



HOUSE OF LORDS

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The Select Committee on Science and Technology

Inquiry on

THE RELATIONSHIP BETWEEN EU MEMBERSHIP AND THE EFFECTIVENESS OF SCIENCE, RESEARCH AND INNOVATION IN THE UK

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Questions 53 - 61

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Witness: Professor Dame Anne Glover

USE OF THE TRANSCRIPT

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Members present

Earl of Selborne (Chairman)
 Lord Cameron of Dillington
 Lord Fox
 Lord Kakkar
 Baroness Manningham-Buller
 Lord Maxton
 Baroness Morgan of Huyton
 Lord Vallance of Tummel

Examination of Witness

Professor Dame Anne Glover, Vice-Principal External Affairs and Dean for Europe, University of Aberdeen

Q53 The Chairman: Welcome, Dame Anne. Thank you very much for joining us today. We are most grateful to you for helping us with our inquiry on the relationship between EU membership and the effectiveness of science, research and innovation in the United Kingdom. We are being broadcast, so, perhaps for the record therefore, you could introduce yourself. If you would like to make any opening statement, do feel free to do so.

Professor Dame Anne Glover: Thank you. I am Anne Glover. I am the vice-principal for external affairs at the University of Aberdeen; also dean for Europe. Prior to my returning to my home university, for three years I was the Chief Scientific Adviser to President Barroso at the European Commission. In that context, as my main responsibility in the chief scientific adviser role was to look at the provision of evidence for policy-making, I feel that I was absolutely submerged in the EU environment, particularly with a view to how evidence is used in policy-making. It was not so much my responsibility to look at policy for science, which is the funding of the Horizon 2020 programme, but inevitably I had some involvement in that. I think I will leave it there.

The Chairman: Thank you very much. Clearly that is enormously relevant to our inquiry. If I may say so, your previous incarnation in Scotland, as chief scientist, is also relevant. Perhaps we can ask your advice on that perspective as well, as to the impact on European research and funding in that country.

Let me start with a general question. Given your experience in Europe, clearly, you are familiar with the different mechanisms of advice in different member states and they can be very different. Indeed, the new regime is a rather different model from the one under which you operated. Would you like to tell us how you expect the mechanisms of advice to influence the effectiveness by which scientific advice contributes to public policy?

Professor Dame Anne Glover: It is an interesting question, because I am not sure it is the mechanisms which affect how evidence is used in policy-making; it is probably more the philosophy of the government concerned. If you look across the European Union, there are 28 member states and probably about 26 different mechanisms for provision of science

advice. For a long time, the UK has had a model of a Chief Scientific Adviser supported by chief scientific advisers in different government departments. That is a very Anglo-Saxon model. It is one that is also adopted in Ireland. If we look across the rest of the EU and the member states there, there is a whole variety of mechanisms which can involve sometimes trusted individuals of a particular government being asked to provide advice or procure advice from a broad base. Sometimes it is a learned society, or organisation like that. Sometimes it is a research institution, which a government might fund, or an independent research institution. All of these different mechanisms are used. It is something that I was very interested in. If you look at the mechanism and try to correlate the mechanism with what you see at the sharp end, where government is procuring scientific evidence for policy-making, I do not see a lot of correlation. What is important is that the government wants evidence on which to base its policy, rather than on the instrument that is being used. That is my experience.

The Chairman: Given that there are these different philosophies within the different governments and different mechanisms, do you see a different approach within the Commission to accepting advice or asking for advice from what you would find in Scotland, for example, or elsewhere in the United Kingdom?

Professor Dame Anne Glover: It is inevitably different. If I comment from personal experience, when I went from being Chief Scientific Adviser to the Scottish Government to Chief Scientific Adviser to President Barroso, I can remember having a discussion with President Barroso about a particular issue. I had convinced him of a point where the evidence was compelling and that we should consider how that was used. He said to me, “That’s fine, you’ve convinced me, but now what do we do because there are 28 member states?” That is different from in Scotland, and if I had had the conversation with—at that time—Alex Salmond. I did have a conversation where we talked about an issue and he said, “Right, I accept that. Now, this is how we can go forward”, because he had the authority/autonomy to be able to do that. That is not the case in the European Commission because at the end of the day it is the Council of Ministers, essentially the member states, that decides what is ultimately adopted or not. That is slightly different from how you use the evidence.

The Chairman: I know very well that you were constrained by resources, which were clearly inappropriate for the scale of the job that you had, but you had nevertheless to try and give advice to a council of 28 ministers as well as the President and others at the Commission. What opportunity did you have to give such advice to the Council of Ministers individually?

Professor Dame Anne Glover: Very little to the Council of Ministers. That is why, whilst I was at the Commission, I tried to develop a network of chief scientific advisers, or equivalents, in each of the member states. The main purpose in doing that was to try to deliberate on issues where there might be some significant uncertainty around the evidence and, where possible, to come to a useful consensus on the evidence, which was then agreed amongst the—I will call them chief scientific advisers of the member states. That was what would inform the Council of Ministers. At the moment, the Council of Ministers does not have formal science advice. What it relies upon is science advice from its own member state, and whatever mechanism that happens to be. My purpose was to try and have a more transparent agreement on the evidence so that the Council of Ministers, when debating issues, might, if you like, take for granted the evidence and not start debating it, but start debating the policy, which is obviously where they are more skilled.

The Chairman: It was not within your gift to be able to nominate such advisers; you had to identify who was fulfilling that role in each member state. Did you have informal meetings with these national advisers to their Ministers?

Professor Dame Anne Glover: Where there was somebody already identified, yes, I immediately got in contact and we discussed what might be possible. Where I had the majority of discussions was going to as many member states as possible to talk to their respective governments—it was normally a science ministry or something equivalent—about the value in nominating someone who would represent that particular member state at a forum of science advisers. When I left the Commission, about 15 member states had nominated someone. They were sometimes the head of a learned academy, sometimes a scientist within government. There was a whole variety of different backgrounds of the people who were nominated. The important thing is they were trusted by that government and that was crucial. I did not mind so much whether it was somebody who was called a chief scientific adviser.

My understanding is that the new mechanism of science advice at the European Commission will also resurrect that European science advisers' forum. It will build upon that to try to develop this opportunity for identifying consensus around the evidence for policy, and that would support the Council of Ministers.

Lord Maxton: You have talked about member states, quite rightly, but how many chief scientific advisers are there within the United Kingdom itself? Does this happen in other countries as well?

Professor Dame Anne Glover: There is a UK Government Chief Scientific Adviser, Sir Mark Walport. My understanding is he is supported by a chief scientific adviser in every department. I do not know the number of departments.

Lord Maxton: You were the Chief Scientific Adviser to Scotland? Is there an equivalent one in Wales, England and Northern Ireland as well?

Professor Dame Anne Glover: Sorry, I misunderstood. There is one in Wales. I do not think there is currently one in Northern Ireland, but I am embarrassed to say I do not know; there may well be. There is not one in England.

Lord Maxton: That is covered by the UK overall. Does this happen elsewhere?

Professor Dame Anne Glover: Not generally. When I first went to the European Commission in 2012 there were only three identifiable chief scientific advisers to governments of the member states. There was one in the Czech Republic, one in Ireland and one in the UK. In terms of identifying them, there were only three.

Q54 Lord Fox: You talked about creating a network and then delivering a consensus. Did you find that consensus process straightforward or frustrating? Was it effective?

Professor Dame Anne Glover: I had not developed the network to the point where we were taking issues of the day, debating them, and providing material that we would then pass on to the European Council. With regard to other areas where we did have some discussions on two or three topics of interest because it would inform policy, but there was some uncertainty around the evidence, it certainly was not frustrating. In a way, that is what we like to do in science. It is almost better if there is some disagreement, because there is nothing worse than talking to someone who thinks exactly the same.

Lord Fox: Except when you are trying to get political acceptance from people?

Professor Dame Anne Glover: I appreciate that. That is always the difference between science and politics. We love uncertainty; politics is slightly different. On looking at delivering consensus, yes, we could. I remember particularly having a discussion with two groups of scientists who were on opposite sides of the argument around endocrine-disrupting chemicals. There was a very public debate across the European Union about what policies the Commission would be bringing in. From the scientific point of view, some people felt they were too stringent, others felt they were too lax. We were able to bring those sides together in an environment with no policymakers present; only scientists talking. We were able to define the questions and, most importantly, define where there was agreement and identify those areas of uncertainty which needed more attention. Instead of saying it was frustrating, it was almost the opposite of that. It was quite uplifting that you could do something so constructive.

Baroness Morgan of Huyton: I am intrigued. When you say it was constructive and you reached a level of consensus, what happened to that evidence? President Barroso gets your pretty consensual position on something like that; how is that then translated to the Council of Ministers? Is that only through the President? Is he the only mouthpiece, in a sense?

Professor Dame Anne Glover: No. In fact, President Barroso was not really involved in that process. First of all, I published the agreement that we came to so that anybody who was interested could see the discussion that we had. That was passed on to the area of the Commission that was dealing with policy development. In that case it was DG Environment which was taking the lead. That went back to them and they acknowledged the usefulness of that and went on to look at how they would construct a consultation in order to refine their policy. The Commission is responsible for developing the policy, which they then present to the Parliament. The Parliament often makes very large numbers of amendments and that comes back to the Commission, so that is an iterative process back and forward. At the end of the day it goes to the European Council, which makes the decision.

Q55 Lord Cameron of Dillington: You have very clearly spelt out the technical framework; thank you. What are your views on the commitment within Europe to the incorporation of science within policy-making. There are three parts. There is the European Parliament, which seems to be much more concerned with policy and, in my view, in the past seems to have slightly ignored the science. The Commission is very good at talking the talk, but not quite so good at walking the walk in some cases. The Council of Ministers “act according to the philosophy of the governments concerned”, to quote what you said a moment ago. Are they committed?

In the case of Brexit, do you think that the UK could then get on and really incorporate science within our policy or would we always be looking over our shoulder because we are part of Europe, seeing what was going on in Europe? How would that work?

Professor Dame Anne Glover: If I take that in reverse order. At the moment we have a commitment to evidence-based policy-making in the UK. That would be the same whether or not we are in the European Union. If there was a Brexit, I am sure we would still use evidence in our policy-making. What would be important is what policies were being developed in the rest of the EU in the event of a Brexit, which we would have to adhere to—

regulations policies and so on—but we would not have the chance to influence. That would be the difference.

Then you asked whether the European Commission values evidence in policy-making. I would say yes they do, and there is a lot of evidence to support that. Most of the policies that are developed in the European Union are very technical in nature, so because of that you require evidence. If I think of a scenario: if somebody wishes to propose a policy, then one of the first things you have to do is identify if that policy will have impact or not. If the policy will have impact you must do an impact assessment. If you are doing an impact assessment you must gather an evidence base. There is a procedure by which you cannot go forward to develop a policy without producing an evidence base.

I suppose the next question would be how you get that evidence. As we all know, the answer to a question depends on what question you ask. People can be very creative with evidence. If we look at the European Commission, following on from the development of the EURATOM Treaty in the 1950s, which was partly to look at nuclear science, by the 1970s they had the Joint Research Centre, which is the European Commission's science advice service. This is a very large outfit. There are over 3,000 employees and about 2,500 are active scientists. They have a budget of about a third of a billion euros per annum. They are responsible for doing science, for helping to create the evidence around standards, and a very broad spectrum of science from health through energy, cybersecurity, all of these areas. They help to deliver the standards in which we all trade, but, more importantly, we have had a huge influence as the European Union on what the standards are for world trade when it comes to safety of pieces of equipment, pharmaceuticals, and so on. We have a number of agencies that support that. Here in the UK we have the European Medicines Agency, based in London, and that is important for how clinical trials are developed, how the evidence is used, and what pharmaceuticals are ultimately proposed for use in drugs, treatments, medical devices, and so on.

The European Commission has a very strong history of recognising the value of evidence in policy-making.

Lord Cameron of Dillington: What about the European Parliament?

Professor Dame Anne Glover: It is interesting. The Commission highlights the value of evidence and has a number of different structures to deliver that. The European Parliament has the Parliamentary Research Service, which is headed up by a UK national, Anthony Teasdale. It is very much based on the Parliamentary Research Service that we have here in the UK. That provides a lot of the background information for parliamentarians. Do they use that evidence? I do not know, because there are over 750 Members of the European Parliament and they cluster into about 125 political groups—who tend to vote with the political philosophy—which may choose to ignore evidence, but that is the same for every government worldwide. There are lots of cases, some very justifiable, where you might ignore the evidence because there are other factors—philosophical, ethical and so on—which you may wish to give precedence to.

The Council is completely different. The Council may ignore what Parliament has deliberated—it is the structure of the European Union democracy, which is quite unusual and very different from a member state government. They do not have a scientific advice service in the Parliament, which was why I felt it would be useful having this European science advisers' forum, with a member from every member state, to be able to advise their

government and appraise their government of what all the other member states understood the evidence to be, so there was complete clarity there.

The Chairman: You referred to the Joint Research Centre as a very considerable resource available to the Commission. I think you quoted the budget as a third of a billion euros a year. Effectively, this is an in-house capacity for the Commission. Is there a case for saying that science and research within the member states might be enhanced, were some of this work to be put out to member states for their own research institutions, or do you feel that it is more important to keep this central research capacity to the Commission?

Professor Dame Anne Glover: Understanding how the Commission is viewed and how the European Union works, I think it is better to have it in-house. The reason I say that is, for example, if you gave a piece of research work to a member state, and it was on the use of fossil fuels in provision of secure energy supply, if you went to a member state which used substantial fossil fuels and it was very important for its economy, and it came back saying, "It is a very good idea to do that, and we would promote the use of fossil fuels", other member states might be very critical of that and question the independence. Whereas if the work is done internally in the European Commission, the Joint Research Centre is independent. During the three years I was at the Commission, I did not ever see an instance where a scientific report produced by the Joint Research Centre was put under any pressure by Commissioners or other outside forces to alter the conclusions of a piece of evidence gathering. It is rather unusual, in that it is independent within the Commission.

The Chairman: Do you think pressure would be more likely were the research to be conducted in a member state?

Professor Dame Anne Glover: It is hard to judge whether it would be more likely, but there might be a perception that it was more likely, and that could be equally damaging. It might well be that you get a very honest opinion, but I think that other member states might still try to undermine that opinion if they did not like it by raising a concern of conflict of interest. Perception is important.

Q56 Baroness Manningham-Buller: I think you have answered the question I wanted to ask, which was about the value the Commission puts on peer review and dispassionate judgment of the science. I think you said that they have the same policy that you would have in this country on that. Is that true?

Professor Dame Anne Glover: There is an internal peer review system for the use of evidence in policy-making, but when it comes to funding research programmes, for example through the Horizon 2020 programme, you are absolutely right, there are panels, with chairs of those panels looking at the proposals which are put forward. There are very clear and transparent guidelines for how those proposals should be scored. There is also feedback to applicants, if they are unsuccessful, on what particular parts of their proposals should be improved in future applications.

Baroness Manningham-Buller: Would you be unsympathetic to a Brexit argument that we do it better here? It sounds as though it is well done there.

Professor Dame Anne Glover: I think it is well done. Every peer review system, including our own, has a few warts here and there. Nothing is ever going to be perfect because there is some subjectivity everywhere. I would say Horizon 2020 is a very broad programme in which the UK does very well. In this latest embodiment of research funding, Horizon 2020, we are

second in the number of grants awarded and the amount of money awarded. We get far more in funding back from Horizon 2020 than we contribute, or would contribute as an associated country.

The European Research Council funds research purely on the basis of excellence. It is peer reviewed. It has broad support. It is envied in a global context. If I look at the UK's success, the UK is the first in getting those European Research Council grants. I think we have 198 in the first tranche, which is way more than our closest competitor for ERC funding, Germany, which is significantly behind us.

If I may I will talk about that a little bit, because it is an interesting point. ERC funds research purely on the basis of excellence of science. The reason that there is such a strong commitment to that is through ministerial meetings, where the UK has been very active in order to highlight the importance of having a funding instrument which is purely based on excellence. The cohesion member states may be less keen to see that it is based on excellence because they will have an imperative for capacity building. If there were a Brexit, the voice of one of the most important science member states of the European Union would not be there influencing how ERC funding was distributed. The top three science member states are the UK, Germany and France, and we do have a very big voice in all things science at EU level.

Q57 Baroness Morgan of Huyton: Can I ask you more about the structural funds and science. It is clear to us that while we do extremely well in the way you have just been talking about, we do considerably less well on the structural funds side. What we want to understand is, what scientific advice is taken into account regarding structural funds going to support science and research and innovation? Why do we do so badly? Is there anything we should be doing differently to get a fairer share of that—or perhaps we get our fair share? Help us understand. We heard last week in evidence that, exactly as you are describing, in one pocket, in a sense, we do extremely well, but on structural funds we do not.

Professor Dame Anne Glover: I suppose the structural funds and cohesion funds are very much focused on those member states which are less well developed regarding their science and economies, so you might argue that we would do less well in those areas. On the structural funds, what the Commission has asked all member states to do is to develop a smart specialisation policy. In order to support that, they have a smart specialisation panel.

Baroness Morgan of Huyton: Can you explain what that means?

Professor Dame Anne Glover: In the UK, for us, smart specialisation might look at developing an area where we are currently very good, but need more support to become excellent. We are very good in an area, such as developing the concept of personalised medicine, but we might look to the European Commission for more support to develop that even further and spin that out with other member states looking for partners, or whatever. It can be in any area, not necessarily health; it could be in transport, energy or whichever area. A member state, perhaps one of the cohesion member states, which had less capacity for science might come to the European Commission and they would go to the Directorate-General for Research and Innovation, which is responsible for this, and they might interact with the smart specialisation panel within the Commission, which would give them advice on where they might go to help build capacity and what they might need to put in place to have coherent output in that particular area. I do not know if you would define that as science

advice, but certainly it is advice that would allow stronger submissions to that smart specialisation policy.

The Commission has also identified that it is very important that member states, particularly those cohesion states, to build capacity, should be spending structural funds, regional development funds, on science, engineering and technology because that is a sustainable way of growing the economy and then we all benefit, because the market of the European Union becomes stronger, so it is in our interest. There has been a definite shift towards using those funds for science rather than as previously on construction projects—a bridge or roadbuilding, those sorts of things.

Baroness Morgan of Huyton: To your knowledge, are we doing that level of interaction that makes sense for the UK and the position we are in?

Professor Dame Anne Glover: To be honest, because the UK is so smart already in its approach to this, we have very well-established connections. Probably the greater input from the Commission in supporting others goes to those cohesion member states.

Lord Fox: Continuing on this smart specialisation line, there are two things. Are you suggesting that it needs to be in applied science as much as science, in the sense that you need a route to market? Are you also saying that in the event a nation strategy for a smart specialisation is taken, that country then becomes, if you like, the European hub for that particular field or appliance of science, or are there groups of other countries with the same smart specialisation and we are racing against each other? How does it work?

Professor Dame Anne Glover: European funding is targeted towards basic research—that is, more the ERC funding—as well as more applied research. Horizon 2020 has most definitely focused on greater engagement with SMEs, for example, in the funding programmes, which has been largely successful, but still has some way to go. It is an interesting question. I think you are asking me if you develop a smart specialisation hub in Estonia for smart grid or something, does that mean only they do it and nobody else does? No.

Lord Fox: It is only funded that way. Is the European Union then spending its smart-grid funding wherever it sees fit, so to speak, or is it funnelling it into one place?

Professor Dame Anne Glover: There are not pots of money for smart grids, sustainable transport, fuel cells, or whatever, and once that is given for smart specialisation to one country it cannot be given anywhere else; that is not the case. If we look at it in microcosm at the UK level, when we fund programmes on nanotechnology we fund 10, 15, 20 programmes and they tend to be complementary. The European Commission should be in a good position to identify complementarity, which would strengthen the overall European output and European dominance in a particular area. I think that is the philosophy within the Commission in its funding programmes in the structural funds.

Lord Fox: You mentioned identifying complementarity, and that is a fairly complicated thing to do. How does the Commission go about doing that?

Professor Dame Anne Glover: I am not so sure it is that complicated. I mentioned nanotechnology. There might be one group which is involved in nanofabrication, so looking at how you make nanomaterials, and so on. There might be another group that is looking at the environmental impact of nanomaterials. There might be another group that is looking at nanorobotics and how you might use nanorobots in health, so that I can inject myself with such a robot and it might clean up my arteries, for example. That is not on the market yet, I

have to say. Those three areas are all nanotechnology, but the reason I have given you those is that I think they are very complementary. You should not be developing nanomaterials if you are not confident that they do not have any unforeseen consequences regarding environmental impact, or the health of the people fabricating the materials. You might also want not only to make the materials but to look at how you apply them in health or catalysis, or wherever. I would say that the European Commission is in an ideal position because it has the database of what has been funded and it can, and does, identify people, across the European Union, who might not know each other and might not be working together and bring them together on a working group.

Lord Fox: Matchmaking?

Professor Dame Anne Glover: Yes, they do a form of matchmaking and it is very successful. The European Union is half a billion people, and they are not all scientists, of course, but it is very difficult to know everybody in one area of science where you work. It is very useful. We do not normally identify that as an accountable value, but it is hugely useful that someone is doing it. I am sure it is not perfect, but they are doing it.

Lord Maxton: If we left, would that not happen?

Professor Dame Anne Glover: I think it would still happen. It would depend whether we were an associated country or not. If we were an associated country, I think we would still hope, and could expect quite justifiably, yes, that such matchmaking would still take place.

Q58 Lord Fox: That feeds into the question that I was going to ask, which is, do we think we could maintain the relationship as we currently have it, at the level that we currently have it, from the position of being an associated country—let us say a Norway or a Switzerland?

Professor Dame Anne Glover: You would be much more knowledgeable about this than I am, but there would be an awful lot of question marks about the chances of being able to negotiate an associated country deal.

Lord Fox: That was my next question.

Professor Dame Anne Glover: Let me be quite mischievous and give you a parallel. There was a referendum in Scotland for independence. The ‘yes’ campaign who wanted independence, quite happily said, “Yes, we will still negotiate to be part of UK research funding and UK research councils, and we will operate our science on that basis”. The rhetoric I heard from the ‘no’ campaign was, “There isn’t a chance of that. What makes you think if you became independent that we would include you?” That was rhetoric around campaigning before a referendum was taken, but I have to say that there is bound to be, and I have heard that there would not necessarily be—although this is a sample size of one, so not that relevant—a huge appetite for giving the UK associated country status. It could well be that that diminished completely if there was a Brexit and after the event things might change, who knows. That is very uncertain.

Let us say we did negotiate to become an associated country. We would contribute to Horizon 2020 on the basis of our GDP, as other associated countries do. We could get more out of Horizon 2020 than we contribute because when you are an associated country you get all the benefits. If you put in more good, acceptable grant applications than your GDP contribution, you would be winning, because you would be getting more out, but you would have to abide by all the rules. I mentioned the Joint Research Centre earlier—that third of a

billion euros per annum. That is funded through Horizon 2020. We could not opt out of that; there is no Horizon 2020 à la carte. We could not influence any of the calls for proposals. It is an area that I am very familiar with in the European Union, where the UK voice is very welcome, very loud, very credible, and it is acted upon. We chair many of the influential committees and, regarding identifying members of the council of the European Research Council, we have members on that council. We help to deliver policy in science funding and where it is spent. That is not available to associated countries.

Lord Fox: So Norwegians or Swiss do not chair committees?

Professor Dame Anne Glover: No.

Lord Maxton: To some extent rightly, you raised last year's referendum in Scotland, of which I was part too, but of course the present First Minister, Nicola Sturgeon, has said that in the event of there being a 'no' vote in this country, in the United Kingdom, then Scotland would hold another referendum on independence and may very well vote 'yes' this time. How would that affect things?

Professor Dame Anne Glover: I am not sure my expertise covers that. What the First Minister said was if the vote in England, Wales and Northern Ireland was to leave, but the vote in Scotland, when you disaggregate the vote in the Brexit referendum, was to remain in the EU, then that would trigger a vote for independence. I know that Scotland benefits hugely from membership of the EU because of its science base. When I was Chief Scientific Adviser for Scotland, I commissioned an independent report to look at the strengths and weaknesses of our science and engineering base in Scotland, and, relative to our GDP, the impact of the research done in Scotland is number one in the world. Number two is Switzerland. If you forget GDP, Switzerland is number one and Scotland is number two. We are incredibly research intensive, which is hugely valuable for the rest of the UK. It means that, as a nation, Scotland depends upon having funding for research to be able to then translate that knowledge generation into impact for the economy and citizens. As I say, that is not my area of expertise. I suppose Scotland has met all the preconditions of membership, but there would still have to be an application of process to the European Union, and I have no idea how that would go.

Lord Maxton: Nor have I.

Q59 Lord Vallance of Tummel: I think you answered this question earlier, but I will ask it anyway. How much influence do UK scientists have over agenda-setting and priority-setting within the EU? What are the mechanisms that are used to exercise that influence?

Professor Dame Anne Glover: We have substantial influence. If I take something that I regard as invaluable as an EU contribution to our research, or science, it is the research infrastructure that the EU delivers and we can all use. Much of science is supported by very substantial infrastructure and it would be very hard for an individual member state to deliver all the infrastructure needed for a diverse research base, such as we have in the UK. The chair of the committee which looks at European infrastructure is Professor John Womersley, who is a UK scientist, and it is very important that he chairs that committee. We have a whole number of such influences, whether it is on open access publishing or developing strategies for what calls Horizon 2020 will put out to the research community to get good research funding and to support our SME population as well as our European citizens. We have probably more than our fair share of chairs of committees, which are opinion-forming.

We have a large membership of committees. I do not have actual numbers here, but the Commission could make those available. We do have substantial influence.

That would be gone at a stroke if there was a Brexit because, although we might still apply for funding, we would have no way of influencing. For example, the UK has proposed a programme on dementia research with the G7 countries and that has found favour with the European Commission, who are going to come in behind that and support a whole number of initiatives. We can do a fair bit with our own funding, but the Horizon 2020 funding that we have already secured in the first round of grant funding is about €1 billion coming to the UK. It is about €4 billion to the grants themselves because there are partners in other member states. For us, it is like having another research council funding our research. In the absence of that, the big question would be, would the UK economy, or the philosophy of whatever Government was in power, feel that science, engineering and technology was sufficiently important to our economy that they would hugely increase the budget, which means they would have to spend an awful lot less on a number of other areas, whereas at the moment we get that funding from the European Commission?

I was a little surprised to discover when I was working in Brussels for three years that, when I went to specialist committees, general committees, or whatever, there was often a UK chair, but most often I saw my colleagues sitting round the table. Indeed, merely by coincidence, on my way here, at Aberdeen Airport I met two colleagues of mine from the University of Aberdeen on their way to expert committees at the Commission. We are very present and very influential.

Q60 Lord Kakkar: I want to turn to the issue of the new Scientific Advice Mechanism that has been established, and in particular the High-Level Group, and seek your views on whether you think that this new mechanism is going to be effective and deal with the issues you have discussed with us. We have heard that this is going to be a reactive mechanism, so they can be called upon to give advice, but they cannot sit round the table together and offer their advice where they see problems and issues arising. Is that going to be a problem? Should there be the opportunity for such an advice mechanism to offer advice because it sees problems in areas where science should be considered? We understand there is a proposal to elect a chair of the High-Level Group. Will that become the new chief scientific adviser, by default, to the Commission?

Professor Dame Anne Glover: I am referring to the previous question. Interestingly, the chair of the group who appointed members to that High-Level Group was Sir David King, so somebody from the UK. That would not have happened in a Brexit. We have Julia Slingo as a member of that Scientific Advice Mechanism High-Level Group, who currently is chief scientific adviser of the Met Office.

Do I think it will be effective? I would be very optimistic. I look at the seven members who have been appointed and they are incredibly impressive people. I would also say that I would regard them as being known for their independence. There is no one on that group of seven whom I would see as a shrinking violet. I am sure that they will not sit by and be told what it is they have to do.

Your question was whether they will be completely reactive. I would say no, but they will be reactive to some extent, as indeed are all chief scientific advisers. I am sure that here, in the UK, Sir Mark Walport reacts to Government saying, "Look, we really need more evidence or

some deliberation in a particular area”, and he and his team will deliver that. Similarly, he will be proactive and will think of things that perhaps are not visible to Government, but which should be discussed. I have asked this explicitly of the Directorate-General for Research and Innovation, so this is the area within the Commission which will support that Scientific Advice Mechanism, and that group will absolutely have the ability to identify areas that are not brought to them that they identify independently and understand need attention. I think they will be able to do both. I am not concerned so much around that.

Lord Kakkar: Regarding the way that it is positioned, do you believe it is going to be properly resourced to do that important work through the particular directorate? Secondly, will it have access to the Commission more broadly beyond the Directorate-General for Research and Innovation to be able to make its advice heard more broadly?

Professor Dame Anne Glover: To answer the first question, yes, I believe they will get a substantial amount of resource and will be supported by some wider science advice mechanisms in the European Union, namely the European Academies Science Advisory Council, which basically is a group dealing with science advice, but that group is drawn from all the learned academies and societies from across the European Union, or almost all. For example, the Royal Society of Edinburgh and the Royal Society in London are members of that group. Euro-CASE will also provide support for the Scientific Advice Mechanism. They are the more applied academies; for example, in the UK the Royal Academy of Engineering is a member of Euro-CASE, so it is a more applied use of science. My understanding is that they will have between 20 to 25 members of staff who will support the work of the Scientific Advice Mechanism. Seven individuals will be devoting about 20% of their time to being on this High-Level Group. There will be a budget in the order of €6 million per annum to procure evidence, to have meetings, to call for evidence, and so on. I think they will be reasonably well supported.

You asked will the group have a chair. Again, my understanding is that a chair has been appointed and that will be announced when the Scientific Advice Mechanism High-Level Group meets for the first time on 29 January. I am sure it will take a while for them to embed, to find out what they can do. It will be up to them and their support staff to identify mechanisms or instruments to allow them to penetrate into the Commission, not only to be sitting in the DG for Research and Innovation, but to be able to work with the broadest spectrum of policy development in the Commission. I find that challenging. It is not insignificant.

Lord Kakkar: Do you get a sense that there is a broader enthusiasm amongst other elements of the Commission, beyond the DG for Research and Innovation, for this new High-Level Scientific Advice Mechanism?

Professor Dame Anne Glover: That is an interesting question. I do not know. What was very interesting to me was that when I left the Commission when President Barroso stood down, as I was a personal appointment by President Barroso, there was the option for the incoming president, President Juncker, to have a chief scientific adviser to continue with the experiment, if you like, that President Barroso started. He decided that he did not want one single individual as a chief scientific adviser; he wanted the broader mechanism, which is actually more normal within the European Union member states. From my point of view, what was interesting was the huge support right across the European Union, whether it be from think tanks, individual scientists, scientific institutions, universities, businesses, right

across the member states, who were demanding having some mechanism. They had seen a chief scientific adviser and they liked this. There was something that was identifiable, which was a way to highlight how evidence was being used within the European Commission or—I think this was the position I was in—somebody who was identifiable as a person with whom a dialogue could be initiated about evidence in policy-making. That same function might be delivered by having a chair of the Scientific Advice Mechanism. The chair will be an identifiable person and would be a way to route inquiries into that High-Level Group.

The Chairman: You pointed out that your appointment was something of an experiment and had not been done before. Do you think that one of the lessons learnt by the incoming president was that scientific advice needs to be properly resourced at the European level? I think it would probably be true to say that you were short of resources.

Professor Dame Anne Glover: I was short of resources. I thought about this a lot when I left the Commission and looked back trying to take stock of what had worked very well and what had not worked so well. For the three years that I was at the Commission, I am not sure whether my lack of resources did not in some way help me. Out of adversity sometimes comes very positive and unexpected activity. I had to focus on what I was doing. I could not do everything I wanted to do, but, perhaps by delegating, I had to decide what I could do that was really important, that was visible, that really made an impact in all the member states in terms of why investing in science, engineering and technology is important, but how useful and important it is to have an evidence base as the platform on which policy-making is developed.

I do not know at the end of the day whether it was a problem. I got huge amounts of support right across the European Union from scientists. I mentioned EASAC and Euro-CASE as two very powerful advice-giving bodies across the European Union, and they certainly supported me. Because I reported directly to the President, I had something that I guess money cannot buy, and that was convening power. If I phoned up and said, “I’d like you to come to a meeting”, people came to the meeting. That was very valuable, because I got to speak to people and very quickly got to the sharp end of who is making the decisions and how things are being influenced, and I could be active at that level. We all think it would be great to have a big budget, and yes, a few more staff would have been very helpful—of course, that is resource—partly because my own poor staff worked every hour that was available. They were utterly outstanding, and I certainly could not have done it without them, but perhaps they were working a bit too hard. They were probably very glad when I left; they had a little more breathing time. There are sometimes silver linings.

Q61 The Chairman: Thank you. From the evidence we have received so far it is clear that the science community in the United Kingdom seems more favourably disposed to the EU than the population at large, if the polls are to be believed. Do you think scientists in this country are doing enough to engage the wider public in their views?

Professor Dame Anne Glover: I realise now I should have said this at the very beginning of the evidence session. I am a member of the advisory council for a group called Scientists for EU. This is a group which seeks to make evidence available and stimulate debate around what would happen to our community, the community of scientists, engineers and technologists, if there were a Brexit. The reason that I felt it was so important to be part of that organisation was that I was at the European Commission when Switzerland had a referendum to limit immigration and overnight, Switzerland’s participation in Horizon 2020

was threatened. In fact, it became null and void because an absolute principle of engagement with Horizon 2020 as an associated country is that you allow free movement of scientists in the European research area. If you do not allow that, you cannot be an associated country. When I spoke to my colleagues in Switzerland, the scientists, the national academy of sciences in Switzerland, all had their head in their hands saying, "What did we do? We were completely silent. We didn't talk about the value for us as a community, and for Switzerland as a whole; we didn't speak against that immigration referendum". I think it is important that scientists speak up, because we are a community that tends to be interested only in our science; sometimes, we forget to talk about the value and impact of what we do.

The impact of what I do as a scientist is not for me and my personal gratification. It is for all of you and everybody outside, and citizens globally. Knowledge makes a difference to our lives. For us in the UK, being so research-active, looking at the evidence I have, I regard membership of the EU to be crucial for the health and future prosperity of our science base. I think that our economy in the UK depends upon a good science base. In my view, our sustainable future is on the basis of being smart, not on the basis of making cheap widgets, because somebody will always make those cheaper. Our big resource is being smart. We need as much funding and collaboration as possible to be able to deliver that.

The Chairman: Dame Anne, thank you very much. You have given us some very helpful evidence today. We have particularly benefited from your experience in Europe and, indeed, in your previous career as Chief Scientific Adviser in Scotland. There will be a transcript sent to you for minor corrections. On behalf of the Committee, thank you very much for your help today.