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INQUIRY INTO THE IMPACT OF EU REGULATION AND POLICY ON THE UK LIFE SCIENCES: a response to the House of Commons Science and Technology Committee

Summary

- *While the RSE is not taking a position on whether the UK should remain a member of the EU, it is undertaking collaborative activity, including holding a series of events examining the implications for the UK (and the impact on Scotland) remaining a member of the EU, or leaving. This submission should be read in this context.*
- *The strength of the UK's life sciences sector means that the UK has been very successful in attracting research talent from both within and outwith the EU. Research demonstrates that nearly 50% of the UK's scientific publications have non-UK authors and the impact of these papers is significantly higher than the average impact of UK papers. It is therefore very unfortunate that current UK immigration rules are putting at risk the reputation of the UK and Scotland's internationally-leading universities and research institutions.*
- *Harmonisation of regulations and standards across the EU helps to provide a level playing field and regulatory consistency. This is important for life sciences researchers, businesses and investors. The UK has played an influential role in this area, for example, working to ensure that animal welfare standards applied throughout the EU meet the UK's world-leading standards.*
- *The UK has been very successful in attracting funding from the EU research programmes. The UK is a net beneficiary of Horizon 2020, second only to Germany in relation to the funding secured. UK researchers have had responsibility for coordinating many of the EU collaborative research projects which demonstrates and, in turn, enhances the strength of the UK's life sciences research.*
- *While the Framework Programmes were rightly criticised for having overly complex administrative and financial rules, H2020 has sought to substantially streamline the funding landscape, including combining research and innovation within a single source. In what has been both a necessary and significant development, it also provides a mechanism for increasing SME participation. This is an important development in the Scottish context, given the need to address the long-standing issue of the low level of business R&D.*
- *While the European Commission seeks to apply an evidence-based approach drawing upon scientific and technical advice, the European Parliament and Council of Ministers will take into account political and circumstantial factors, particularly those which prevail within their own member states. This has on occasion resulted in EU legislation which does not reflect the UK's appetite for, and approach to, research in the life sciences. This reinforces the importance of the UK Government and the UK research community in influencing decision-making by promoting the value of evidence-based policy. The UK's life sciences community, including national academies and major charitable trusts, have played a prominent role in seeking to address those EU regulatory developments which have put at risk the strength of the UK life sciences.*
- *There is a perception that the UK Government has been overzealous with regard to the extent to which it applies strict interpretation to the transposition of EU legislation into UK law. We would encourage the UK to adopt a more flexible, discretionary stance, which adheres to the broad intention of EU legislation, but in a way that aligns with the UK's approach to life sciences research.*
- *There has been increasing concern that the regulatory systems for life sciences in EU countries are inhibiting innovation. This is evident in the EU system of approval of GM. The European Academies Science Advisory Committee has said that there is no rational basis for the current stringent regulatory process. The costs and negative perceptions of the EU approval process for GM have resulted in even large companies withdrawing applications for cultivation in the EU. In relation to the recent EU position to permit member states to opt-out of the EU approval system, bans based on other than scientific evidence could act as a further disincentive to GM research in the EU.*
- *If the UK were to cease being a member of the EU, it would still be obliged to comply with EU legislation if it is to continue to engage with the EU life sciences research landscape. The RSE cannot foresee that the UK would wish to sever its links with what is a large and influential marketplace for the life sciences sector. If the UK were to leave the EU there might be scope for it to agree some form of associated or partial membership status so that the UK could continue to have access to EU research funding. However, this is very uncertain and unpredictable territory and would be subject to intense negotiation – complicated by the fact that the UK is currently a net beneficiary of Horizon 2020 funds. Precedent indicates that even if access arrangements were possible, the UK would lose the ability to influence the EU's scientific and research funding agenda. This is in stark contrast to the current position where the UK is a prominent and influential player, with UK-based scientists participating on EU science-related expert advisory committees.*

Introduction

1 The Royal Society of Edinburgh (RSE) welcomes the opportunity to respond to the House of Commons Science and Technology Committee's Inquiry into the Impact of EU Regulation and Policy on the UK Life Sciences. This is, of course, a very important and timely inquiry given the current debate on the UK's relationship with the European Union. As Scotland's National Academy, the RSE is committed to encouraging and supporting the wellbeing of the research undertaken in and from Scotland. While seeking to help inform the current debate[1], the RSE is not taking a position on whether the UK should remain a member of the EU. We recognise that the House of Lords Science and Technology Committee is conducting a similar investigation into the relationship between EU membership and the effectiveness of UK science, research and innovation. Given that key issues for UK science stemming from the UK's membership of the EU will also be relevant to the life sciences sector, we would encourage close cooperation between the respective parliamentary inquiries. While seeking to focus on the life sciences, our response also comments on the impact of the UK's membership of the EU on scientific research more generally. Our response has been prepared by an RSE working group with expertise and experience of the life sciences in the UK, including its European and international dimensions. We have framed our response with reference to the questions set out in the call for evidence. We would be pleased to discuss further any of the comments made in our response with the Committee.

2 The UK's life sciences industry is a sector of considerable strength, with approximately 4,500 companies employing 167,500 people and generating a turnover of over £50 billion. Scotland makes a significant contribution to the impact of life sciences research. It hosts the UK's second-largest Life Sciences cluster and one of the most sizeable in Europe, with an annual turnover worth in excess of £3.2 billion. The Scottish Government's refreshed life sciences strategy[2], published in 2011, sets out the ambitious aim of doubling the economic contribution of life sciences to Scotland by 2020. The sector in Scotland is diverse, with particular strengths in medical technologies, pharmaceutical services, regenerative medicine and animal health. 'Connected health', agricultural technologies (agri-tech) and industrial biotechnology are emerging key areas[3]. In this context, the case for maintaining investment in the UK and Scottish life sciences research base and infrastructure is compelling, if we are to ensure that we continue to play a leading role on the global stage.

In what ways do EU regulations affect the UK life sciences? What are their benefits and the drawbacks?

Benefits of EU frameworks and regulation on UK life sciences

Freedom of movement

3 Free movement of people among EU member states is a fundamental principle of the EU. Mobility of researchers across the EU has facilitated very productive research collaborations. The strength of the UK's life sciences sector means that the UK has been very successful in attracting research talent from both within and outwith the EU. EU researchers have enhanced the life sciences research effort in the UK. At Cancer Research UK's Beatson Institute in Glasgow, approximately half of the researchers are from non-UK EU member states[4]. In addition, research highlighted by the Association of Medical Research Charities (AMRC) demonstrates that nearly 50% of the UK's scientific publications have non-UK authors and the impact of these papers is significantly higher than the average impact of UK papers[5].

1 The RSE is holding a series of events aimed at enlightening the European Debate; by examining the implications for the UK (and the impact on Scotland) remaining a member of the EU, or leaving. More information about this activity is available from: https://www.royalsoced.org.uk/1191_EnlighteningtheEuropeanDebate.html

2 Scottish Life Sciences Strategy 2011: Creating Wealth, Promoting Health http://www.roslinbiocentre.com/assets/downloads/lss-strategy-2011.pdf

3 Scottish Key Facts; Scottish Enterprise; October 2015

4 AMRC submission to the House of Lords Science and Technology Committee Inquiry into the relationship between EU membership and the effectiveness of UK science; November 2015
http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/science-and-technology-committee-l/relationship-between-eu-membership-and-the-effectiveness-of-uk-science/written/24815.pdf
Ibid.4 Based on a report prepared by Elsevier for the UK's Department of Business, Innovation and Skills; International Comparative Performance of the UK Research Base; 2013

5 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263729/bis-13-1297-international-comparative-performance-of-the-UK-research-base-2013.pdf

4 Given that the UK research base derives clear benefit from the contribution of EU and international researchers, it is very unfortunate that the current immigration rules in the UK are acting as a barrier to the recruitment of international students and researchers, thereby harming the reputation of the UK and Scotland's universities and internationally-leading research institutions.

EU funding programmes, collaborative research and access to major research facilities

5 With a population of half a billion citizens, the EU is a very substantial marketplace for the UK. EU membership enables the UK to fully engage in a thriving environment for undertaking and commercialising scientific research, where the EU produces around a third of the world's research outputs.

6 The UK has been very successful in securing competitive funding from the EU Framework Programmes for Research and Innovation. These have helped provide for a long-term, transparent and consistent research funding landscape. It is also notable that the EU research budget is focussed on areas that rely on life sciences' research including health, the environment, food and energy. Horizon 2020 (H2020), operating from 2014 to 2020, represents the largest ever European funding programme for research and innovation, with a budget of €79 billion euros. The UK is a net beneficiary of H2020, with the AMRC reporting that the UK has had the highest number of eligible applications for H2020 and is second only to Germany in relation to funding secured. In relation to the preceding Framework Programme for research, FP7, which ran from 2007 until 2013, Scotland secured €636 million of funding, which accounted for 10.4% of the UK total, and 1.6% of the EU total over the period[6].

7 While the Framework Programmes were rightly criticised for having overly complex administrative and financial rules, the EU Commission has sought to implement measures to simplify the rules, the effectiveness of which have been evaluated[7]. H2020 has sought to substantially streamline the funding landscape. Notably, research and innovation have been combined in a single source of funding, whereas previously they were treated separately. This is both a necessary and significant development given that H2020 provides a dedicated provision through the 'SME instrument' to support an increase in SME participation in research and innovation. This is a particularly welcome development in Scotland where SMEs account for 99.4% of private sector enterprises[8]. H2020 therefore provides an opportunity for increasing collaboration between businesses and the research community and for addressing the long-standing issue of the low level of business R&D in Scotland.

8 Building on our earlier comments, we would emphasise that UK researchers have coordinated many of the EU collaborative research projects, particularly on health research. 23% of these projects under FP7 were coordinated by UK institutions (primarily universities), and in relation to H2020, to-date 34% of health-related projects have been coordinated by UK researchers[9]. Coordination of major European research projects helps to showcase and enhance the UK's life sciences research strengths. It also worth noting that collaborative activity often extends beyond the completion of the specific project upon which it was founded; again this serves to enhance the research effort by enabling UK scientists to maintain valuable links with research networks.

9 As well as harnessing public funds to support European research, in partnership with the European pharmaceutical industry, the EU has established the Innovative Medicines Initiative (IMI)[10], the world's largest public-private partnership in the life sciences. Operating at a scale that would be beyond the capacity of an individual member state, this aims to improve health and increase pharmaceutical innovation by speeding up the development of, and patient access to, innovative medicines. It works by facilitating collaboration among health care researchers, pharmaceutical companies, including SMEs, patient organisations and medicines regulators. The IMI2 programme covers the period 2014-2024 and comprises a budget of €3.3 billion. Half of which comes from H2020 with the other half made up of private funds. Scotland has benefited from the investment of IMI funds in support of the £100 million European Lead Factory project which aims to generate new lead structures for drug discovery. As part of this collaborative project, the European Screening Centre is located at BioCity Scotland.

6 Scotland's Future – Higher Education Research in an Independent Scotland; Scottish Government; April 2014 http://www.gov.scot/Resource/0044/00449224.pdf

7 Assessing the Effectiveness of Simplification Measures under FP7; Deloitte Consulting for the European Commission DG Research; June 2011 http://ec.europa.eu/research/evaluations/pdf/archive/fp7-evidence-base/evaluation_studies_and_reports/simplification_study_report.pdf

8 Business in Scotland - Key facts; March 2015; Scottish Government http://www.gov.scot/Topics/Statistics/Browse/Business/Corporate/KeyFacts

9 Scientists for EU response to the House of Lords Select Committee on Science and Technology Inquiry into the relationship between EU membership and the effectiveness of science, research and innovation in the UK; November 2015 http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/science-and-technology-committee-lords/relationship-between-eu-membership-and-the-effectiveness-of-uk-science/written/24828.pdf

10 http://www.imi.europa.eu/

10 EU membership also enables UK researchers' shared access to major research infrastructure and facilities based throughout the EU. Their scale and capital-intensive requirements are such that they could not conceivably be developed and maintained by an individual member state. A number of these pan-European facilities which support life sciences research are head-quartered in the UK, including the: European Life-science Infrastructure for Biological Information (ELIXIR); Integrated Structural Biology Infrastructure (INSTRUCT); and Infrastructure for Systems Biology-Europe (ISBE).

Harmonisation

11 Harmonisation of regulations and standards across the EU helps to provide a level playing field and regulatory consistency which is important for life science researchers, businesses and investors. The AMRC is clear that given the world-leading status of the UK's life sciences sector, harmonisation has helped ensure that the UK is viewed as an attractive place to invest[11]. The UK has played an influential role in this area. For example, it has worked to ensure that animal welfare standards which apply throughout the EU will meet the world-leading standards set in the UK. In doing so, the EU updated and replaced the directive on the protection of animals used for scientific purposes. Not only does this provide for a high standard of animal welfare, it ensures the UK is not put at a competitive disadvantage compared to other member states[12]. In addition, the UK used the introduction of the EU Clinical Trials Directive (2001) (which we return to below), to make across-the-board reforms in Research Ethics Committees and other areas of health regulation, culminating in the establishment of the Health Research Authority in 2011, which is working to streamline the regulation of research in the UK and in line with the EU.

12 In addition, the European Medicines Agency (EMA), based in London, provides for an EU-wide single application, single evaluation and a single authorisation for eligible medicines. Once an authorisation has been granted, the authorisation-holder can legally market medicine in all EEA countries. The EMA regulatory network is also taking a lead role in collaborating with non-EU international pharmaceutical regulatory networks, including the International Conferences of Harmonisation (ICH) and Pharmaceutical Inspection Convention and Pharmaceutical Inspection Co-operation Scheme (PIC/S) with a view to contributing to convergence of global standards.

Drawbacks of EU frameworks and regulation on UK life sciences

Bureaucracy and overly stringent regulation

13 The scale of complexity and bureaucracy associated with the EU legislative and regulatory landscape can be very burdensome, even for large organisations which have increased capacity for absorbing the required resources. However, for SMEs which comprise the bulk of the UK's business base, the regulatory costs and bureaucracy can be especially challenging. There has been increasing concern that the regulatory systems in operation for life sciences in EU countries are inhibiting innovation. In the case of the EU system of regulation and approval of GM, the European Academies Science Advisory Council (EASAC), which comprises the national science academies of EU member states, has said that there is no rational basis for the current stringent regulatory process[13]. The Council for Science and Technology has reported that the current EU regulations add €10-20m to the cost of developing a new GM variety – and that is prohibitive for small and medium sized enterprises and the public sector[14]. In turn, the associated costs and negative perceptions of the EU approval process has resulted in even large companies developing their new crops elsewhere in the world and withdrawing specific applications for cultivation in the EU marketplace. EASAC has warned that the EU is *"falling behind new international competitors in agricultural innovation and this has implications for EU goals for science and innovation, and for the environment as well as for agriculture"*[15]. Given the strength of the life sciences sector in the UK and the contribution this makes to the EU research and commercialisation effort, the UK Government is well positioned to inform and influence EU priorities and regulatory developments in these areas. We comment further on this in the sections that follow.

11 AMRC Letter response to the Government's Taskforce on EU Regulation; August 2013 http://www.amrc.org.uk/publications/amrc-submission-to-the-governments-taskforce-on-eu-regulation

12 *Ibid.* 11

13 GM Science Update; A report to the Council for Science and Technology; March 2014 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/292174/cst-14-634a-gm-science-update.pdf

14 *Ibid.* 13

15 Planting the future: opportunities and challenges for using crop genetic improvement technologies for sustainable agriculture; EASAC Policy Report 21; June 2013 http://www.easac.eu/fileadmin/Reports/Planting_the_Future/EASAC_Planting_the_Future_FULL_REPORT.pdf

Potential for EU regulations to adversely impact upon life sciences research

14 There have been several EU regulatory developments which have had adverse consequences for the UK life sciences research sector. This has included the implementation of the Clinical Trials Directive which led to increased administrative burden, cost and time delays in conducting new clinical trials across EU members. The European Commission's figures show that this resulted in the number of applications for new clinical trials in the EU declining by 25% between 2007 and 2011. It is, however, important to recognise the role that the UK life sciences research community has played in seeking to address these damaging consequences. Their input contributed to the development of a new Regulation (which is expected to take effect in 2017) which will provide an improved streamlined process and promote a more proportionate approach to the application of clinical trials.

15 Another regulatory area which could have resulted in far-reaching adverse implications for UK life sciences research relates to the EU's reform of data protection rules to establish a new Data Protection Regulation. The reforms cover the use of personal data, including how patient data is used for research. The science community expressed serious concern that amendments from the EU Parliament (more than five thousand amendments had been proposed – the highest number to-date for EU legislation), would have resulted in onerous restrictions being imposed on the use of health data in research. This has been the subject of four years of protracted debate and negotiation, and has created much uncertainty for the UK's life sciences sector. The Wellcome Trust has been particularly active in working with partners to ensure that the Regulation creates a clear legal framework that facilitates research while protecting the interests of data subjects [16]. With informal agreement on the Regulation reached in late 2015, it looks as though provision has been made to ensure that personal data can continue to be used safely and securely in research. However, formal agreement is still required and is expected later this year.

16 The eventual, pragmatic response is welcomed by the UK's life sciences sector, particularly given the UK's commitment to being a global leader in the development of stratified medicine. This is especially important to Scotland where our healthcare system offers a unique patient identification and tracking process, including accelerated researcher access to clinical trials within Scottish health boards. Scotland has pioneered a country-wide research platform for the collation, management, dissemination and analysis of Electronic Patient Records (EPRs). SHARE[17] is a new initiative to establish a register of people living in Scotland to provide secure access to their health records to enhance the efficiency and effectiveness of recruitment into health research projects. These developments rely upon a regulatory regime that facilitates safe and secure access to personal health records for researchers.

17 The EU legislative position on the cultivation of GMOs has given formal responsibility to member states to opt-out of the Europe-wide approval system for GM crops. The European Commission proposed this as a way of reaching a compromise on an issue which has been long debated within the EU. However, this approach is likely to cause further uncertainty with member states adopting different positions based on a range of factors (which are not likely to be based on scientific evidence, as the EU 'opt-out' does not permit bans based on risks to health or the environment from GMOs that have been approved by the European Food Safety Authority (EFSA)). Bans based on other than scientific evidence could act as a further disincentive to GM-related research in the EU as those biotechnology companies developing and exporting novel products are likely to view global competitors as having more favourable regulatory frameworks.

Political, cultural and attitudinal challenges

18 As demonstrated by the regulatory examples highlighted above, the cultural and political diversity among the EU member states can challenge the notion of evidence-based policy making. Much of the European Commission's work is focussed on ensuring standardisation and harmonisation across member states. This being so, its policy and legislative proposals are often of a technical kind. When the Commission brings forward a policy proposal, an impact assessment is required to consider the potential economic, social and environmental impacts of alternative policy options. The impact assessment also includes provision for stakeholder consultation. This process helps to ensure that there is an evidence-base underpinning the Commission's proposals. While the Commission seeks to apply an evidence-based approach, it cannot be assumed that those within the European Parliament and Council of Ministers will make their decisions on the basis of scientific and/or technical evidence alone. Undoubtedly, they will take into account other cultural, social, ethical, political and circumstantial factors, particularly those which reflect the prevailing mood within their own member states.

16 http://www.wellcome.ac.uk/About-us/Policy/Spotlight-issues/Personal-information/Data-protection-legislation/

17 http://www.goshare.org.uk/

The EU decision-making process can therefore be confusing, cumbersome, difficult to predict and result in EU legislation (as demonstrated in the previous section) which does not align with the UK's appetite for, and approach to, research in the life sciences. This reinforces the importance of the UK Government and the UK research community in influencing the policy development and decision-making process by promoting the value of evidence-based policy.

19 In this context it is useful to consider the Joint Research Centre (JRC), which is the European Commission's in-house service providing independent scientific advice, evidence and support to EU policy, from design to implementation. It is a substantial resource with a budget of about a third of a billion euros per annum and over 3000 staff, the majority of whom are active scientists. The UK has senior representation on the JRC, including on the Board of Governors. The Commission has recently adopted the JRC's forward-looking work programme for 2016-17, running under H2020. The JRC will support a wide range of policy initiatives addressing economic growth, energy, climate and migration. The JRC is also, importantly, focussing its efforts on the 'Better Regulation' initiative, through the design of efficient evidence-based policies and legislation which seek to avoid over-regulation. Given the JRC's remit for evidence-based policy-making, we encourage both the UK and Scottish Government's to ensure that they keep up-to-date with JRC developments, particularly its forward-looking work programme.

20 At this point it is also worth referencing the 'Eurobarometer' surveys which are conducted on behalf of the European Commission. These cover a wide range of topics, including those relating to science and technological research. The surveys collect quantitative and qualitative data from large numbers of respondents across all EU member states. They are therefore a very useful resource for EU institutions and national governments, as well as scientists, in helping to gauge large-scale public awareness and understanding of and, views on, scientific and technological developments.

How transparent, consultative and evidence-based are EU policy-making processes?

21 EU policy-making processes are generally consultative and inclusive but, as we state in the previous section, the decision-making process can be onerous, unwieldy, time-consuming and difficult to navigate. There are also differences between life science sectors, with health-related areas enjoying fairly well established consultative relationships, while in areas of biotechnology, including GM, the experience is much more challenging. Given its influence, we would emphasise that the UK should ensure that it organises itself so that it is aware of EU policy proposals and consultations at the earliest opportunity. It would then be well placed to proactively mobilise its response, including inviting the input of the UK's scientific and industrial expertise. As we have indicated elsewhere, those involved in the UK life sciences, including national academies and major charitable trusts, have played a prominent role, particularly in the case of seeking to address regulatory developments which have put at risk the strength of the UK life sciences.

To what extent is the UK able to shape regulatory processes at the EU level that affect the life sciences?

22 Because the UK is a member of the EU, its science & research community is well positioned to engage in debate around the allocation of the EU budget to science. The UK is a prominent and influential player, with UK-based scientists participating on EU science-related expert advisory committees. Indeed, the UK's significant influence in the EU has helped ensure that European Research Council funding continues to be allocated on the basis of scientific excellence.

23 UK-based scientists have also secured high-level advisory roles in shaping EU scientific policy. Professor Dame Anne Glover was the first Chief Scientific Adviser to the President of the European Commission between 2011 and 2014. Professor Dame Julia Slingo, Chief Scientist at the UK Met Office, is one of seven experts on the High Level Group of Advisers that provides independent scientific advice to the Commission. This mechanism is a critical component in the development of EU policies and legislation so high-level UK representation will help ensure the UK's influence on scientific policy.

Is the UK able to depart from the application, standards or timing of EU regulation?

24 The AMRC has pointed out[18] that even if the UK were to cease being a member of the EU, it would still be obliged to comply with EU regulations if it is to continue to engage with the EU life sciences research landscape. The RSE cannot foresee that the UK would wish to sever its links with what is a large and influential marketplace for the life sciences sector. As already highlighted, it is also the case that provided it is based on scientific evidence as opposed to political interventions, a common regulatory approach should be of benefit to the UK's life sciences sector.

25 There is, however, a perception that in comparison with other member states, the UK Government has been overzealous with regard to the extent to which it applies strict interpretation to the transposition of EU legislation into UK law. The UK's approach has been described as "gold plating"[19]. We would encourage the UK to adopt a more flexible, discretionary stance which adheres to the broad intention of EU legislation, but does so in a way that aligns with the UK's approach to conducting and commercialising life sciences research.

26 If the UK were to leave the EU, there might be scope for it to agree some form of associate or partial membership status so that the UK could continue to have access to EU research funding streams. However, this is very uncertain and unpredictable territory, and would inevitably be the subject of intense negotiation. It should also be noted that since the UK is currently a net beneficiary of H2020 funding, this would undoubtedly be a consideration for any negotiation, and would have implications for the financial contribution the UK would be expected to make. Precedent indicates (e.g. non-EU countries including Norway and Switzerland) that even where access arrangements are possible, the UK would lose the ability to influence the EU's science and research policies, including the EU's research funding agenda. This contrasts with the current position where the UK is a prominent and influential player, with UK-based scientists participating on EU science-related expert advisory committees.

27 Whether remaining an EU member or not, departure from the application of EU regulations would have implications for the UK's eligibility to access EU research funds and the EU marketplace. It is instructive to consider the circumstances pertaining to Switzerland's ability to participate in H2020. As a result of the vote in Switzerland in 2014 to place restrictions on freedom of movement from other EU member states, the EU suspended Switzerland's full association with the H2020 programme. Subsequently, Switzerland was able to negotiate partial association for limited access to H2020. However, from 2017, Switzerland will either need to be fully associated to H2020 (which would be reliant on Switzerland ensuring freedom of movement for EU citizens) or participate in H2020 as only a 'third country' – meaning that while Switzerland could still join European collaborative projects, it would not be entitled to any direct funding from the EU.

Additional Information

This Advice Paper has been signed off by the RSE General Secretary.

In preparing this Advice Paper we would like to draw attention to the following RSE responses which are relevant to this subject:

The Royal Society of Edinburgh's advice paper on the Opportunities for GM and Biotechnology for Scotland (September 2015)

Any enquiries about this Advice Paper should addressed to Mr William Hardie (email: evidenceadvice@royalsoced.org.uk).

Responses are published on the RSE website (www.royalsoced.org.uk).

18 *Ibid.* 4

19 Submission to the call for evidence from the Innogen Institute, University of Edinburgh; Professor Joyce Tait; March 2016 http://www.innogen.ac.uk/downloads/ConsultationResponse_HOC_EURegulationOfLifeSciences.pdf

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