

Science and Technology Committee

Oral evidence: [Work of the Science Minister](#), HC 438

Tuesday 17 October 2017

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Members present: Norman Lamb (Chair); Vicky Ford; Bill Grant; Darren Jones; Clive Lewis; Stephen Metcalfe; Stephanie Peacock; Graham Stringer; Martin Whitfield.

Questions 1 - 47

Witnesses

I: Jo Johnson MP, Minister of State for Universities, Science, Research and Innovation, Department for Business, Energy and Industrial Strategy; and Sharon Ellis, Director, International Science and Innovation, Department for Business, Energy and Industrial Strategy.

Examination of witnesses

Witnesses: Jo Johnson MP and Sharon Ellis.

- Q1 **Chair:** Welcome. Thanks very much indeed for coming along. Because the questions are primarily on Brexit-related issues, we had also asked a Minister from the Department for Exiting the EU. We understood that Robin Walker might not be able to attend because of a potential clash on House business today, but we were told on Thursday that he has a meeting with an industry body. It is quite important for Ministers to be accountable to Select Committees, so we are grateful to you for coming, but I want the message to go out that it is important that they give this priority. Thank you for coming along.

In the letter from Robin Walker last Thursday, he confirmed to us that they have now, in that Department, identified and appointed a chief scientific adviser. How much involvement have you had in that? Why has it taken so long to get to this point, particularly when the Committee had given a previous recommendation that it should happen?

Jo Johnson: First, thank you for having me. I am pleased to be here. I spoke with Robin Walker yesterday, and he is sorry not to be able to be with me today before the Committee. We have appeared together before the Committee on previous occasions, so he generally makes himself available, but he has other obligations.

On the DExEU scientific adviser process, no, it is not something that BEIS has been directly involved with; it has been handled by DExEU, and the appointment process has been a matter for them, so it is really for DExEU Ministers to comment on, but I note that they have now appointed a chief scientific adviser, Chris Jones, at director level. He brings many of the skill sets that will be useful to him in that role, particularly a strong understanding of the civil service process that is at work to deliver Brexit.

- Q2 **Chair:** Last month, we got the position paper from the Government on science and Brexit. How much of a role did you play in the production of that paper?

Jo Johnson: I sense an emerging theme in these questions. BEIS was heavily involved in the preparation of that paper, as you would expect. I and other Ministers, as well as officials in the Department, played a central role in developing the paper and getting it out.

- Q3 **Chair:** With regard to the EMA, the European Medicines Agency, it referred to “the importance of a close cooperative relationship between the UK and EU in the field of medicines regulation.” Are you confident that we will be able to pull that off, to maintain that close relationship, and how important is it that we do so?

Jo Johnson: Yes, it is important that we clarify the future relationship. The European Medicines Agency has been playing an important part in the whole regime for clinical trials, the approval of medicines and their



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subsequent regulation. We are working hard to ensure that we continue to have a regulatory regime that works for the UK and for the rest of the European Union after we leave the European Union.

Q4 Chair: A lot of concern has been expressed that if we were outside the EMA regime, either not in the EMA or not aligned to it, there would be a risk of slower access to new medicines in this country. That is the concern that is expressed. Are you confident that we are going to be able to ensure that we have an alignment with the EMA to guarantee that people in this country will not lose out on access to new medicines?

Jo Johnson: Absolutely. That is critical, both for the pharmaceutical and life sciences industries and for patients, who want prompt access to innovative treatments. Obviously we cannot prejudge the negotiations that are under way in Brussels, but it is a core objective of the Government to ensure that we continue to have a relationship with the EU regulatory regime that delivers on those outcomes.

Q5 Chair: The letter from Robin Walker referred to the delays with the clinical trials regulation and said that the Government may have to separately negotiate our own version of the regulation after Brexit. What are you doing at the moment to prepare for that eventuality? Getting that aligned is going to be of critical importance.

Jo Johnson: This is a subject that we have discussed on the high-level working group, which I set up with stakeholders from across the science and university community. The EU (Withdrawal) Bill, which maps over regulations that are in force at the point of Brexit, will not apply to that set of regulations, because they will not have come into existence at that point. We are assessing the situation carefully and analysing exactly what we will need to do to ensure continuing compatibility between the various sets of arrangements.

Q6 Darren Jones: To follow up on the European Medicines Agency point, I am conscious that it is located in London, which I understand—it was slightly before my time—was celebrated by John Major when he was Prime Minister. Have you had any insights from the pharmaceutical industry about the impact of the EMA headquarters relocating to Europe, if it decides to do so when we leave the EU?

Jo Johnson: That is being assessed by Professor John Bell as part of his work on the life sciences strategy. It is important to remember that the strength of our life sciences sector does not just depend on the location of a single agency, which has been there for a number of years, admittedly. The strength of our life sciences is owed to a number of factors: the quality of our science base, the strength of our industrial base in this country and so on. I anticipate that we will continue to be a powerful life sciences player, irrespective of the future location of the EMA.

Q7 Darren Jones: Do you know whether it is planning to stay in London or to relocate?



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Jo Johnson: That is a subject of ongoing debate and discussion.

Darren Jones: So, no.

Q8 **Chair:** When we asked Chris Whitty about the position paper, he described it as long on aspiration but short on detail, and said that that was a fairly widely held view. Is that a fair description?

Vicky Ford: He said it was “high on aspiration.”

Chair: “High on aspiration”—thank you, Vicky.

Jo Johnson: It sets out the core message that the Government wanted to give, which is that we see huge value in collaboration with our European partners in science programmes, in nuclear research and in space, but that the modalities of exactly how we achieve that close collaboration will depend, to a great extent, on the progress of negotiations in Brussels.

Since we published that future partnership paper, which was some time in September, we have had the Prime Minister’s speech in Florence, where I think we edged forward a little bit on the specific nature of the kinds of outcomes that we were seeking to achieve. Whereas, in the future partnership paper, we presented various options for how you might achieve that close science and research relationship, in her Florence speech, the PM indicated that science, education and culture programmes were definitely among those where she saw scope for the UK to make financial contributions in order to secure our continued participation.

Q9 **Chair:** For example, potentially for a successor to Horizon 2020.

Jo Johnson: That can certainly be inferred from her speech, yes.

Q10 **Darren Jones:** In Bristol and the west of England, where I am one of the MPs, I have a high density of scientific research and industrial R and D, with four universities and lots of industry players based there. I was pleased when, in the Brexit partnership paper, you said that you wanted to retain “the brightest and best” in this country, because a lot of them are from the great city of Bristol and the west of England, and when, in your manifesto, you said you wanted to increase the number of scientists in the UK.

At many of the meetings that I have been having, I have spoken with constituents who have decided to move back to Europe because they do not feel welcome in the UK, and the universities tell me that the number of students from the European Union applying has dropped significantly. I understand that even non-EU student applications have gone down by 31,000 in the last year. How do you intend to maintain the brightest and the best and increase the number of scientists if they are all leaving?

Jo Johnson: There is a lot in that question. Let’s deal with the students first, and then we can turn to staff and researchers.



On the student side of things, it is certainly true that applications for this year's entry, in September 2017, from EU students were down 5%, but there was a higher rate of conversion of those applications into places taken up by EU students; so, in the end, we saw only a 1% decline in the number of EU students starting courses. If you think of all the noise that there has been about Brexit, a 1% decline is not particularly substantial—in fact, it is very small—and it really only took us back to 2015 levels of entry of EU students. That is testament to the high quality of our universities, to their international reputation and to their resilience and ability to continue recruiting.

Government have supported that by making it clear that EU students will continue to have access to our loan book and to home fee status for the duration of their studies. If a student starts this September, or indeed next September, September 2018, he or she will continue to have access to our tuition fee loans, as well as our other student support, and their fee levels will be no greater than those of British students. That is on the student side of things.

On the staff side of things—

Q11 Chair: Do we not presumably want something to continue after that, if you want to avoid a big drop-off then?

Jo Johnson: Thus far, we have committed to home fee status, and access to our student finance system, for students for the full duration of their studies, whether it is four years or whatever, if they start this September or next September. We have not indicated what our policy will be for the 2019-20 academic year, because that is after the moment of Brexit. That will be a function of the broader negotiations. We will get to that question in due course as the negotiations develop.

On the researcher side of things, the starting point is that we totally recognise the contribution that EU researchers and staff make to the success of our universities and scientific endeavour. In some of our research-intensive institutions, they account for upwards of 30%, even 40%, of staff, so it is critical that we get this question right. We are paying great attention in the negotiations to ensuring that our universities can continue to attract talent from around the world, including the EU.

Q12 Darren Jones: Do you think that those conversations within the Government will lead to a discrete migration scheme for scientists and researchers, perhaps also including my preference—excluding students from immigration numbers?

Jo Johnson: These questions will be handled as a function of the negotiations. I cannot speculate about any particular arrangements that might be put in place for one category of migrant versus another, but rest assured that we are very focused on making sure that our



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universities continue to have access to the bright minds they need to thrive.

- Q13 **Vicky Ford:** I am sorry, this is continuing the Brexit theme. Robin Walker's letter to us has clarified that the Government will continue to underwrite bids for projects submitted while the UK is still a member of the EU, so, if you bid now but they are awarded after we leave, the Government will continue to fund them. Last week, the president of the Royal Society suggested that it may be helpful to clarify whether we will continue to underwrite up to the end of Horizon 2020, because there is still some confusion for British researchers who are being told by the European Commission that, if they apply for a bid now for a research project, but we leave without a deal, they will not be eligible under the EU for the whole of the rest of their research project.

Jo Johnson: Thanks for the opportunity to clarify. This policy is set out clearly. It was first articulated all the way back in August 2016, when the Treasury first set out the underwrite. It has evolved to capture more steps in the process. As it stands, any application submitted prior to March 2019 but that is subsequently successful will continue to benefit from the underwrite. If your application goes in on 28 March 2019 and you are successful at some point later in 2019, or indeed 2020, the Treasury will continue to underwrite any funding that you are eligible to receive from the EU. There really should not be ambiguity on this point. It is set out clearly in the Department and Treasury guidance.

- Q14 **Vicky Ford:** The EU website says that, if you have applied and the UK withdraws from the EU during the grant period without concluding an agreement with the EU, you may be required to leave the project, but our answer would be—

Jo Johnson: Our answer is, "Refer to the Treasury underwrite."

Vicky Ford: The UK is still going to fund it, so don't be concerned.

Jo Johnson: That is exactly right. The EU announcement on its website was really a statement of the current policy, which is that the Treasury underwrite is good for applications that are received prior to the moment of Brexit. As full members of the European Union, our researchers and institutions have every right to bid and to be successful in those schemes for as long as we are members, and the Treasury guarantee is there for any funding that might need to be paid out after the moment of Brexit.

It is worth highlighting that participations in Horizon 2020 by UK researchers and institutions are still running at strong levels, notwithstanding the kinds of concerns that you refer to. That shows that the underwrite that the Treasury put in place pretty promptly is working, and it is doing the job that we need it to do. That is not to say that we are not watching this extremely carefully and always assessing whether there are further things that we need to do to ensure that our institutions



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continue to bid successfully. For the time being, it seems to be doing the job we need it to do.

- Q15 **Vicky Ford:** I completely concur. Given that some of these bids can take quite a long time to prepare, you could find some examples of people who are starting to prepare a bid now that would actually be after March 2019. Are you considering extending the underwrite into the transition period?

Jo Johnson: That is one of the questions we are keeping under careful review.

- Q16 **Chair:** I have heard concern expressed by some universities that researchers across the EU are starting to shape their proposals for the successor programme to Horizon 2020, and they do not know whether we will be part of it. What advice would you give British researchers, research institutions and universities in that situation? It would seem to me that there is some urgency, and the sooner we get clarity on it, the better.

Jo Johnson: That is why the PM's Florence speech was an important new step in providing that extra certainty. I read it again this morning. When you read it carefully, it indicates as clearly as anybody could reasonably expect that we see huge value in these programmes and that, subject to progress in the rest of the talks, we want to be in a position to make a financial contribution towards our continued participation in them. That kind of statement from the Prime Minister herself in Florence should give considerable comfort to institutions and researchers around the world who are thinking about how to structure their future consortia.

- Q17 **Chair:** You would say to British universities, "Full steam ahead. Get on and develop your propositions."

Jo Johnson: Yes. Get on. We have terrific scientists in this country. Why wouldn't you want them to play central roles in your consortia, from wherever you are in the world? In the UK, we are a top-five collaborator for every single one of the 27 other European Union members. The impact of research that is done between UK institutions and other EU institutions is off the charts. Very powerful collaboration takes place when UK scientists partner up with other EU scientists, and we all want to see that collaboration continue.

It is worth noting that the European Commission's high-level group also pretty much came to that conclusion. The group, led by Pascal Lamy, reported in July, and said that continued collaboration between the UK and the EU in research and innovation was a "win-win." We would agree with that.

- Q18 **Clive Lewis:** I will follow on from my colleague Darren's question, although, in his haste to talk up Bristol, he forgot to mention that his city aspires to follow closely Norwich's lead on scientific research. We have the Norwich research park, the Quadram centre, the Sainsbury laboratory



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and the John Innes Centre, so science is a big issue for us in my city—a big issue for the economy. To what extent have bilateral research agreements been something that the Government are looking at, should there be a no-deal Brexit scenario, if that is something you can talk about?

Jo Johnson: I have enjoyed my visits to Norwich. I have been to the research park and to the John Innes Centre, where people are doing extraordinary science.

You asked about bilateral agreements. Yes, they have a place for the UK. At the moment, we are full members of Horizon 2020, which is a powerful grouping of countries and goes well beyond the EU. We also have individual bilateral relationships that are starting to take more concrete shape as we think about our international science and innovation strategy.

Last month I was in the United States, and I signed our first science and technology agreement with the US, which is a really important umbrella agreement that will, hopefully, remove some of the bureaucratic barriers that have slowed up collaboration between our institutions and agencies. As part of that agreement with the US, we were able to say that we would be a full participant in the deep underground neutrino experiment, which is a big particle physics experiment that will fire neutrinos all the way from Illinois to South Dakota. It is a fascinating thing. We have injected £65 million, which will enable British scientists to stay at the forefront of that exciting area.

The US is not alone. In September we signed an MOU with Canada along similar lines, and there are other partnership agreements in the pipeline with important and exciting science and innovation countries around the world. That is not to say that we are following a path that will see us neglect our important science relations with the EU. Far from it. We do some of our most exciting collaborations with EU countries, and that will continue to be the case.

Q19 **Clive Lewis:** Can I come back to the neutrino experiment funding?

Jo Johnson: Yes.

Q20 **Clive Lewis:** A question that should be asked is, did the Americans make it conditional for that funding—UK money—to go to America because the research is taking place in America? Was that a condition of the funding? Did America say, “We want the research to be done over here”?

Jo Johnson: It is one of the first times that the US has led a big international science programme like that. We have seen many other examples of them around the world, but it was unusual for the US to take a lead. We assessed it carefully through the Science and Technology Facilities Council to see whether it was something we wanted to put money into and whether it would take us forward in terms of the science. A business case was put together, and we assessed it using our own



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business case processes as to whether it would deliver value for money and would be genuinely interesting for our particle physics community. We decided, on that basis, that we wanted to participate.

Q21 Clive Lewis: Generally, how confident are you, should there be a no-deal scenario, that our scientific endeavours will not suffer as a result, in any way?

Jo Johnson: We are working towards a deep and special relationship with the European Union. As the PM said, we are not leaving Europe. We want to continue to collaborate successfully. It is in everyone's interests that we do. We are delivering great science that is extremely impactful. It is a great way of spending science money to spend your resources in a collaborative structure, because the impact is greater—about 50% greater than domestically authored papers on their own.

Q22 Chair: You are not attracted by the no-deal scenario.

Jo Johnson: We want to work towards the deep and special relationship that enables us to continue to collaborate. That is the critical thing, because that will deliver the best value for money.

Chair: Sure.

Q23 Bill Grant: Membership of the board of UK Research and Innovation has been announced in recent weeks. Does that mean that it is good to go? Are they open for business, so to speak, or is there still further work to be done?

Jo Johnson: UK Research and Innovation?

Bill Grant: Yes.

Jo Johnson: It has been in existence in shadow form for quite some time, since we appointed Sir John Kingman as chair and Sir Mark Walport as chief executive. We have recently appointed the rest of the board. I hope the Committee will agree that it is a very strong board, with representatives from Scotland—

Bill Grant: Delightful.

Jo Johnson: With Sir Ian Diamond. They will be the right people to drive the organisation forward to deliver the things that we need it to do. Legally, it comes into existence on 1 April 2018. Sir John Kingman's appointment was as acting chair. We will be running a process to have a formal, full appointment, as we promised when we set up the organisation under the Higher Education and Research Act. That will run its course shortly, in the coming weeks. In shadow form, it is already providing valuable advice to the Department. On 1 April 2018, it will legally come into existence.

Q24 Bill Grant: Have there been any adverse or complimentary comments about the make-up of the board? In particular, it could be seen as slightly



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light on business community representation. Have you had any comments in that regard?

Jo Johnson: We have not had comments in that regard. I would not agree that it is light on business representation. It has some strong business figures. I could point to Mustafa Suleyman, one of the founders of DeepMind, the artificial intelligence company now owned by Google. Many members of the board have had significant experience in the private sector, even if they are not currently in the private sector. Sir John Kingman, for example, was chair of Legal & General, among his other responsibilities. We are conscious of the need to ensure that it speaks to the innovation community and to the business community. We will be watching out for that very carefully.

Q25 **Bill Grant:** For the moment, you are comfortable with the make-up of the board.

Jo Johnson: Yes. We have just appointed the board. We think it is a really strong board. You have to remember what UKRI is trying to do: it is trying to map our strategic capacity to deliver great science and to enable our businesses to innovate on the back of it. It has to be in a position to give high-quality advice to Government about how we allocate capital and resource across our science system, so that we get real value for money from it. It has to be able to drive greater commercial value in our research base. Those are the key things we need it to do.

It also has to be a force for greater interdisciplinarity and multidisciplinary science in our system. We set it up to address the concern that our research councils were too siloed along disciplinary lines; they needed to be able to be harnessed together and to bid into jointly held funds in a way that would enable them to do more interdisciplinary science.

Q26 **Chair:** When will the permanent chair be appointed?

Jo Johnson: That is the process we are now starting. John Kingman has been an acting chair until now, and we will be starting a formal recruitment for the permanent chair in the coming days and weeks. Sir John, I am sure, will be a strong candidate for that role, but it will be an open process.

Q27 **Graham Stringer:** I never know whether to praise the Government or condemn them for the amount of money spent on science.

Vicky Ford: Praise.

Graham Stringer: It was a significant achievement of George Osborne and your predecessor, David Willetts, to protect the science budget in cash terms. On the other hand, as a percentage of GDP, we are behind other countries. The Conservative party manifesto had a commitment, I think, to 2.4% over 10 years and eventually 3%. Do you really believe that is quick enough? All of us around this table would want a higher



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percentage. Do you not think that, given the importance of science, we could move more quickly?

Jo Johnson: I am not sure from your question whether you want us to move more quickly or more slowly.

Graham Stringer: More quickly.

Jo Johnson: You cannot overstate the significance of the recent increases in the science budget; they are very significant. Let us start from where we were when the coalition Government came into office in 2010. The coalition Government decided to protect the science budget in cash terms from 2010 to 2015. That was a significant commitment from the coalition at a time of very significant savings across the rest of the public sector.

From 2015 to the autumn statement in 2016, we were committed to protecting the science budget in real terms, so there was a further and higher level of protection. Then, at the autumn statement in 2016, we did something that I think was pretty extraordinary, which was to announce the biggest increase in science spending in 40 years, effectively pencilling in a 20% uplift in public R and D for the period to 2020-21. That will get us up to about 1.8% of GDP in that year on R and D, both public and private. The Government's contribution at present is about 0.56% of GDP, but it will increase by about 0.15% of GDP over the years I mentioned, to 2020-21.

We are making progress. We are moving in the right direction, from about 1.66% or 1.67% at the moment towards about 1.8% of GDP. That is really moving us in the right direction. We have acknowledged, as a Government, that it is important that we invest more in R and D. Clearly, it is not up to Government on their own to hit the target we have set; we need business to play its part. We are keen to see the business community take full advantage of many of the things that Government are doing to support R and D in the private sector.

R and D tax credits are one means by which Government are trying to encourage businesses to do their bit as well. Take-up of the R and D tax credit has been very strong. It is now worth about £3 billion, in terms of the value of the tax credit itself, and that tax credit supports R and D investment in the private sector to a value of well over £20 billion. What is the exact number?

Sharon Ellis: About £26 billion.

Jo Johnson: It is about £26 billion across the private sector. Through the tax credit, the Government are facilitating and incentivising further private sector investment. It cannot just be Government on their own who get us to the 2.4% target.

Q28 **Graham Stringer:** You have battered the Committee with a lot of



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figures—more figures than I was going to ask for. Thank you for that.

Will the £2 billion of extra funding that you announced in 2016 primarily be used to incentivise more private sector investment? In what you have already said, you have indicated that you are quite confident that the private sector will play its part. Can you confirm that, please?

Jo Johnson: We announced an additional £4.7 billion for science at the autumn statement, which, broken down in years, reached a peak of about £2 billion a year in 2020-21. That money will be used for a variety of purposes. We will be supporting basic discovery science, innovation, the industrial strategy challenge fund and so on. We will use that money for a variety of purposes to support R and D.

What was the other bit of your question, Graham?

Graham Stringer: You set out that you expected the private sector to play its part.

Jo Johnson: I am confident that it will. We want to see greater levels of investment by businesses. That is absolutely essential. We will not meet our 2.4% target unless the kinds of relationships that we have seen in the past between public sector R and D and private sector R and D continue to hold. That is why we are watching with great interest take-up of things such as the R and D tax credit, and it is why we are working to ensure that that remains a competitive and attractive means of business support.

Sharon Ellis: Could I correct something? I think I said £26 billion in relation to the tax credit, but it is £23 billion. My multiples of three were incorrect.

Q29 **Chair:** To follow up Graham's point, if we get to 1.8% by 2021, that still leaves a big leap from there to 2.4% by the end of the Government's defined period.

Jo Johnson: In 2027, yes.

Chair: Is it really credible to believe that we could achieve that, or do you anticipate that there will have to be another decision by Government for a substantial extra injection of Government money? I appreciate that it is part of the mix, but do you think that will be necessary to get to 2.4%?

Jo Johnson: We need to look at the relationships between public and private spending and see whether they are likely to continue to hold for the period that follows 2020-21, which is the last period in this spending review. We have an open mind on that question. We want to see business play its part. That is absolutely vital because, unless business continues to scale up its level of R and D in tandem, we will not get to the target that we set out.

Q30 **Vicky Ford:** To put that in context, Minister, I think I heard you say that



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this Government are spending more money on research and development than any Government in the past 40 years. Can you confirm that that is the statistic? Also, in terms of value for money, we are less than 1% of the world's population, but we have more than 15% of the world's leading articles, and we are leading the world in terms of field-weighted citations, so we are No. 1 in the world for quality of research.

Jo Johnson: I think that is absolutely right. This has been the biggest increase in R and D investment by the public sector since 1979. It is a real testament to the quality of the research base that the Government feel confident that they will get great value for money from such a big investment of taxpayer resources.

It is absolutely critical that we focus on outputs as well as inputs in this whole debate. We can focus a lot on the size of the resources that we are putting in as Government, but it is equally important that the scientific output is rigorously evaluated and then linked back into future funding streams. That is what we are doing, through the research excellence framework, for example, which measures the quality of research undertaken in many of our higher education institutions.

Q31 **Vicky Ford:** Just to confirm that, if I may: more money than any Government for 40 years, and leading the world in the success of the output.

Jo Johnson: Absolutely. It is the biggest increase that any Government have given to public R and D since 1979 and, yes, we are world class as set against the peer group of our comparator countries. We are No. 1 in the world for field-weighted citations.

Q32 **Clive Lewis:** Do you hope that that increase in expenditure on science and research will mean that we move from being one of the OECD's worst performers in terms of productivity, which is obviously linked to science and research? It is great that we are spending it now but, if you look from 2000, spending on research and development has pretty much flat-lined through successive Governments, hasn't it?

Jo Johnson: That is a critical point. We have to pan out and ask why we are doing all this. We are doing all this because there is a very strong relationship between R and D intensity and regional productivity. We can see clearly that, where we have productivity gaps in this country, it is associated with weakness in R and D. We want increased R and D expenditure to drive greater productivity in more parts of the country.

Q33 **Chair:** I am conscious that an awful lot of the money is spent in the south-east and the London-Cambridge-Oxford triangle. What do you think needs to happen as regards industrial strategy to drive local growth in other regions of the country, using science spend to generate growth in the north, for example?

Jo Johnson: It is true that we have a strong body of research-intensive institutions in London and the south-east, and they account for getting on



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for 45% or 46% of our public R and D spending. We are keen to ensure that, through smart specialisation, we identify areas of excellence in other parts of the country—they are well known already, in many cases—and that they are properly supported. We must continue to fund excellence and not spread resources in such a way that finite amounts of money are duplicated inefficiently. We have to be smart in the way we fund our science system, and build on excellence, where it is identified, across the country.

We have tools that are enabling us to do that now. The smart specialisation process is one, and that feeds into the science and innovation audits, which are now in wave 3 of that process. This is where, bottom up, local authorities, universities and business organisations get together to look at their research and innovation ecosystems and identify where they feel they have a comparative advantage and a capacity for real excellence, and could be supported without the Government losing touch with their core objective of continuing to fund excellence. We see a real role for capacity building in the system in that way, using the science and innovation audits to identify areas that have a capacity for excellence now.

Q34 **Chair:** Do you envisage that we might end up having to use some of the £2 billion extra as the entry fee to any successor to the Horizon 2020 scheme?

Jo Johnson: No. The £4.7 billion—£2 billion in 2020-21—is money that is separate and quite distinct from the amount that we contribute to the EU's budget, or that we might expect, under any future arrangement, to pay in as the entry price to any future relationship with either the end of Horizon 2020 or framework programme 9.

Chair: Good. That is helpful. Thank you.

Q35 **Stephanie Peacock:** When will the Industrial Strategy White Paper be published?

Jo Johnson: In coming weeks.

Q36 **Stephanie Peacock:** To return to a theme that has come up quite a lot, how much of the Government's work on the industrial strategy is tied into the Brexit strategy?

Jo Johnson: The industrial strategy is a critical part of how the Government want to make this a country that works for everyone. It is about ensuring that opportunities are made available to people, that barriers are removed and that the state plays its role as a strategic support to, in particular, business and the science and research community.

Q37 **Stephanie Peacock:** The industrial strategy challenge fund is already awarding grants but, as you said, the industrial strategy itself is not yet published, and possible sector deals are not finalised. Is there a risk of



making spending allocations without the industrial strategy being published?

Jo Johnson: We had an industrial strategy Green Paper earlier in the year, which has informed a significant amount of thinking and extensive consultation with the research and innovation and business communities. I do not think that we are putting the cart before the horse, if that is the general sense of your question.

There has been a massive amount of work, since the creation of the Department back in July 2016, to develop the industrial strategy. We have consulted on the Green Paper; we have had extensive consultation. As you said, that has informed the first wave of projects or challenges for the industrial strategy challenge fund.

Chair: Thank you. Good.

Q38 **Graham Stringer:** The last time you were here, Minister, you had set up a website to see if there was any solid evidence—as opposed to anecdotal evidence—of British science programmes or British scientists being discriminated against, following the decision to leave the European Union. I wonder if you could update the Committee on whether you found any evidence.

Jo Johnson: It was not actually a website; it was an email.

Graham Stringer: Sorry.

Jo Johnson: We broadcast repeatedly that we were keen for hard evidence of greater than usual levels of churn, for example, of people in and out of our institutions, or greater than usual levels of difficulty in recruiting people from other EU countries. Thus far, we have not been given that evidence. There have been anecdotal descriptions of difficulties in institutions from time to time, but we have not yet received a substantial body of evidence from any representative group.

Sharon Ellis: We continue to monitor that inbox up until this day. Following the announcement of the underwrite, a lot of the traffic into the inbox went away, but just to confirm it: we have not received any concrete evidence through that inbox of discrimination against people who participate.

Jo Johnson: As I said earlier, the levels of UK participations in EU funding programmes continue to be at pre-referendum levels, or close to them.

Q39 **Graham Stringer:** There have been some reports that British companies have been frozen out of contracts for the Galileo projects. Are you aware of those reports? Do you believe they are accurate?

Jo Johnson: We are working closely with the space sector to ensure that they can continue to participate successfully in programmes such as Galileo, Copernicus and SST—the big EU programmes that are currently



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running in the space sector. UK companies have made a massive contribution to the success of those programmes over the years—companies such as Surrey Satellite, Clyde Space and CGI Airbus—and we want that to continue. That is why we have identified space as one of the programmes where we see value in making a future contribution.

Q40 Graham Stringer: I don't think that quite answers the question. Are you aware that there are reports that British companies are beginning to be frozen out of those programmes? If you haven't heard that—

Jo Johnson: No—of course not. I am in very regular contact with all the companies that I have just mentioned.

Q41 Chair: Are they expressing concerns?

Jo Johnson: No, I think it is absolutely vital for the future success of these programmes that we continue to have strong UK participation in them, and the Government are working very closely with these companies, with SSTL, and we are in close contact with the European Commission to ensure that they can continue to bid successfully and fulfil any contracts that they win.

Q42 Graham Stringer: Minister, you have been unusually reticent to give an absolutely straight answer to that. Is there any evidence? Are there reports that our companies are being disadvantaged?

Jo Johnson: I have certainly seen those reports. I am aware of the concerns, and I have been discussing them with the companies directly, and with the European Commission. We want to see our companies continue to participate and play a full part in these programmes.

Q43 Graham Stringer: You are taking action on the reports.

Jo Johnson: Absolutely.

Q44 Chair: Is it the companies themselves that are raising concerns with you?

Jo Johnson: Yes. As I said, I am in regular contact with SSTL and Airbus and participants in the Galileo programme. The UK has been absolutely essential to the success of the programme. We are active in literally every bit of the Galileo value chain, from ground control through to payloads through to the security side of it, in one way or another.

Q45 Chair: We are conscious of all that. What we are concerned about is whether there is any evidence of bad practice going on, where British companies are at risk of losing out as a result of the Brexit process.

Jo Johnson: There are those risks; I agree with colleagues. There are risks, and we are trying, as a Government, to help the sector to manage them as effectively as we can.

Q46 Graham Stringer: I have a more general question. There have been a number of Brexit questions, and it is not surprising that people look to



negative outcomes of Brexit—that things will get worse or things will be lost. Have you, as the Science Minister, looked at areas where we have been restricted because of EU regulations? GM foods is the obvious place, and agrochemicals. Have you looked positively at where we can be released to do more and better science when we leave the EU?

Jo Johnson: Regulation is an incredibly important area, and it is the subject of the next meeting of our high-level stakeholder working group, which I have convened to bring together all the key representatives from the mission groups, the universities and the science community. We are meeting next week to discuss this issue. What is the optimal regulatory relationship for the UK, post Brexit, to the rest of the EU? We are looking at that, and we are discussing it next week in the high-level group.

Q47 **Vicky Ford:** I want to come in again on the questions about Galileo and the satellite sector. It is not just British companies but the British taxpayer that invested considerable sums in the satellites, Galileo and Copernicus. My understanding is that there may be issues to do with access to data, because of security. The data collected by the satellites have commercial and security benefits, and the EU can currently be quite restrictive on the individuals who would be able to work on those programmes being from the EU, which obviously leads to questions about whether British citizens, as opposed to British companies, could potentially be frozen out if we do not have this deep partnership. I just wanted to put that on your communications radar as an issue that has been raised in my constituency by space sector organisations—a watching brief.

Jo Johnson: We certainly are aware of that concern, and it is one of the things that we are keeping under careful review. It will be a subject of the wider negotiations in Brussels.

Chair: Thank you both very much for coming along. We appreciate your time.