work.

Lastly, it is visibility—I say that while sitting in the Select Committee. We have a list called the Switch List. It is publicly available. Companies can download it. Events managers can download it. We set targets at all our industry events now to make sure we have at least one third women on our panels, and we found that when we said that to our events team they said, “That would be great, but we just do not know who to ask”, so we have a publicly available list now, which is crowd-sourced, for women to nominate themselves and their subject areas.

Chair: Gas storage.

Emma Pinchbeck: You should be on it, Rachel. You can put yourselves on it. We will hold your contact details safely under GDPR, but you can say not only what you work on but what you are skilled at and what you can talk about in the hall. We are hoping that will help. We are going to do more of that kind of targeted interventions.

We also have a couple of really good energy campaigns going. One of them is Powerful Women, run out of the Energy Institute, but there is



HOUSE OF COMMONS

also Entrepreneurial Women in Renewable Energy, and the WISE Campaign, and others. We try to co-ordinate our work with them too.

Andrew Jamieson: There are some wonderful initiatives going on in our sector to improve gender equality and ethnic balances. I am just going to warn you that when people think of skills in our sector, they will typically think of a man in a boiler suit, carrying a spanner. There will be some of that, as we look into the longer-term future, but we are increasingly looking at the digital age and what that means for mathematicians and other skills and sciences to come into this sector. They break out of these walls of what have been the traditional inhibitions for young people, male or female, going into engineering.

This is my 30th year in the electricity industry. It has never been more exciting, in terms of the opportunities that are out there for changing how we think about electricity and use it, but also how we get our young people into it and where they are going to come from. They will not all be engineering disciplines as historically observed.

Q255 **Antoinette Sandbach:** Mr Sykes, I think it is a little complacent to say, "Actually, we should leave it to the Government".

Benj Sykes: Sorry, that is not what I meant.

Q256 **Antoinette Sandbach:** When we went up to the Sheffield advanced manufacturing centre, they had less than 7% women doing the apprenticeship courses. I would argue that industry has a real responsibility to look at its supply chain and require not only 33% within the management function, but the engineering and manufacturing function to have an appropriate level of apprenticeships and training, which ensures there is equality of access and encouragement of women into that sector.

Benj Sykes: I completely agree, and I certainly was not trying to suggest the industry is in any way abdicating its responsibility. I was simply making the point that when it comes to encouraging people, particularly primary and secondary school women, into technical and engineering skills, that is the same challenge that many sectors face, and it needs a joined-up approach.

However, absolutely we as Ørsted are doing apprenticeships and we have female apprentices in our operations and maintenance teams offshore. It is not just about bringing women into management. That is important, and that role-modelling is something we are also pursuing as a company, in terms of setting quite ambitious targets internally for how we will drive a better gender balance within our management structure.

In the supply chain, Mitsubishi Vestas and Siemens Gamesa are two large manufacturers with multi-hundred employee facilities in the UK. They have specific programmes to bring more women, at all levels, into their organisation, through apprenticeships, through management apprenticeships and into the management structure. There is an awful



lot more we need to do, but I would not want to suggest that we are waiting for someone else to do this for us. We are a long way from where we need to be, and as part of the sector deal we are talking about setting not just ambitions but targets.

Emma Pinchbeck: I should apologise for implying that the sector deal that Benj and the team have put together does not have broader quotas in it as well. It is just that I can only remember the broader 33% one off the top of my head. We can send you more.

Antoinette Sandbach: If you are happy to send it, that is good.

Emma Pinchbeck: Can I just say that we end up having conversations about diversity as if it is separate to commercial planning? The reason that these guys and everyone in this industry takes it seriously is that they are looking to grow and be a market leader by 2030, and 52% of the population is female and 60% of graduates are women. You are missing out on a huge talent pool if you are not bringing them forward and attracting them into the sector. It is a commercial decision.

Q257 **Stephen Kerr:** You may recall that one of the grand challenges in the Government's industrial strategy has to do with green energy. However, the way that has been interpreted in terms of the first mission, in relation to the strategy, is around construction. It is about the objective of energy use in new buildings by 2030. The resources around the industrial strategy challenge fund are all geared towards that. My question is very simple: has the grand challenge around clean growth made any impact at all in your sector?

Benj Sykes: It probably has. The offshore wind sector deal is all about driving affordable clean growth, and, as Andrew mentioned earlier, it is not just about producing clean electricity, it is about providing a clean electricity platform for decarbonisation of heat and for decarbonisation of transport, both of which are probably going to take a lot of electricity to do.

Q258 **Stephen Kerr:** Does that lead you to work with these other sectors?

Benj Sykes: It does, yes. One of the things we are looking at as part of the sector deal is to take more initiative as an industry to ask what we can do with the unique nature of our assets, which are very large and have a particular generation profile, and ask what we can do to work with large industrial users, for example, to figure out ways to exploit the generation profile of offshore wind so that they can get more affordable low-carbon electricity for their businesses. However, we are also working with the Faraday Institution and others looking at storage, smart charging for vehicles and all of these tools that will unlock more offshore wind, which is good for us as an industry but is also good for the UK. It means that we can scale up the industry and get the industrial benefits.

Stephen Kerr: That sounds positive.



HOUSE OF COMMONS

Emma Pinchbeck: It is right that the Industrial Strategy Challenge Fund is concentrating on housing. I mentioned the UK carbon budgets earlier, and by far the trickiest thing to do is heat decarbonisation. One of our biggest problems in the UK, from an infrastructure point of view, is the need to retrofit a lot of our housing. That is fine, but, to Benj's point, the power sector has been a huge success story in terms of decarbonisation, but how it then interacts with what will happen in the rest of the economy is key to maximising the benefits of UK consumers. We are in the middle of an industrial revolution across the whole economy, and if we do it right and we go for renewable, flexible, smart systems, we think we will save consumers up to £8 billion a year, versus doing something that is less efficient, less flexible and less renewable.

What is key about the sector deal and what they are targeting is making sure that they get those systems right. That is one of the reasons, when we were asked about skills, we were saying that digital, AI and cross-sector skills are going to be really important, because all of this stuff will have to work together.

Andrew Jamieson: Very quickly, I would like to see more come out of the Industrial Strategy Challenge Fund towards offshore wind, frankly. Offshore wind is set to be a key proportion of the electricity supply in the future. I think the programmes related to ISCF are designed towards those who can vote with their feet at the moment in terms of the existing supply chain. We are growing our supply chain, not just because we want to see a target met. It is because it is the economic advantage the country needs to capture. We need growth programmes that pull all of that through, which is what the industry council is trying to do with the sector deal. It has overlooked one of the Government's key needs in having this energy source coming in.

Q259 **Stephen Kerr:** You would like to see the challenge fund used more for that?

Andrew Jamieson: Yes. There have been various competitions set under that, which the industry has tried to take part in, but it tends to have gone to industries that know how to bid into those programmes more readily. Back to my point earlier on, the biggest advantage of the sector deal is Government and industry working like this, in terms of being hand in hand and understanding each other's priorities and how to solve difficulties.

Emma Pinchbeck: The sector deal is looking at a specific thing we want funded and will fund, which is a low-carbon system accelerator, which is a long way of saying we want to demonstrate some of these things we are talking about. We want to bring together battery storage or hydrogen with the turbines that we have, and with the institutions like the Catapult that we have, and pool funding and try some of these things on the ground.

Q260 **Stephen Kerr:** I am going to ask you generally a question about



HOUSE OF COMMONS

Government interaction in the industry. What more should the Government be doing? That is a very general question, I know. Specifically around the Catapult, what can the Government do to empower what you are doing?

Benj Sykes: Can I just quickly say, on the Industrial Strategy Challenge Fund, it has been a frustration that there is not such a strong connection between the sector deal process and the ISCF process. We attempted to get support through the ISCF as part of our sector deal. We have not succeeded yet. We hope there is another round of the ISCF that will allow us to have another run at it, but it does feel sometimes like it is not quite as joined up as it might be around sectors that have great ambitions around innovation and around research and development, such as we have in our sector deal but have not been able to connect that up with the ISCF process. Hopefully we can come forward with a sufficiently compelling proposal next time round, working with Andrew's team, and win something.

Q261 **Stephen Kerr:** Do you have a word on Government assistance in the sustainable energy sector in total and the Catapult in particular?

Andrew Jamieson: You were asking earlier on, Ms Sandbach, about our value for money with Government. Our forecast over the next five years is, in total, to support some 1,400 SMEs, and return £900 million in GVA into the economy. That is an awful lot of activity to be doing, and the 1,400 is properly active servicing, as opposed to having happened to have met them. This is pulling SMEs through and getting them up the value and commercialisation journey.

That needs funding, and that is where these innovation pots are meant to be inspiring and creating opportunities that are more readily accessible. It is a two-way thing. It has to be industry, with businesses like mine, working more closely with Government to make that a success.

Q262 **Mark Pawsey:** I have some questions about the process of setting up the sector deal. Mr Sykes, you and the rest of the panel told us earlier why the sector deal is important. You also said to us that there was not a clear process and that it was not transparent. One of my colleagues will ask about the criteria but has the engagement with Government been adequate and at an appropriate level, from your point of view?

Benj Sykes: Largely it has, actually. We have had very good dialogue with officials in BEIS at a number of levels, and also ministerial engagement. That is largely built on the fact that we have had this industry council as a partnership with Government running for several years. We have established quite close ways of working together to achieve things. I do not think the main challenge has been around lack of engagement; I think it has been lack of clarity as to what a sector deal looks like. It was consciously set up as a process that did not really describe what success looked like, but it has felt a little bit like blindfold darts sometimes.



HOUSE OF COMMONS

Q263 **Mark Pawsey:** You referred to contact with BEIS. Other Government Departments will be affected. Has there been a dialogue with other Departments as well?

Benj Sykes: Yes. I do not know how other sectors are working, but we have agreed that that will be worked through our relationship in BEIS. For example, in terms of the Ministry of Defence, because of aviation things that we need to sort out, the Department for Transport, Defra, and the devolved Administrations, we are working with them directly but also through the BEIS team.

Q264 **Mark Pawsey:** You said earlier that you are now ready to agree a deal. Have Government given you an indication of the likely timescale? What, in your assessment, happens from now on in?

Benj Sykes: We are confident we are ready to sit down at the table, agree a deal and launch it. Every year we hold a celebration of offshore wind, called Offshore Wind Week. That is happening in the third week of November. That would seem an apposite time to announce a sector deal. Between now and then we have five weeks to do it.

Q265 **Mark Pawsey:** Is there any indication from Government that they are ready to do something in that timeframe?

Benj Sykes: "Indications" is probably the right word. There are indications that we are now ready to move to a deal. The process from now to there is still not as clear as I would like it to be.

Q266 **Antoinette Sandbach:** Mr Jamieson, there are 1,400 SMEs you want to help. That is your aspiration. How many have you now?

Andrew Jamieson: To date we have supported over 500 SMEs. We have had over 500 academic collaborations at the same time.

Q267 **Antoinette Sandbach:** I am going to direct this to Mr Sykes: does this sector deal effectively mean that it is going to support established companies and end up as a barrier to new entrants to the system?

Benj Sykes: No. There are a number of strands to what we are proposing to do. One is working with the existing supply chain to help them improve productivity. A second one is specifically targeting new entrants to the supply chain, and part of that is the Martin Whitmarsh prospectus and review that we talked about earlier, going out effectively to showcase the opportunity. The third strand of what we are proposing to do is around innovation. It is around looking at the earlier stages of technology development, the things we will perhaps be putting in windfarms in 10 or 15 years' time, where we again have an opportunity to create a UK leading role. It is both strengthening today's supply chain, broadening today's supply chain, and creating tomorrow's supply chain, to use a catchphrase.

Q268 **Antoinette Sandbach:** I can recommend Goodwin. They are not in my constituency, but the chief executive lives in my constituency and has



HOUSE OF COMMONS

some excellent engineering expertise.

Benj Sykes: Hopefully he will engage with the industry, and come and find out how he can bring it to bear on our work.

Q269 **Chair:** Just from me, if and when you do secure a sector deal, what would success look like and how should it be monitored?

Benj Sykes: Do you mean success down the road, once the deal is being implemented?

Chair: Yes, you are going to get a sector deal; hopefully you will get some support to do some of the things you want to do. How will we know at the end of it whether it has been a success? What will it deliver that you would not do anyway?

Benj Sykes: The things that we want to deliver through the sector deal, as I say, are these clusters around the UK where we are creating innovation, academic collaboration and ultimately building SMEs and getting into the lower tiers of the supply chain. One of the things that this industry has been very focused on in the past is these big factories. Big factories are great, but supplying these big factories is a real opportunity, and much more exportable than the stuff that comes out of big factories, typically.

What I hope we will see is a strong SME base. We will see up to 60% UK content in our UK projects. We will see £2.5 billion a year of exports, five times what we have today in the industry. Those are very measurable things, and we are setting up a programme office on the back of agreeing a sector deal, which will monitor and report on these things, to BEIS and to the industry.

Q270 **Chair:** What prospects are there for boosting productivity in your sector? Obviously that is a huge challenge for the UK economy as a whole. What about in the offshore wind sector?

Andrew Jamieson: That is one of the key targets we have, in terms of helping the supply chain. There are three or four elements, as we mentioned: improving the relationships between existing supply chain and the development community; finding new people to come into the supply chain, who already serve other sectors but do not currently recognise ours; driving innovation across all of that; and improving efficiency. One of the advantages we have in the Offshore Renewable Energy Catapult is working with the High Value Manufacturing Catapult, who are experts in how to make things through a factory much more efficiently and readily. Again, it comes back to how we can help those businesses reduce their cost of entry into the marketplace. If they are more efficient, we get a win-win situation for those companies and the industry at large.



HOUSE OF COMMONS

Benj Sykes: Can I add just one thing? We have a map. We have actually done, by local authority, what the impact on productivity is of this sector deal. I am more than happy to share that.

Chair: That would be good, if you could send that to the Committee.

Benj Sykes: That will deliver up to 3% in some local authorities. You probably cannot see it, but the bright colours are all around the coastal and non-south-east bits of the UK.

Q271 **Chair:** One of the things we have been interested in, as a Committee just completing an inquiry on electric vehicles, is around batteries. It has not come up today, but what is the scope of batteries to transform your industry?

Emma Pinchbeck: It has indirectly come up, in that that £8 billion flexibility figure includes storage of all scales on the system, including batteries, using EVs as batteries, using people's homes as batteries and power stations, and also large-scale batteries and other kinds of storage. I think Benj could talk about one that we already have operating.

Benj Sykes: Yes, we have two or three megawatt scale battery facilities in our projects that are actually up and running now. Battery storage is important, and I mentioned smart charging earlier.

Q272 **Chair:** When you say something is "up and running", what do you mean?

Emma Pinchbeck: We are already doing batteries with our wind turbines.

Benj Sykes: On one of our windfarms, where the power comes into Liverpool, we built a two-megawatt battery facility that works together with the windfarm to provide balancing mechanisms into the grid in terms of ancillary services.

Q273 **Chair:** What did you say the capacity is of that battery?

Benj Sykes: That is just a two-megawatt battery, so it is not huge.

Q274 **Chair:** Is that something you are looking to do at other offshore windfarms?

Benj Sykes: We are, but we are also looking at storage as a business in its own right. There are obviously opportunities to twin batteries with offshore wind, but once power is getting into a system you do not necessarily need to do the two together.

Andrew Jamieson: One of the other exciting prospects, although it is not a near-term answer to anything, is to think about the hydrogen economy. Can wind power be used to make hydrogen? Hydrogen is then used to fuel vehicles or heating, and possibly ammonia itself as well. It is some way off, but it is an example of where the scale of offshore wind technology might be able to pull that technology through. I am looking



HOUSE OF COMMONS

at all these sectoral transformations that offshore wind is possibly able to offer, and again, when the industry comes together, you can see that scale making a difference to the other sectoral opportunities.

Q275 **Chair:** We are just about to start taking evidence on carbon capture, usage and storage in the next few weeks, and in terms of hydrogen, I am an MP in Leeds, and the H21 project is an important part of that. If there is something you want to feed into that inquiry of how offshore wind can link with hydrogen, we would be interested to hear on that as well.

Just finally, we have been talking about offshore wind today, but what are your thoughts on onshore wind? Does that have a place to play in the future, in terms of our energy mix?

Emma Pinchbeck: Offshore wind is looking to be a third of our energy mix by 2030, but clearly we need other forms of cheap capacity on the system, and we know that the cheapest electricity system for consumers is one that is 65% or more renewables. With storage that could be anything north of 70 or 80%. Onshore wind is the cheapest form of electricity generation we have, bar none, and we currently find it very difficult, if not impossible, to build, at least at scale, because we have not had a pot 1 auction in some time, and even though the technology is subsidy-free, that market certainty, as we have talked about, really helps with development. It is a very important issue, particularly in light of the 1.5 degree report that came out last week.

Q276 **Chair:** Are you in discussions with Government about that?

Emma Pinchbeck: There are constant discussions with Government about energy policy at the moment, and that is certainly a topic we talk to them about, yes.

Q277 **Peter Kyle:** Could I follow up on your point about productivity a bit earlier? You were quite general. You are going to drive innovation and set new targets. Can you be specific? What things can you do specifically that would drive and increase productivity in your sector?

Andrew Jamieson: There are a number of sweeping areas, if I may, but if we just think of foundations and foundation manufacturing, there are very large canisters that are welded. One of the things the industry could be looking at more readily is what the specification of a foundation is. What would a fabrication yard need to know, in terms of its intelligence, knowledge and machinery, in order to design and build those units much more efficiently and improve the productivity therein?

Quite simply, with very large pieces of kit, you do not want to be double-handling them. You want to make them once and move them to where they are going to be used. You get into things like state-of-the-art welding technologies, but it comes down to the specification of those units as well, and I think that is where the industry can help. It is just an example of better intelligence in the supply chain, improving their



HOUSE OF COMMONS

investor confidence, so that they know what to do and when to deliver it. That maximises their chances of being taken into the procurement world.

Emma Pinchbeck: I would like to just come back to something Stephen said, and something you said, Peter, which is about how this all works together and what Government can do. It relates to the onshore wind thing. We have partly been playing catch-up with the industrial strategy and how that works and how the sector deals work. Now we have a clearer idea of what they are about versus what energy policy is about, and indeed what is coming from Brexit and how all those things work together. It is a big challenge ahead in the next decade, and there are a number of areas where some cross-departmental strategic thinking would really help.

The offshore wind industry is faced with many of the same challenges that other renewable technologies are, and it is things like not having a revenue mechanism for innovation at the moment, for new energy technologies coming forward in energy policy—for wave and tidal, for storage or for anything like that. Exports, export potential and the industrial scale of this industry is often missed, so engagement from DIT and from Government on how we get to that fivefold increase would be good.

We do not have a route to market for our cheapest form of energy, in the case of onshore wind, or a plan for how to get there, and this is an industrial revolution that is hitting more than one area of the economy. It is transport, it is heat and it is electricity, and joined-up thinking across Government would be really helpful. I would encourage the Committee to think about how the UK Government can use the carbon budgets to do that, especially in light of them asking for new advice from the Committee on Climate Change this week.

Chair: Thank you very much, the three of you, for coming to give evidence today. We look forward to hearing more on a sector deal in the near future.