Select Committee on Economic Affairs

Corrected oral evidence: The Economics of UK Energy Policy

Tuesday 20 February 2018
3.35 pm

Watch the meeting

Members present: Lord Forsyth of Drumlean (The Chairman); Baroness Bowles of Berkhamsted; Lord Burns; Baroness Kingsmill; Lord Lamont of Lerwick; Lord Layard; Lord Tugendhat; Lord Turnbull.

Evidence Session No. 1 Heard in Public Questions 1 – 10

 Witnesses

I: Rt Hon Greg Clark MP, Secretary of State for Business, Energy and Industrial Strategy; Rt Hon Claire Perry MP, Minister of State for Energy and Clean Growth; Jeremy Pocklington, Director-General, Energy and Security & Acting Director General, Energy Transformation.

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Examination of witnesses

Rt Hon Greg Clark MP, Rt Hon Claire Perry MP and Jeremy Pocklington.

Q1  **The Chairman:** Minister and Mr Pocklington, welcome, and welcome back, Secretary of State, to the Economic Affairs Committee. We appreciate your making time available to us.

In 2013, the Government expected 16 gigawatts of new nuclear power by 2030. What proportion of the UK’s energy supply are you now expecting to come from nuclear power over the next two decades?

**Greg Clark MP:** First, thank you for having me back and for your previous report, one of the key recommendations of which was to commission a review of the cost of energy under Dieter Helm, who gave evidence to that inquiry. It was one of your most important recommendations, and I was grateful for it.

We have no particular target for the contributions of nuclear by that date, but it continues to be our policy to seek a broad mix of different suppliers of energy for the future. So part of our policy is to have restarted the civil nuclear programme by then.

**The Chairman:** EDF has warned about possible further delays on Hinkley Point. In the context of meeting your requirements, what are the contingency plans for that project not delivering on time if there are no targets for specific areas?

**Greg Clark MP:** That project is still in the early days of construction. Estimates will be updated. Some phases go slower and others go faster, and part of the continuing conversation that my department has is to monitor that.

In terms of making sure that we have adequate supplies of electricity for the future, we have an increasingly well-developed capacity market—the auctions, which the Committee has discussed before. They provide the ability to secure power, should we need it beyond what is part of the system. Since the Committee’s report, that market has increasingly matured, and the cost-effectiveness is increasingly demonstrated.

**The Chairman:** So if Hinkley does not work, there will be enough power, will there?

**Greg Clark MP:** Yes.

**The Chairman:** Right. Are you confident that it will work? There are no working examples of this technology. I think I am right in saying that the Chinese project was supposed to come on stream this month but has yet again been delayed.

**Greg Clark MP:** Those buyer projects, such as the Chinese one, are close to being deployed. Part of the advantage in following them is that the lessons that have been learned from that deployment can apply
directly to us. That was one of the benefits of following on in a series of projects that have taken place.

**The Chairman:** So what are the lessons that have been learned, which have not made it work so far, that make you confident that it will work?

**Greg Clark MP:** That is a question for the developer and for those who are constructing the reactor. As the Committee knows, that is a feature of the model; it is not the Government running it, it is EDF and its partners and the contractors. Aspects of the design, for example, have been modified during construction. Perhaps Mr Pocklington can provide some examples of the modifications that have been made.

**Jeremy Pocklington:** As the Secretary of State says, it is very much for EDF, with its partner CGN, to oversee the development of this project. They are currently at the stage of developing the very detailed, very final, design for Hinkley, the so-called RC2 design, and they have very consciously been learning the lessons from the other projects that they have been working on.

**The Chairman:** When you say that it is very much for them to oversee the project, does that mean that you do not know?

**Jeremy Pocklington:** We have very developed governance that make sure that we have proper oversight of the project, and we very much track its performance through a series of quarterly meetings that we hold with Nuclear New Build, the developer. Obviously it is for the low-carbon contracts company to manage the contract on behalf of consumers through the electricity market reform arrangement, but we have very regular dialogue with EDF on this.

**The Chairman:** Is it not a bit like Carillion or the banks: that it is too big to fail? Therefore, is it not in the Government’s interest to know?

**Jeremy Pocklington:** The obvious point to make is that consumers do not pay a penny until the plant is operational. That is the nature of the CfD and its arrangements of supply to the Hinkley contract. It is important to understand how the capacity market will operate. Hinkley is not alone in being a large generating plant that is either coming online or moving offline; coal-fired plants, for example, do this.

As part of the judgments that we have to make through the capacity market, we can ensure adequate generation and that generation margins are maintained. As we approach 2020, which is when this will really start to take effect, and in the years that follow, the Secretary of State will receive advice from National Grid and from our independent panel of technical experts on the best capacity-market margin to set and the assumptions to make about when an individual plant will come online. Obviously we take a cautious and prudent approach in setting that margin, as you would expect.

**The Chairman:** So if Hinkley did not work or did not come on stream, you would look for alternative supplies, which presumably would be
cheaper for the consumer.

Jeremy Pocklington: It is a very complex market that we are considering here. Ultimately, if Hinkley is late, and I have no reason, sitting here today, to believe that it will be, a number of other things can happen in this market. Some plant might stay on longer than we had anticipated. Another plant might come on stream. It is very hard to forecast exactly what will happen. That is what the capacity market is designed to do: it is designed to get that better value for consumers.

The Chairman: Thank you. I have one further point on the capacity and the demands. Is sufficient consideration really being given to the increase in electricity demand that may arise from electric cars? The Secretary of State for the Environment has talked about ending all internal combustion engines. Are you satisfied that there will be the capacity to meet that?

Greg Clark MP: Yes, and we will ensure that there is. That is part of the point of taking a long-term approach, and part of the reason for commissioning Dieter Helm to set out at the beginning what will clearly be a transformation in energy markets—I say the beginning; we are well under way.

My view, and I think it was the Committee’s view, is that this is a good time to take stock of the policies that have brought us to where we are today and to look forward to the shape of the market, particularly the demands from new technologies that will place demands on the system, as well as the technologies that will help the system to be more flexible, for example in integrating renewable power.

Now is a good opportunity to do that. But, at all times, the priority, which is very clearly at the forefront of all our minds, is to make sure at every point that we have the power that we need in whatever state the economy is in. If it grows to the extent that we need more, that will be commissioned.

The Chairman: Thank you very much. You will forgive me for focusing on Hinkley. The Committee was very grateful to you for following up on our recommendations and would not want to leave it imbalanced.

Q2 Lord Lamont of Lerwick: The second allocation round of CFDs, relating to offshore wind, was published in September 2007, and they were surprisingly low. Has that caused the Government to reconsider their plans for the actual mix of energy in the UK?

Greg Clark MP: No. We look at the CFD auctions as having been successful in bringing down the price of offshore wind progressively. In a previous discussion with this Committee, various members recommended market mechanisms to drive down costs. We think that has been successful and we are committed to that.

As a result of a manifesto commitment, we commissioned Dieter Helm to take a look at the future arrangements over the longer term to make
sure that the institutions and the mechanisms that we have are optimal to achieving the energy security that we need at the lowest possible cost, consistent with our legal obligations.

**Lord Lamont of Lerwick:** The case for supporting nuclear power has had no formal consideration by the Government for 10 years. When Alex Chisholm, the Permanent Secretary, was asked about this before, he said, “We do not see a need to have a complete root-and-branch review of whether we want to have nuclear, because we clearly think nuclear is an important part of our energy mix future”—a slightly tautological assertion.

What is the case for not reconsidering? Prices have moved dramatically in different sectors, the structure of the industry has altered, and the international background and history have altered. What is the basic case? Is it all just, “You need a baseload”?

**Greg Clark MP:** It is a combination. You need a baseload, and you need diversity in energy supply. That is one of the principles of security that we want to respect. At the moment, nuclear contributes above 20%, which is an important part of the diversity of supply. It contributes baseload in a way that clearly renewables, however much the price is falling, clearly cannot do in the same dependable way.

When we made the assessment for Hinkley, the technology was competitive with alternative sources when the costs of intermittency and other aspects such as the requirements to meet our climate change targets were factored in. Of course, that needs to be kept constantly under review. The negotiation resulted in an agreed contract with Hinkley. Every nuclear power plant would have to go through a value-for-money assessment, but we think it is right to proceed with the programme, not least because it is a strategic part of the mix.

**Lord Lamont of Lerwick:** The industrial strategy listed the nuclear industry as one that you wanted to give priority to. It also talked about cost reductions and getting improved competitiveness—something the industry over the decades has conspicuously failed to do. How important is that now and how could that be achieved? In what areas?

**Greg Clark MP:** It is important and was deliberately part of our industrial strategy. Last time I appeared before the Committee, I said that one of the other dimensions of energy policy should be having regard to the industrial consequences and whether we have an industry there that has the potential to thrive not only domestically but internationally.

Being the first civil nuclear nation, we have assets and attributes that we think are valuable. The reason for specifying nuclear as part of the industrial strategy, and proposing a sector deal, is that if we are going to have a very long-term relationship between state and private operators, as is the case with Hinkley, it is important that we get the most of that relationship. In the case of Hinkley, for example, there was a
commitment to local content being used and to establishing a training school for apprentices.

Across the nuclear sector, we want to see more of that long-term dividend, rather than a series of short-term transactions being entered into—what it will do for the rest of the economy and for people working in it. Given that one of the challenges is to find ways of putting downward pressure on costs—through innovation, through research and development, and through working with the industry—we want to set that very clearly as a target and an ambition for the sector. When Hinkley was approved, we were very clear that we expected new nuclear stations that would follow to be at a lower price than was achieved with Hinkley.

**Lord Lamont of Lerwick:** How is that to be achieved—simply off the back of experience, one off the shelf so to speak, others to follow?

**Greg Clark MP:** There are a number of different ways. We talked about the EDF project and learning the lessons from its previous installation of the technology. That is one aspect of it. We expect the supply chain to develop—it is already developing—around the Hinkley project in Somerset and beyond, with a greater capacity for suppliers to tool up and be ready to supply that project. Obviously, once they have established themselves, one would hope and expect their prices and efficiency to be so much better for further investments.

As the Committee knows, although we have continuing installations, it is so many years since we last built a new nuclear power station in this country that the nuclear workforce has aged and there is a need to bring on a new generation of nuclear engineers. Part of the point of making this part of the industrial strategy is deliberately to think about and target those aspects. As well as that being beneficial for the economy and the country, having a more available workforce, a better supply and so on will also have the benefits in many cases of putting downwards pressure on costs.

**Lord Turnbull:** Since you were last here, we have seen two major reports—by Dieter Helm and the NAO—which are extremely critical of the Government’s position. They started with an assumption from 2013 onwards, when the strike price was struck, that the real price of fossil fuels would go on rising. The department stuck to that long after it had become apparent that the world had changed significantly.

Dieter Helm points out that the Government are following the downward path advised by the climate change committee and not varying that at all. Meanwhile, there is a sense of urgency in taking this decision—the idea that you wanted to get on with it. The NAO pointed out that you did not then wait until other people were ready to form a competitive market. You also did not examine alternative funding approaches.

You plumped for the contract for difference, which has turned out to be extremely expensive for consumers. The total cost of that was thought to be about £6 billion; they now put it at £30 billion. There is a lot of
Greg Clark MP: We will take account of the findings of the reports. It is fair to say that neither of the reports came from a clear blue sky. The Helm review was commissioned by me partly as a result of this Committee’s report recommending that a fundamental look should be taken at our future arrangements. As this Committee knows, in appointing Dieter Helm, you going to get nothing other than the unvarnished truth.

It seems right to me that there should be complete openness about this. It enjoins the interest of successive Governments. These are very long-term projects, and it was right to take the opportunity to have someone of Dieter’s calibre look and advise. His report lived up to his traditions of frankness and rigour. Of course, having commissioned it, we have every intention of taking his analysis very seriously.

The NAO is of course a very important part of the system. I had the privilege of serving on the Public Accounts Committee when I was first elected to Parliament. It is very important that you learn lessons from whatever public projects are embarked on. The reports put forward important and valuable lessons, and we will certainly do that.

In terms of the findings, the NAO for example said that it was not possible to say whether or not the Hinckley decision would prove to be good value for money until much later. That judgment cannot be made yet. As this was the first new nuclear build for a generation in the UK, the approach taken in negotiating the contract was to protect consumers and the taxpayer from the potential for cost overruns that a first-of-a-kind project—at least in the UK—might be at risk of.

The decision was not taken with eyes closed. A model was adopted to make sure that the risk stayed with the developer rather than with the British taxpayer or consumer. The National Audit Office has invited the Government to consider whether there are cheaper ways of financing it, but those cheaper ways involve the taxpayer or the consumer taking more risk. That would not be without consequence.

Lord Turnbull: I can see that you have protected the taxpayer, but the NAO explicitly says, “The Department did not assess the potential value-for-money implications for bill-payers of using alternative financing models”. The contract for difference applied here looks at the moment as if it is going to turn out to be very much more expensive, and the NAO thinks that alternative risk-sharing models could well produce a better outcome. No one knows whether there will be these follow-on projects—they are looking pretty sick at the moment—but are you prepared to look at models other than another round of contracts for difference for funding these next projects?
Greg Clark MP: In terms of the risk to bill payers, I do not think it is fair to say that taxpayers’ interests were protected but not those of bill payers. The fact that the contract for difference is capped and that there is a limit to the exposure of any cost overruns to the consumer as well as the taxpayer is a valuable piece of insulation for them. That was part of the contract. I have said that, yes, absolutely we will look at the recommendations of the National Audit Office and the Public Accounts Committee, but they are not without consequence; they involve either the taxpayer or the bill payer taking more construction risk. That may or may not be desirable, but it is a different set of choices rather than an obviously superior approach.

Lord Turnbull: Can you just elaborate on the statement that the cost of contract for difference has been capped? If it is capped, and the price of alternative or fossil fuels falls away further, someone is paying for that. Who is that?

Greg Clark MP: The consumer pays, but my point is that if there were to be some very significant cost overrun in the delivery or construction of the reactors, that—

Lord Turnbull: But that is until the point at which this thing becomes unviable and people have second thoughts about it. Then these risks come crashing back on to the Government.

Greg Clark MP: Some people have suggested that a lower strike price would have been possible, had the UK public sector taken more risk. That is the contention that is made. But the virtue of the deal that was done and the contract that was negotiated is that it leaves the construction risk entirely with the EDF and CGN.

Baroness Kingsmill: I declare an interest, as I sit on the supervisory board of E.ON in Germany. Dieter Helm definitely thinks that the costs are higher than they should be, and I just wonder whether Hinkley is redundant before it is even built, in the sense that there is much more of a trend these days towards smaller plants and ones that are less expensive to build and subsequently less expensive for the consumer. That is the first part of the question.

The second part is why you have not thought more about storage solutions and things such as smart homes, which are much more conducive to lowering consumer prices.

Greg Clark MP: Hinkley will contribute 7% of our projected electricity needs. I take the Chairman’s point that needs may vary, but it will be a very important and reliable contribution to our baseload power, which has value. It inaugurates a new programme of nuclear new build—as I said to Lord Lamont, there are some advantages in increasing our capacity to do more of that, including with the small modular reactors, for example.

Members of the nuclear industry—and, with the nuclear sector deal, promoters of small modular reactors are very much part of the same industry—would be united in sharing the view that proceeding as a civil
nuclear nation and as an investor is important. But having made the point that diversity is important and that Hinkley will maintain nuclear as part of the mix and will provide an important contribution, I have to say that it is not the only aspect. Our research and innovation programme is looking very closely at the potential for different technologies, including small modular reactors, to be part of that future mix.

**Baroness Kingsmill:** And storage?

**Greg Clark MP:** Storage—very much so. In fact, part of the industrial strategy emphasises the happy coincidence of the increasing opportunity in energy generation to find ways to store power—principally renewable power, which is intermittent—to be used at times when it is needed. This also happened at the same time, as the Chairman mentioned, as the great move to electric and hydrogen vehicles, which share the same technology needs.

Part of the industrial strategy—indeed, one of its early success—was establishing what we call the Faraday challenge and using our best researchers in universities, working with companies in both the energy sector and the automotive sector, to advance our position in energy storage, which would be of benefit to the automotive industry and the energy sector. This is a very important aspect of it.

**Baroness Kingsmill:** As I said, there is the smart home, too—the way in which demand will change considerably in the years to come.

**Greg Clark MP:** Quite so. Perhaps I could ask the Energy Minister to come in, because I have been dominating proceedings, and I know this is an area very close to her heart.

**Claire Perry MP:** This is a hugely important point. One of the proposals is about rolling out smart meters, and making sure every home has been offered one. Hopefully, most have accepted it, because the opportunity not only to reduce energy consumption but to be a much more intelligent consumer who is more able to switch is part of the plan.

**Baroness Kingsmill:** There is housebuilding, too.

**Claire Perry MP:** Yes, indeed. With the clean growth strategy, we are setting out an ambition that every home should be at least EPC band C or above by 2035. There is a lot of investment. One of things the Secretary of State touched on is the huge increase in research and development that is following the direction of travel. We have set out a triple test now for any form of decarbonising technology, including energy supplies: whether we can deliver a cost-effective pathway for consumers, whether we can decarbonise, and whether we can create some competitive advantage that we can export.

It is a really helpful metric if we are looking at things like carbon capture and storage or smart meters. We are now one of the world leaders in smart metering and smart-grid developments. I signed an accord with South Korea just a couple of weeks ago, a very similarly sized country
with similar energy challenges, which is very keen to do exactly the same thing. There are really big opportunities that spill out from energy into the industrial strategy and beyond.

The Chairman: Just to follow up on that point, one of our recommendations was that the cost of climate change policy should be made absolutely explicit on consumers’ bills. Why are the Government so reluctant to do this?

Claire Perry MP: I do not think a final decision has been taken.

The Chairman: Would you like to take it now?

Claire Perry MP: Perhaps we could take away your advice. What has been fascinating in taking on this brief is, first, the myths that are out there about cost. One of the things I was very keen to establish when we published the clean growth strategy was that, yes, we have all, consumers and taxpayers alike, invested in this switch to lower-carbon forms of energy production, but we have also had a simultaneous big improvement in household efficiency.

Of course, with direct investment programmes such as the ECO, which have effectively taken costs to consumers and invested them in energy efficiency improvements, there is very much a direct link. Dual fuel bills have gone down for the average household from 2012 to 2016 in aggregate terms. Although input costs may have gone up, we are using less energy—both electricity and gas. I am very happy to send the Committee the BEIS numbers.

The Chairman: Good luck with that argument on the doorstep.

Claire Perry MP: But I have to tell you that if you look at what consumers want, they are front-running the Government in their appetite for renewables. The question on the doorstep more often than not is actually, “Why can’t we have 100% renewables?” That applies to all consumers. You may not know that one of the most active campaigners in this space is the WI—this crosses all age barriers. The arguments about energy security, the energy mix and creating competitive advantages have to be deployed on the doorstep.

The Chairman: You may be right about that, but my question was specifically about the recommendation that people should know how much of their bills is going on this. Just to remind you, in their response to the Committee, the Government said, “Large energy suppliers already publish breakdowns of the makeup of energy bills on their websites as required by Ofgem. Adding further information to consumer bills would run counter to Ofgem’s ambition to simplify bills”.

Claire Perry MP: We have committed, with our partner organisations, to publish annual forecasts of the impact of these policies in energy bills, and will do so before the end of this year. Of course there are questions about what counts, what scores and what does not, but I understand the point.
The Chairman: The Government say they believe in transparency. Surely it is reasonable that people should know that 10% of their bills are going on this. It may make it more popular, who knows?

Greg Clark MP: It is a very valid aspiration to break this down. Of course, it is a national breakdown of any particular bill—the transmission costs vary from one part of the country to another, and the cost depends on the particular energy company—but I recognise the benefits of giving a broad view of the composition.

It is a reasonable recommendation. Ofgem already does this itself and publishes it. When we respond to the Helm review, we will consider this. Given that Helm proposes greater transparency of arrangements, it is consistent with that way of thinking to look at how we can communicate that to consumers and indeed to taxpayers.

Lord Burns: Another of Professor Helm’s conclusions was that energy policy regulation and market design do not seem to be entirely suitable for the purposes of this low-carbon market. Indeed, when the Committee investigated this, we were somewhat astonished to discover the extent of government intervention. People suggested that we were back to the days of the CEGB and that government was designing each part of this. Market mechanisms had essentially been squeezed out. What do you think the optimum role for government is in today’s UK energy market, and how should that be balanced with regard to market mechanisms?

Greg Clark MP: I will be careful in replying to that. We commissioned the Helm report and then put it out for consultation by putting out a call for evidence. We will respond to that, and I hope the Committee might give its own recommendations there.

I do not want to stymie that by giving the Government’s response before we have analysed the evidence that has come in. However, it is fair to say, as the Committee reflected in its own report, that an accumulation of government interventions has been entered into. That is often for perfectly good reasons—we talked about energy security and how we can make sure we can guarantee we have the right supply in the future, which gave rise to the capacity market, which is functioning as you say quite well.

The fact that we have legally binding climate change targets means that you have to have a mechanism—not least to prove to your colleague Lord Deben that the Government are not just notionally signing up to them but actually have a plan to stick to them. There are aspects in relation to the grid: if we want it to be open to new forms of generation, certain impositions on the grid are required to make that available.

There are the opportunities for science and innovation, which Lady Kingsmill referred to, and battery storage. It has been our experience that having some dedicated sources of funding for that is helpful. There are good reasons for each one.

Lord Burns: But taken together—
Greg Clark MP: Dieter makes exactly that point: that taken together, this is a rather complex picture. He asks, and proposes an answer to, what one might do in the future. In so doing, it is fair to reflect that, first, he invited us to be cautious in our response. He said that he hopes that the Government will not make a precipitous response to his report but will consider the complexity. He has also said that some of the changes in policy might be made over the medium and long term. That is a wise reflection. I am drifting into commenting on his recommendations now.

Lord Burns: If I can push you slightly further, do I interpret from that that, all things being equal, you would like to see perhaps a rather simpler system, which might be easier for many of us to understand, and possibly with a greater role for market mechanisms?

Greg Clark MP: Yes.

Q6 Lord Tugendhat: On market mechanisms, what are your views, or the Government’s plans, on the introduction of a cap in gas and electricity prices?

Claire Perry MP: It is a very valid question. As the Minister who will bring this forward shortly, I would say that if you take that market in the round and look at the degree of consumer detriment as calculated by the CMA report, the fact is that the majority of it tends to fall on the customers who are most loyal and furthest away from switching.

As one of the mechanisms that we want to see to try to eradicate that detriment, the cap is intended to given Ofgem powers—the designing and setting of the level of the cap is very much an Ofgem-led process—effectively to intervene temporarily in the market to accelerate its move to a more competitive state. We think we know, or we think Ofgem knows, what a more competitive market looks like. You would have higher levels of switching, and more engagement with consumers who currently have no knowledge of or do not understand the benefits of switching. I would like to think of it as an intelligent, time-limited intervention to help that market to achieve a more competitive state.

We make a very strong case for the market nature of electricity supply, and will continue to do so, but when the market was created we put a regulator in place with powers and provisions that did not take into account things such as information asymmetry that have built up as the world has become more digital.

I feel strongly that this is a way of giving the regulator the powers to deal with a more informed consumer base. It will run parallel to all the other work such as the introduction of smart meters, what Ofgem is doing with the pre-payment meter cap and the educational opportunities for more disengaged consumers. That is why it is time-limited and will be removed after a period of years.

Lord Tugendhat: I find that very interesting. So we are not thinking of a cap for as far ahead as can be seen. You are thinking of a cap that has a limited duration for a specific purpose.
Claire Perry MP: Yes, so the draft Bill, which I believe is in the public domain, specifies a cap that will end after a period of years, with Ofgem effectively making an annual recommendation to the Secretary of State, from two years after the introduction of the cap, as to whether it should be continued. But it has a sunset clause, so the cap will expire on the basis of this legislation.

Lord Tugendhat: I know there is a very big difference between the energy market and universities, which also fall within this department, but there is a tendency sometimes for caps to become the point at which everybody ends up.

Claire Perry MP: Indeed. We had a very effective scrutiny session with the Commons BEIS Select Committee, which we asked to do pre-legislative scrutiny. One of the risks is always how companies game the system. Ofgem’s mandate will be to design a cap and reporting mechanisms that make the gaming behaviour both very apparent and a cap that ensures that you do not get clustering around these particular price points.

The evidence from the pre-payment meter cap that has been brought in is that although some tariffs did move up towards that level, the vast majority moved down. On average, consumers saved about £60 a year when they were covered by the cap. We did not see that adverse effect.

Lord Lamont of Lerwick: As I understand it, the impact assessment for the draft Bill highlighted a decrease in competition being a possible result of the cap. It then went on to say that “Ofgem is required to have regard to the need to enable effective competition to continue”. But if competition is being decreased by the cap, how can Ofgem do anything to offset that?

Claire Perry MP: I think it had been considering a theoretical risk.

Lord Lamont of Lerwick: But it is a real risk.

Claire Perry MP: We now have 60 companies competing in the energy market, up from six in 2010. The evidence that has been presented is that in effect this will persuade companies that have undertaken some fairly detailed pricing strategies to penalise their most loyal customers to stop doing that, because those customers will be the ones who are most protected by the cap.

Competition is tending to erode those more price-sensitive customers for those particular companies, and that will continue. But it is not happening fast enough, which is the point of the cap: it is a temporary intervention to boost competition in the market.

Lord Lamont of Lerwick: But it is for several years, which seems quite a long “temporary”.

Claire Perry MP: The intention is to introduce it to be effective by this winter, which to me means pre, not post, Christmas. Then it can be rolled
forward on an annual basis, depending on Ofgem’s recommendation to the Secretary of State. But it will expire in 2023.

**The Chairman:** Before we leave this issue, I want to ask about one of our recommendations. If the Committee on Climate Change advises on decarbonisation, why should there not be a separate body, like the energy commission that we recommended, advising on the achievement of the other two objectives of cheap and reliable energy?

**Claire Perry MP:** I am not convinced that that is necessary.

**The Chairman:** Could you help to explain why?

**Claire Perry MP:** I would be delighted to listen, but the Committee on Climate Change is the statutorily established body that holds us to account on achieving our carbon emissions targets, as the Secretary of State said. That is one of the reasons why we have government intervention in the markets. But with a transparent market and reports such as Dieter Helm’s, I am not sure, honestly, what value that new entity would bring.

**The Chairman:** Can you not see that there is a conflict? It would be responsible for acting on behalf of industrial and domestic consumers.

**Claire Perry MP:** But that would assume that there was a conflict between cheap energy and decarbonised energy. As we now have offshore wind being purchased at £57 per megawatt hour, which is comparable with a new gas plant, and given the pace of innovation that we have seen, that construct is not true.

**The Chairman:** I notice that you have chosen offshore wind and not Hinkley.

**Claire Perry MP:** One has been producing power and one has not. We are purchasing offshore wind at £57 per megawatt hour, which is an unbelievably low price compared to where we were three years ago.

**Lord Turnbull:** Are we purchasing that now, or is this a contract that someone one entered into, which they may not deliver on if the market develops in a different way?

**Claire Perry MP:** It is a contract to provide at that level.

**Lord Turnbull:** A contract “to provide”? Okay. You were claiming that this energy was being produced at this moment at that price.

**Claire Perry MP:** Forgive me, it is a contract to provide. But I also had the great pleasure of opening the country’s first subsidy-free solar farm last year. That was made possible through a combination of extremely effective reverse-engineering of the typical build and of dealing with some of the barriers that we put in place that make it difficult for renewable producers to invest in storage at the same time, which is what we need to crack this problem of intermittency. So there is a strong shift,
partly because of the global move to this decarbonised energy trend, that is driving down the costs of renewables. I do not accept that these are either/or propositions.

**Q7 Baroness Bowles of Berkhamsted:** We move on now to productivity and skills.

Secretary of State, can you explain what role your department has in relation to the objectives under the “People” section of the industrial strategy and how you work with other departments whose responsibilities cover those areas? Some of the background to this is that there appear to be many different actors in the game on this. So the point is: how do you co-ordinate it, and does it lack some overall guidance as a consequence of there being so many different actors?

**Greg Clark MP:** Thank you. That is a very relevant question. The implication is that these responsibilities are shared across government rather than thought of in silos, which is absolutely right. We propose that the industrial strategy that we published just before Christmas should be very much our collective industrial strategy for the nation, including the devolved Administrations. It is not just my department’s industrial strategy; it is directed, among other things, at improving our level of productivity.

Skills are essential to that. There is a chapter in the industrial strategy that is devoted to skills. A big part of that is done jointly with the Department for Education. The creation of T-levels, the new institutes of technology and the expanding apprenticeships are very much part of that department, but we take them collectively as part of our required approach.

How can that be integrated and brought together? There are two ways. One is that the Prime Minister chairs the Cabinet’s industrial strategy committee, which includes the Education Secretary as well as me. She chairs it personally to make sure that there is that consistent cross-government working.

Of course, these things are delivered not only by government departments. As we said earlier in response to some of Lord Lamont’s questions, when it comes to the nuclear industry we take the view that, if this is going to be part of our future, we should join up the energy policy aspect of it with the skills policy aspect. That requires the creation of a nuclear skills academy and working with the industry to make sure that the training needs of the supply chain, including small businesses, are very much part of our collective ambition.

The industrial strategy brings all these players together, the intention being to make it happen rather than see it lost between different responsibilities.

**Baroness Bowles of Berkhamsted:** It is not just departments that are involved; more than 600 organisations other than employers and universities are involved in STEM. The National Audit Office said that it
expected there to be a drop in STEM shortages. Until it said that, I think the general view was that there continues to be a demand for more people to study STEM subjects and get STEM qualifications. Is that because people are getting not particularly helpful or good-quality STEM qualifications?

Is that a factor, because there are so many people in the mix who are dishing out the qualifications? Some of our work on apprentices and so forth has been about waiting for standards to be approved and about something being awarded by one organisation not being the same as something awarded by another. The same is definitely true at university level, with each university having its own standards.

Can we trust what we think we know about the supply and demand of appropriate STEM subjects?

**Greg Clark MP:** The challenge is partly demand, partly supply and partly some of the institutions.

On the point about demand, we are experiencing across the world, not just in this country, an extraordinary change—it is sometimes referred to as the fourth industrial revolution—in which the pervasiveness of new technologies, often into sectors that were previously not considered to be high-technology sectors, such as retail, is astonishing. So the demand for people to have technical STEM qualifications increases all the time.

It is my experience, and I dare say it is the experience of members of the Committee, that wherever you go around the country—north, south, east and west—the common refrain is strong: “If only we could get our hands on more relevantly educated people, we could make use of the demand for their skills”. Part of our industrial strategy is to act on that and to reflect on our strengths and to be determined to supply more technically skilled people to the work force, recognising the increase in demand.

On the point about supply, we need many different sources of supply. Universities are crucial to this. The industrial strategy was written very much with the close involvement of universities and colleges up and down the country. Part of it has been to recognise that in schools, for example, if we want people to have the chance to take technical qualifications in further and higher education, they sometimes need to have more consistently available maths and science teaching in schools. So there is a big push on maths teaching in schools.

The creation of these new institutions of technology is an important aspect, as are the sector deals, which we talked about in nuclear, and making sure that where a sector is growing we address its skills needs as well as its product needs.

These all come together, and if we are to achieve our potential we need a big improvement in our capacity to educate people and train them in the skills that are needed.

**Baroness Bowles of Berkhamsted:** But it is quality as well as quantity.
**Greg Clark MP:** Yes, and you are right to note that there has sometimes been confusion in the array of professional qualifications, particularly vocational qualifications, that have been available. The level of attainment given by a particular qualification has not always been evident to people, young and old, or to employers, and it is important to have greater clarity on that.

**Baroness Bowles of Berkhamsted:** Other countries, non-common-law countries, tend to have much a more centralised allocation of qualifications so that they are the same thing, no matter where you get them from. That is not our way. That may be why employers sometimes want to recruit from other countries, because they understand what the qualification means, whereas if you recruit from the UK you do not know what the qualification means.

**Greg Clark MP:** For many decades, sadly, greater prestige has been attached to technical qualifications in other countries than in this country. I think that is changing. If you take evidence, as I am sure you do, from university vice-chancellors—we have some distinguished academics among members of the Committee—they will report that the applications for engineering degrees, for example, have really turned around. There is a real sense that the opportunities available in technical areas are increasing all the time. I think the difference in status is changing. It is true that there are different systems in other countries. The German system is often admired, correctly; it is very formal in terms of the types of qualifications that are available.

At the same time as having a clear sense of the worth of a qualification, a degree of agility is important in making sure that people are being trained in the relevant skills for what are often brand-new industries and that we are not training people exclusively for industries for which a committee has recommended a particular set of skills that might have been relevant when they started their inquiry but are not now. There is a balance to be struck, and we need to strike that right balance.

**Baroness Bowles of Berkhamsted:** Can I probe you a bit further on that balance point? I appreciate that we are possibly straying more into education than is your remit here, but sometimes it is said that students in the UK specialise too early. That has often been the criticism of A-levels. But when you start looking at university courses, a lot of our view of university has been that it is three years to show that you can learn stuff in an intelligent way, and then you go off and do something completely different.

On the one hand, at the lower level, we are specialising too much, and then later on, at the university level, we are not specialising enough. How do we get that balance right? In particular, are T-levels, which will be very important, exacerbating specialisation too early, or are they solving it? Or is it a bit of both? It is a difficult one to answer, I know, but the criticisms of both ends of our current system seem to have justification in some respects.
**Greg Clark MP:** It is a big debate, and a very important one. I regard maths as a mechanism for opening doors to careers in engineering, economics and other disciplines. If you have studied maths, certainly to 16 and sometimes beyond, you might suddenly discover, at the age of 17, that there can be brilliant opportunities, as there are. The world is replete with opportunities in engineering, science and the social sciences. Sometimes—and this is a tragedy—young people feel that they wish they had known that a few years earlier when they were choosing their options.

The increased prominence given to the study of maths in schools by some of the school reforms, backed up by some of the investment in maths teaching, is very important to this. But if people have made what they might consider to be the wrong choices in their childhood, they ought to be able to correct that later on. It ought not to be the one and only chance they have to be educated. A greater ability to have learning throughout their lives is also very important.

There are different ways in which what you imply is a lost opportunity can be addressed, short of the much bigger debate in education about our system of A-levels versus the continental approach of the baccalaureate system. That debate will run and run, but there are things that we can do to address the problem you describe. We are doing them, but we can do more.

**Lord Tugendhat:** In recent years, there has been a substantial increase in the percentage of women going to universities as compared with men. I believe that, now, 56% or so of the student population are women. Has that increase in the percentage and the overall total of women been matched by an increase in the number of women in the STEM subjects, or are women still underrepresented in the STEM subjects while being overrepresented in the overall figure?

**Greg Clark MP:** Claire will have a particular perspective on this. The answer is that there are more women going into science and engineering, but not enough to close the gap.

**Lord Tugendhat:** So not in proportion to their increase in the overall numbers.

**Greg Clark MP:** Quite, and this is notwithstanding the fact that we have some very renowned and celebrated women in positions of leadership. I am very proud that Dame Ann Dowling, who leads the Royal Academy of Engineering, is on the board of my department. She does fantastic work in demonstrating the opportunities that there are for women. But we have further to go.

**Claire Perry MP:** It is both a push from the universities and a pull from the employers. We have some extraordinarily positive examples such as Crossrail—I was previously the Minister in that department—which is the largest and most complicated engineering project in Europe. The workforce is over 30% female and includes some gritty, high-paying and
highly productive jobs. It has been a deliberate strategy on the part of the Crossrail management team to do that.

The sector deals that we have been working on and the industrial strategy involve the question of how you are going to improve the diversity of gender, race and background in your industry. What steps are you, the employers, going to take to make this happen? I find too often that companies will look to government to provide all the answers for growing, creating and retaining that workforce.

Almost as important is bringing people back who have left the workforce. The Government have supported the whole “returners” process, although it is not always women returning to work, but it is up to employers to go out there and find and invest in that talent pool.

**The Chairman:** I do not want to anticipate our current inquiry, Secretary of State, but you may know that since June we have been looking at further and higher education—funding and all that. Earlier this afternoon, we had a session with young apprentices from around the country. We had a similar session with youngsters who were at further education colleges. One of the very strong things that came out from them is that in schools they are encouraged to go to university and get very little information about doing apprenticeships or about what is available in higher education and so on.

Of course, the whole funding system makes that very easy, and the result is that many people end up doing stuff when perhaps if they had had knowledge of the opportunities as a whole, that would have resulted in them doing something else that would have made them more productive and probably given them more fulfilled lives. It is very striking that this has been a consistent view among these youngsters in these focus groups, which I must say has also been very encouraging.

**Lord Layard:** I want to move on to R&D. In the industrial strategy, you have committed Britain to raising R&D to 2.4% of GDP by 2027, which is still lower than Germany and the US. Could you say a bit about how that can be made to happen? I think it is now 1.7%, so that is quite a substantial increase.

**Greg Clark MP:** First, on what the Chairman said, that sounds a very timely inquiry. It was certainly my experience in putting together the industrial strategy that there is often a sense of regret on the part of employers and of young people that they did not know about each other at the time. The admirable systems that we have in universities, which Professor Layard will be very familiar with, make it very easy for people to choose between universities and between courses. It is not so easy to see what apprenticeships are available and to compare them. A lot can be done there, and I am sure the Committee’s report will be fascinating.

The increase in R&D is one of the foundational commitments that we make in the industrial strategy. If we want to be competitive in the future, in a world in which technological change is transforming almost
every industry, we need to innovate and invest in research, but at the moment we are not keeping pace with the leaders in the pack. We are, as you say Lord Layard, investing, in public terms, about 1.7% of national income. The 2.4% brings it to the OECD average, but we want to be ahead of that and go beyond it. The Government can commit their own resources—taxpayers’ resources—which we think is a good investment. From a world in which, since 2010, the research budget has been protected in cash terms, there is a now a real-terms increase in the R&D budget that is available from public funds. That came very strongly out of the consultation on the industrial strategy. So that is one contribution to it.

We also expect, because it is the case here and overseas, that well-targeted public investment in research and development, at least in universities with good connections to industry, crowds in—to coin a phrase—investment from others. Take the life sciences: you just need to see what happens in and around Cambridge to see how the return in investment in university research and development brings in other firms that can do it.

By putting more public funds in, we have a good chance of encouraging co-investment by private sources. But it is very important that investment should be made wisely. I am not a fan of expenditure measures and thinking that the task is done just because more is being spent. It is very important that the basis of our research excellence is scientists and top researchers being very rigorous when it comes to funding applications. Through the creation of UK Research and Innovation—UKRI—we are very determined that should be done in very rigorous circumstances.

Lord Layard: Following up on that, the last part of our energy inquiry report was about how you secure value for money in energy research, especially clean energy research. We had really interesting evidence from Richard Friend from Cambridge and Peter Littlewood from the US Argonne National Laboratory about the value of having a big national laboratory as part of this scene.

It has been very effective in the States; obviously there is critical mass and economies of scale, and it is easier to arrange with links with industry and all the rest of it. Actually, the last recommendation in our energy report was for the establishment of a national energy research lab in Britain. We have not had much reaction to that. Could a group of us come and talk to you about that?

Greg Clark MP: I would be delighted to do that, and I think it would be useful and important to engage with Sir Mark Walport, who now runs UKRI, and Sir John Kingman, the chairman. Their role, very correctly, is to advise Ministers so that these are not subjective decisions made by Ministers but decisions that are taken in a rigorous way, and they will make use of their extensive network of experts in doing that. That would be a good conversation. Through the increase in investments that we have managed to secure through the industrial strategy at a time of fiscal
constraints, one might say, this is a real signal of intent. Much of that has been in energy—I mentioned the Faraday challenge earlier.

It is not really gazing into a crystal ball to expect that energy storage will be a much more important part of the world than it is today. Since we have some of the best brains, best engineers and best practitioners in this, this is a good sort of investment. It is a good example of how the process works: this was a hypothesis that we had that came out very strongly from the development of the industrial strategy.

UKRI made an assessment and ran a competition that established the Faraday Institute. The establishment of that institute is already bringing investment from commercial firms, both domestic and overseas, into this country. I would enjoy a wider conversation about energy research, and I dare say the Energy Minister would as well.

Claire Perry MP: I totally agree. There is a real move towards more co-ordination, which has happened; we have the Energy Innovation Board, for example. I asked for the data on this, and I have just received the information, but I was very struck that we in BEIS, and taxpayers, have invested in 4,300 projects in the clean growth space since 2012. We are starting to understand more about that portfolio and to see the advantages of working more closely together. Having that as a showcase for overseas investors to see where these companies and projects could be taken forward is a huge opportunity.

I would just underpin the grand challenges in the industrial strategy and the linkages between clean growth and energy, and the future of mobility. There are enormous crossovers that we are thinking about in the world when we bring forward these R&D portfolios. I would be really interested to hear more about that proposal.

Baroness Kingsmill: It is quite interesting to hear you talk about R&D. I let it go when I asked about smart houses and you immediately thought of smart meters, but there is more to a smart house than a smart meter. There is a significant proportion of people—I would like to know what sort of proportion—who are actually selling energy back to the grid. There is a considerable amount of research and development going on into precisely that so that households become self-sufficient. The demand side is reducing. How do we balance that out when it comes to energy policy and building huge, maybe out-of-date, nuclear plants?

Greg Clark MP: The demand-side response in industrial users is for example a very important part of this—

Baroness Kingsmill: But it will be much more widespread.

Greg Clark MP: It will be much more widespread and will be available consistently to households. At times, for example, an electric vehicle is a source of energy storage: if it is plugged in, it can be discharged at times when the grid needs it. It can then be charged up in the middle of the night when demand is low. In so doing, as you imply Baroness Kingsmill,
it reduces the need for storage capacity, which brings costs down. That is a big and important part of the research and development programme. We are also working with Ofgem, through our smart systems review, to make sure that the grid allows that to happen and that there are no technical or regulatory constraints to doing that.

**Claire Perry MP:** Just to add to that, one of the big issues with decarbonisation and indeed consumer costs is heating. We are continuing to spend I think £4.5 billion over this Parliament on the renewable heat incentives. We are also spending about £180 million on R&D in the heating space. There are lots of questions out there about hydrogen for heat, and there are opportunities both on a decentralised basis and centrally.

Heat networks are an opportunity that continues to grow and to which we have committed funding. We have fantastic UK technologies in this space, and solving some of those problems, including providing a route to market and helping those suppliers find a route to market, is absolutely part of the plan.

**Lord Turnbull:** The figures on regional disparities in Britain are really very stark. The differences between our most prosperous regions and the rest are as wide as anywhere you will find in the western world. It is not simply GDP per head, it is a series of social indicators: health, longevity, obesity. There is also selective migration, where there is some evidence that towns and cities that have universities get students to come in, but they do not stay and instead go to places where they can earn more.

I have not seen anything in the industrial strategy that gives much hope that this trend will be seriously reversed. Claire Perry will know all about some of the projects that people were very keen on, such as the northern powerhouse, linking Liverpool to Hull by rail, and some of the road links that need to be improved including Sheffield to Manchester. Has that all gone off the burner?

**Greg Clark MP:** I would say quite the opposite. In the industrial strategy, there is a section called “Places”, which is one of the five pillars of driving productivity improvements. This is the first time to my knowledge that a strategic approach from the business department has had such a clear focus on the importance of place in boosting our national productivity, prosperity and all the aspects you mentioned.

We are very candid about the problem. On page 218, there is a depiction of Britain that compares the GVA per hour of different parts of the county, and it is very stark, for the reasons you state. If we want to solve our productivity problem, we have to understand that it is as much one of composition as of the average. We could really improve productivity in this country if we transmitted some of the higher levels of productivity that are experienced in some parts of the country to others.

How to do that? It is all the areas that we have been talking about, such as research and development. We have, through our universities for example, an amazing network in every part of the country of institutions
that can promote innovation in their area, which we should make more use of. As for skills, we know that there are huge disparities in the levels of training, but also, I am afraid to say, of education. There is a big move to correct that.

In terms of infrastructure, the northern powerhouse and the connections between cities, which will be helped by HS2 and the northern powerhouse rail, we are very clear in the strategy that if we are to achieve the prosperity that we want to achieve as a nation, we have to close these disparities by improving the performance of those who have been lagging behind.

**Lord Turnbull:** If that was the case, would we not be seeing projects on this crosspiece of HS2 being advanced with much more urgency than at present? I saw a transport document, very much produced by consultants, which was pretty airy-fairy about regions. It did not have anything like, “We are going to be dealing with Area 64. We are going to be building this railway or that railway”. It just was not there.

**Greg Clark MP:** I think the former Transport Minister is itching to come in. But, first, take HS2. The contribution that HS2 will make in joining some of our principal cities in England together, not just London and Birmingham but Birmingham to Manchester to Sheffield to Leeds to Nottingham and Derby, and in creating over distances the really effective transport that we take for granted in London is a very important part of boosting those economies.

**Claire Perry MP:** I was going to say that it is not just transport. The local industrial strategies that I have been most excited by are for example what is being brought forward in the West Midlands by the metro mayor, who is taking the boost from HS2 but looking at all the other aspects of that place and what educational institutions, corporate base and local economic partnership it has. The same is true on Teesside, where I was the week before last, where again transport is part of the mix and the transport links, including road, are pretty reasonable.

It is about taking that huge site and working with the combined authority mayor there, who is providing great leadership and really trying to develop that local industrial strategy. For me, you cannot pick just one thing and say that that is how we will solve these disparities. Having that really engaged civic leadership and good LEPs seem to be the breakthrough things.

**Lord Turnbull:** I am not saying that transport is that one thing, but if—

**Claire Perry MP:** It is a major contributor.

**Lord Turnbull:** If transport is weak, the region is weak.

**Claire Perry MP:** I totally agree. Remember that we still have the £38 billion of investment in our railway and the biggest roadbuilding and upgrade projects that we have seen since the 1970s, so there has been no diminution of investment. But it is not enough just to have good
transport links; you have to have that desire to work with the local
economy to create the places that people want to travel to and from.

**Greg Clark MP:** Transport is very important, but skills are also of huge
importance in seeing the prospects not just for good jobs but for highly
paid jobs blossom in areas. I have done a lot of work with Sheffield, for
example. We negotiated a city deal with Sheffield on advanced
manufacturing, a big part of which was linking with the colleges to make
sure that as these advanced manufacturers open up they have a supply
of labour that can work. That is a big part of it, and we have more to do.

**Lord Turnbull:** That is interesting. I have spoken to the same Sheffield
leaders, who are worried that they have this ability to create highly
skilled people but lack the ability to get them to stay in Sheffield as
opposed to going to London or Manchester.

**Greg Clark MP:** One thing that we have seen in recent years, whether in
Sheffield, Manchester or Birmingham, is a real sense that these cities,
which are more than their local economies—just as we think of London as
having multiple attractions; culture as well as employment—are
becoming renowned for improvements and for their diversity, excellence
and quality of life. This is one reason why local leadership has been
important: to have someone there who can really beat the drum for a
particular city.

We have more to do across the country, but the momentum that is
behind the progress in some of our great cities is one of the really bright
spots as we look around the country. Often, that is a partnership between
local elected leaders and between universities, which are very important,
and often between colleges and businesses through the local enterprise
partnerships. There is more joint working to positive effect than we have
seen for many years in these places.

**The Chairman:** It might be worth your officials digging out the evidence
which the University of Central Lancashire gave to the current inquiry
about the work that it is doing to join HE and FE together with local
employers. We were very impressed by that.

**Q9 Lord Lamont of Lerwick:** I want to ask you about that great subject of
productivity, which is something of a mystery. It sometimes seems to me
that the approach you advocate is a bit one-dimensional. Let me say that
I accept that infrastructure, which Mrs Perry talked about, R&D and
training can influence productivity, up to a point. But the great
improvements in productivity come from individuals: entrepreneurs and
innovators.

I am a bit more sceptical about backing particular technologies. You say,
"Oh, we’re not backing winners. We are not investing in particular firms’’,
but the history of Governments backing particular technologies has often
been disastrous in the past. You do not seem to emphasise competition,
liberalisation, deregulation. I am not talking about getting out of the
customs union, but there are all these things that are on the supply side.
It seems to me that they ought to get as much emphasis in your speeches as the spending of public money does.

**Greg Clark MP:** They do. When I was given the task of producing the industrial strategy, one of the things I was absolutely clear about was that this would not be about the worst approaches of the past, which were to identify the incumbents and to subsidise them to protect them—quite the reverse. The foundation of our prosperity is about being an open and competitive economy in which incumbents have no quarter from entrants and competition. Throughout the industrial strategy, we are very clear; there is a whole section on the business environment that emphasises precisely that.

We talk about wanting to be the best place in the world to set up a new business and making sure that we continue to have a regulatory regime that promotes competition rather than protects the inefficient. That is absolutely central to it. It is a reasonable challenge to ask how, if you have a line of sight to the importance of technological innovation, you can prevent that being an exercise in picking winners.

The approach that we have taken is not to choose particular technologies, for example. When we talk about the future of mobility, we know that the world will change in the way it gets about. We know that electricity will be important in it, but as part of the Faraday challenge we have multiple different technologies being tried and tested by different competitors—different types of battery, and not just batteries; when it comes to hydrogen, for example, that can be very important.

Another theme is artificial intelligence and big data. We know that that is a broad theme, but within it there will be particular entrepreneurs and particular technologies. I, with my ministerial team and officials, am in no position to judge which is the best. As with our university research generally, we make available a broad offer and have a high degree of competition, rather than selecting particular technologies and, still less, particular firms.

**Lord Lamont of Lerwick:** Could I press you on one aspect? The strategy notes: “Parts of the UK economy are unusual in having underdeveloped domestic supply chains”. That may be true, but I gather that you have a new supply chain competitiveness programme targeting areas. How do you go about improving the supply chain? If you called it procurement, that might be one thing, but how do you go about redesigning the supply chain of a particular business? How do you decide which businesses are to get assistance or the benefit of the knowledge of the man in Whitehall about setting up a supply chain?

**Greg Clark MP:** Let me give you a particular example. In the West Midlands, just outside Coventry, the National Automotive Innovation Centre is being built. It is invested in by the automotive industry—the big suppliers as well as the smaller companies. It involves test beds for new materials and new technologies, which are open to any participant in the industry to take advantage of.
Reserved in it are two things of particular importance. The first is a part of the building that is available for the use of the smallest start-ups, which otherwise might not have the level of financing to afford access to some of the equipment available there but which have a guaranteed right of access to it just as much as the big brands have. They will work in a cluster, in effect, with some of the biggest and the newest names.

Secondly, there is an apprentice training centre, where 1,000 apprentices a year will be trained. All these cutting-edge automotive technologies will be available not just to the JLRs, the BMWs, the Nissans and the Toyotas but to the smallest start-ups. That is a good example of where, if you insist that this cannot be a proprietary institution to which only the members of a particular firm can go and you insist that there is open access, you can do something that brings it together. The relationships between the small and the large will help to develop the supply chains that are very important to the motor industry.

To give another automotive example, members of the Committee who are interested in motor sports will know that the world’s top motor sport engineers are clustered around Northamptonshire and Oxfordshire, not through any diktat of central government but because they find that proximity to one another means that there is a pool of labour and no doubt conversations in pubs at the weekend among the like-minded. As in the case of the innovation centre, if you can provide some institutions in which everyone can participate, you can foster that. It is not about being proprietary; it is about creating the conditions in which people can come together and make those connections.

**Lord Lamont of Lerwick:** I notice that the industrial strategy talks about a key factor in improving productivity being in certain sectors where there is on average lower productivity than in the rest of the economy. It mentions services in particular, but by definition services have lower productivity. What is the point of putting an emphasis on the services sector, particularly the hospitality sector? What can government teach the hospitality sector about productivity that it will not learn from the jungle of competition that there is out there?

**Greg Clark MP:** The Government are not teaching it about productivity. It would not be for me to do that. In some of the sectors where productivity, the take-up of technology and the skills of the individuals taking it up have been most effective—aerospace, for example—there has been a good relationship between firms in the sector and research institutions, such as universities, and the Government’s agencies, such as Innovate UK, which is responsible for promoting innovation. They have been able to improve the take-up of technology and to make sure that there are training establishments that can train the workforce for the future. In that sector and in others, internationally there are very high standards.

**Lord Lamont of Lerwick:** My question was about services, such as hospitality.
**Greg Clark MP:** Absolutely. So the question is whether this is reserved just for sectors such as aerospace and automotive that are traditionally thought of as sectors that are about technology. Actually, the fourth industrial revolution means that the incursion of high technology into hospitality, for example, is transforming it. Take booking systems and the predictions of demand for rooms in chains around the country. Rather than just having a call centre, answering the phone and booking people—

**Lord Lamont of Lerwick:** But it is all happening in the world anyway.

**Greg Clark MP:** —you can now use technology to advance it to be much more efficient. The airlines have been doing it for some time. In those sectors, just as in automotive and aerospace, some of the research and development that the universities have engaged in has been useful to them. I do not see why our universities and the researchers developing artificial intelligence systems, for example, should not be helped and encouraged to work with the services sector, not least because if you do that you can help transform the productivity of sectors that traditionally have been quite low paid.

In so doing, you have a chance, over time, to turn them from being areas of low pay into areas of high pay. If you want to improve our national productivity, looking at these areas of low productivity is very important. We should look not just at the top but at what Andy Haldane of the Bank of England has referred to as the “long tail of underperformance”.

**The Chairman:** I am conscious of your time, Secretary of State. It sounds as if this subject of productivity might be the topic of another inquiry. A final word to Lord Tugendhat.

**Q10 Lord Tugendhat:** My question follows on very naturally from Lord Lamont’s. We all agree that there is a productivity problem in the UK, and there has been for as long as I can remember. In the light of what you were saying, apart from what I was going to ask you, are you confident that the models that we use to measure our productivity are entirely fit for purpose? When one looks at some of the things that you are saying, and at the gig economy and everything from Airbnb to medical apps and Ocado, I wonder whether our productivity is not perhaps a little better than the statistics show.

**Greg Clark MP:** You make an excellent point. The measures are in many places quite crude, and you have to be careful in using them. For example, the conventional definition of productivity is output per hour worked. If you were to target that in an unthinking way, you could end up seeing in unemployment people who may be in less productive jobs but nevertheless are making an important contribution to themselves and the country. It would clearly be a disaster. You would not do that, even if by excluding them the average went up. When we compare ourselves with other countries, we should take some pride in the fact that we have a high level of employment and a low level of unemployment. I would not want to swap that for a country in which there were very high levels of unemployment.
For precisely this purpose, one of the commitments that we make in the industrial strategy is to say that our progress should be measured—to go back to Lord Forsyth’s question to Claire Perry earlier about the progress on energy—by establishing an independent industrial strategy council, whose first task will be to establish measures and benchmarks of all of the things that are in scope in the industrial strategy. Of course, productivity is one of those, but our performance on energy is another. Those will be set following a good and rigorous debate, agreed and then monitored as to how we do over time.

**The Chairman:** On that note, Secretary of State, I thank you, the Minister and Mr Pocklington. We have bowled you one or two googlies. You seem to have dealt with them very expeditiously. We are extremely grateful as a Committee for the care you took in looking at our report and indeed for embraced some of our recommendations. I do not think we will quite agree on Hinkley, but on the rest we have a common aim. If we may, we may use some of your answers as part of the evidence for our current inquiry on further and higher education.

**Greg Clark MP:** Thank you, Chairman. I was grateful for your advice and I hope that you will perhaps contribute some as we set out our response to the detail in the report.