

Brexit: Science and Innovation Summit

A response from the Royal Society of Chemistry to the House of Commons Science & Technology Select Committee.

Summary

Since the announcement that the UK will leave the EU, we have identified three priority areas for the UK government to address regarding science and innovation. These are:

- **Funding** - ensuring access to international research and development funding programmes and infrastructure and, crucially, the associated collaboration opportunities.
- **Mobility** - easy movement of skilled scientists, and of students, to and from the UK.
- **Regulation** - that achieves a balance between nurturing innovation, protecting the environment and human health, and enabling the UK to trade internationally.

Recommendations

Funding

1. Given the imminent timescale for the development and finalisation of FP9 and the next MFF, the UK government should articulate **a clearer view of the level of UK involvement in FP9 at the earliest possible opportunity.**

Mobility

2. The **UK's future immigration system** must take account of the variable nature of mobility that is required for the UK to continue to be a research and innovation leader in the global science community. There is an opportunity for the UK government to acknowledge it recognises this need through forthcoming announcements on immigration.

Regulation

3. **To achieve clarity regarding decision-making**, it is critical to establish as a matter of urgency
 - a. how regulatory decisions will be made in the UK, by whom and on what guiding principles
 - b. what relationships (legal or otherwise) the UK will have with EU bodies that perform scientific activities that underpin regulation (e.g. ECHA, EFSA, EMA and JRC).
4. **In considering scientific evidence for future UK regulation**, it is critical to determine
 - a. how the UK will generate and access the necessary data to support safe and sustainable innovation,
 - b. how data are interpreted by competent and qualified professionals
 - c. how the resulting scientific advice is provided in the context of fit-for-purpose regulatory evaluations and authoritative scientific advisory structures.
5. **In considering regulatory alignment** with international collaborators, it is important that
 - a. mechanisms are maintained, or established before EU exit, to achieve continued collaboration and harmonisation of the scientific methods and data evaluation processes that are required to develop regulation (if achieving regulatory alignment between UK and EU is a goal).
 - b. opportunities are sought to increase international collaboration between the UK science community and international regulatory and scientific experts, which will help to strengthen and harmonise the scientific evidence base used to advise policymakers in the UK and globally.

Main text

Introduction

1. The committee's previous inquiries on this topic and work across the community, has highlighted a number of risks that the science and innovation sector faces as the UK leaves the EU. The exit negotiations will soon move on to consider a transition period and the UK's future relationship with the EU. This period of negotiation will coincide with implementation of the government's Industrial Strategy following on from the publication of the Industrial Strategy White Paper in November 2017. Science and innovation are central to the Industrial Strategy, reflected in 'Ideas' being identified in the White Paper as one of the *'five foundations'*. Given that science and innovation are central to the delivery of Industrial Strategy, risks to science and innovation as a result of EU exit should be considered in this context, with acknowledgement of the interconnectivity between these two areas of policy.
2. In our response we examine near-term issues regarding EU exit across the three priority areas that we identified in our response to the committee's previous inquiry on *'Leaving the EU: Implications and opportunities for science and research'*; funding, mobility and regulation.¹ Addressing all of these areas is important given the interdependence between the three priorities. However, the current level of uncertainty around the issue of regulation is of high importance given the connection between regulation and the implementation of the Industrial Strategy.
3. There are some signs that the government is moving to address the future of regulation. For example the commitment in the Industrial Strategy White Paper to convene a new *'Ministerial Working Group on Future Regulation'* is welcome in considering the cross-cutting nature of regulations as the UK considers how it will develop these in the future. However, there are actions that government could take, with respect to regulations that are currently in place, that could potentially alleviate near-term uncertainties for the science and innovation community.

Funding

4. The end of the phase one UK exit negotiations brought welcome confirmation that the UK will continue to take part in the current framework funding programme, Horizon 2020, until it finishes.² However, the absence of a preferred option for the UK government regarding UK participation in the next framework funding programme, Framework Programme 9 (FP9), means that UK researchers face uncertainty over their ability to participate in EU-funded collaborative research in the future.
5. The European Commission is currently developing its own proposal for what FP9 will look like. A proposal for this is expected by summer of this year in order to meet the timelines for agreement by member nations and appropriate legislative procedures. The development of FP9 takes place alongside planning for the next Multiannual Financial Framework (MFF) for the overall EU budget.
6. In 2016, the European Commission assembled a High Level Group to develop recommendations on the future of research and innovation in the EU, helping to inform funding framework programmes that will run beyond Horizon 2020. The subsequent report of this group, chaired by Pascal Lamy, delivered a series of recommendations and actions, *'aimed at maximising the impact of future EU research and innovation programmes'*.³ One action is to *'open up the R&I programme to association by the best and participation by all, based on reciprocal co-funding or access to co-funding in the partner country'*.
7. With reference to the UK's exit from the EU, the report suggests that the best scenario for both parties is continued UK participation in future EU funding framework programmes. It states *'Whatever Brexit modalities are agreed between the UK and the EU by 2019, full and continued engagement with the UK within the post-2020 EU R&I programme remains an obvious win-win for the UK and the EU'*.

8. In September 2017, the UK government published a discussion paper that outlined its views on the future partnership between the UK and the EU in science and innovation.⁴ The paper acknowledges the benefits of collaboration in science and innovation between the UK and the EU, as well as the extent of existing links between the two parties. It also outlines the UK government's desire to *'establish an ambitious agreement on science and innovation that ensures the valuable research links between us continue to grow.'*
9. With respect to participation in future EU funding framework programmes, the paper does not set out a preferred option. Instead, it outlines examples that demonstrate the partnership between EU countries and non-EU countries, including the different current models for participation in Horizon 2020, noting that the examples provided in the paper are *'not exhaustive'*.

Recommendation 1: Given the imminent timescale for the development and finalisation of FP9 and the next MFF, the UK government should articulate a clearer view of the level of UK involvement in FP9, at the earliest possible opportunity.

Mobility

10. People are vital to science – the ability of people to be able to move with ease to and from the UK is essential for UK science, to continue to be both an active member of the global science community and for UK science itself to advance.
11. Within research, mobility for different lengths of time during a researcher's career is important to acquire skills, share knowledge, build networks and develop collaborations. This mobility can range from periods of a few weeks and months, through to a post that is fixed for a number of years (e.g. postdoctoral researcher) or even longer-term. The flexibility to be mobile is essential for science and innovation in today's globally connected science community – a recent survey carried out by RAND Europe of UK researchers found that 79% of those that responded believed that there is an expectation for good researchers to be internationally mobile.⁵
12. A number of announcements are anticipated in 2018 that will either outline, or inform the government's approach to a future UK immigration system. These include a White Paper on immigration and the publication by the Migration Advisory Committee (MAC) of their commissioned research into EEA workers in the UK labour market and international students.
13. Messaging from across the research and innovation community has highlighted the need to enable easy movement of researchers, innovators, technicians, and their dependents to and from the UK using systems that are flexible and take account of the range of skills needed for science.⁶

Recommendation 2: The UK's future immigration system must take account of the variable nature of mobility that is required for the UK to continue to be a research and innovation leader in the global science community. There is an opportunity for the UK government to acknowledge it recognises this need through forthcoming announcements on immigration.

Regulation

14. We continue to advocate, as highlighted in our previous submissions on regulation⁶, that the UK's future regulatory system must strike a balance between nurturing innovation, protecting the environment and human health, and enabling the UK to trade internationally.
15. To achieve this balance, it is vital that regulatory consistency is achieved across science and innovation that delivers into the government's Industrial Strategy, the Clean Growth Strategy and the 25-Year Plan for the Environment (which is also set to include a Chemicals Strategy and a Waste Strategy to be developed in 2018). Simple, clear and effective regulation is important in all of these strategies where science and innovation is core to successful delivery of the goals within these interconnected strategies.
16. All of the many different regulations covering a broad range of areas relevant to science and innovation require significant and immediate attention, on a case by case basis, considering the opportunities and trade-offs for each area.
17. The current high level of uncertainty regarding the future of regulation for science and innovation, could potentially affect research and investment decisions and the pursuit of innovative product development in the immediate future.
18. The current lack of a connected regulatory framework within the government's industry, health and environment strategies, could significantly impact the implementation of the strategies. For example, the chemicals sector is an industry supporting many other industries, such as providing materials that are essential to develop new therapies in the life sciences, automotive innovations and clean energy, etc. Chemicals regulation has been tightly integrated in the direct implementation of EU chemicals law in the UK, whilst the UK has been a member of the EU. In the immediate months ahead, to enable a transition period of continued regulatory alignment, workable legal mechanisms for implementing the regulation of chemicals specifically in the UK, need to be devised prior to EU exit. EU laws will cease to apply from the moment the UK leaves the EU and without a mechanism to continue working with EU bodies, such as ECHA, across all regulations relating to chemicals, legal gaps will arise. For the longer term, new regulatory frameworks for chemicals management need to be considered that work consistently across all government strategies. This represents a significant challenge for government and the chemicals sector.
19. Three areas are of critical importance for immediate action regarding regulation going forward:
 - i) **Decision-making:** clear decision-making frameworks and principles need to be established by policymakers

To achieve balance and provide certainty to industry and investors in science and innovation, clear, efficient and simple regulatory frameworks for assessing risks and benefits need developing as a matter of urgency.

Decision-making within such frameworks should be robust, proportionate, efficient and coordinated, and most importantly informed by scientific evidence.

Recommendation 3: To achieve clarity regarding regulatory decision-making, it is critical to establish as a matter of urgency

- a) **how regulatory decisions will be made in the UK, by whom and on what guiding principles**
- b) **what relationships (legal or otherwise) the UK will have with EU scientific bodies that perform scientific activities that underpin regulation.**

For example, the European Chemicals Agency (ECHA) are currently key to decision-making in the chemicals sector within EU law and hold a wealth of chemical sciences data, particularly on substances of very high concern (SVHC), which are relevant to UK industry. The UK also has close collaborative relationships and research projects relevant to informing regulation, with the European Commission's Joint Research Centres.

- ii) Scientific evidence: chemical sciences data and expertise underpin regulation. Many different types of chemical science data are incorporated into chemical safety assessment frameworks and interpreted by scientific experts to enable chemical management decisions to be made by policymakers.

Recommendation 4: In considering scientific evidence for future UK regulation, it is critical to determine

- a) **how the UK will generate and access the necessary data to support safe and sustainable innovation,**
- b) **how data are interpreted by competent and qualified professionals**
- c) **how the resulting scientific advice is provided in the context of fit-for-purpose regulatory evaluations and authoritative scientific advisory structures.**

For example, the development and implementation of effective regulation for science and innovation requires specialist skills and resources in key scientific and technical disciplines. If the UK ceases to have access to scientific expertise in EU agencies, we do not currently know if the UK has sufficient capacity in the specialist skills needed, or whether further training or knowledge exchange programmes need to be developed to increase UK capacity.

- iii) International cooperation and collaboration are vital to foster internationally harmonised regulations and regulatory alignment

Regulatory harmonisation and alignment facilitates international trading and brings common benefits to global society. Cooperation in research, innovation and trade is facilitated between partners who accept innovation that is regulated on common, mutually agreed principles and approaches.

Recommendation 5: In considering regulatory alignment with international collaborators, it is important that

- a) **mechanisms are maintained, or established before EU exit, to achieve continued collaboration and harmonisation of the scientific methods and data evaluation processes that are required to develop regulation (if achieving regulatory alignment between UK and EU is a goal).**
- b) **opportunities are sought to increase international collaboration between the UK science community and international regulatory and scientific experts, which will help to strengthen and harmonise the scientific evidence base used to advise policymakers in the UK and globally.**

About us

With over 55,000 members and a knowledge business that spans the globe, the Royal Society of Chemistry is the UK's professional body for chemical scientists, supporting and representing our members and bringing together chemical scientists from all over the world.

Our members include those working in large multinational companies and small to medium enterprises, researchers and students in universities, teachers and regulators.

¹ - [Royal Society of Chemistry response to House of Commons Science & Technology Select Committee inquiry into 'Leaving the EU: implications and opportunities for science and research'](#), July 2016

² - [Joint report from the negotiators of the European Union and the United Kingdom Government on progress during phase 1 of negotiations under Article 50 TEU on the United Kingdom's orderly withdrawal from the European Union](#), December 2017

³ - [LAB-FAB-APP – Investing in the European Future We Want](#), Report of the independent High Level Group on maximising the impact of EU Research & Innovation Programmes, July 2017

⁴ [Collaboration on Science an Innovation, A Future Partnership Paper](#), HM Government, September 2017

⁵ - [International mobility of researchers: A survey of researchers in the UK](#), Susan Guthrie, Catherine Lichten, Emma Harte, Sarah Parks and Steven Wooding, RAND Europe, May 2017

⁶ - [Science Priorities for Brexit](#), Parliamentary & Scientific Committee, March 2017

⁶ - Royal Society of Chemistry response to House of Commons Environmental Audit Select Committee Inquiry into 'Future of Chemicals Regulation after the EU referendum'. [Phase 1 response](#) – February 2017; [Phase 2 response](#) - October 2017.