

Royal Society of Chemistry response to the Senedd Cymru Finance Committee's inquiry on Post-EU funding arrangements

1. About the RSC

- 1.1 With about 50,000 members in 120 countries and a knowledge business that spans the globe, the Royal Society of Chemistry (RSC) 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.
- 1.2 We welcome the opportunity to respond to this consultation. If you have any questions or would like us to elaborate further, **please contact** policy@rsc.org.

2. Summary

- 2.1 This consultation response is focused on funding schemes related to research and innovation. European Structural and Investment Funds (ESIF) have provided vital support to the Welsh research and innovation landscape including chemistry research.
- 2.2 Our main recommendations are set out as follows:
- The UK Shared Prosperity Fund (UKSPF) must support research and innovation to secure sustainable regional growth.
 - Any shortfall in research and innovation regional development funding in Wales or other UK nations and regions compared to funding levels before EU exit which is not met by UKSPF should be replaced from other funds to ensure that the UK research and innovation landscape does not suffer.
 - The Welsh Government must work with the UK Government in continuing to push for association to Horizon Europe.
- 2.3 The sections that follow contain more detail, evidence and case studies which support our recommendations.

3. UKSPF must support research and innovation

- 3.1 **The UK Shared Prosperity Fund (UKSPF) must support research and innovation to secure sustainable regional growth.**
- 3.2 Evidence shows that using regional development funding for research and innovation supports sustainable prosperity in regional economies. It enables local businesses to harness the power of research and innovation, knowledge, and infrastructure¹. Regional development funding will play an important role in achieving the UK Government's levelling up agenda.
- 3.3 European Structural and Investment Funds (ESIF), have become a unique part of the UK's regional funding landscape. ESIF have added diversity to the landscape by providing support for regions based on GDP per capita, with the least developed regions receiving the most funding. In the 2014-2020 programme, Wales is set to

¹ Royal Society of Chemistry, Chemistry's Contribution: Workforce trends and economic impact, September 2020. See <https://www.rsc.org/contentassets/8122a7694dd14a4f9779cec4e9dbb0a6/workforce-full-report>

receive over £2 billion from ESIF in total by the time all currently allocated funding has been received in 2023². The European Regional Development Fund (ERDF), which is part of ESIF, includes the priority areas ‘research and innovation’ and ‘enhancing the competitiveness of SMEs’. ERDF has benefitted the Welsh research and innovation landscape substantially, including chemical sciences projects, researchers and SMEs.

- 3.4 The case study³ below shows an example of how ERDF has supported the chemical sciences and wider science community in Wales.

Case study 1: Building science capacity in Wales

The **Sêr Cymru programme** is aimed at strengthening the capacity of Wales’s leading research groups by attracting talent and providing training. It has been co-funded by Welsh Government, higher education institutions, Higher Education Funding Council for Wales, and a combination of EU funding from ERDF and Horizon 2020. The programme has generated more than £180 million in research grant income.

The Sêr Cymru programme supports research in a number of scientific areas including the chemical sciences. One example is a project that is looking at converting carbon dioxide into new compounds in a sustainable way, for which chemistry researchers at the University of South Wales received £490,000 from the Sêr Cymru programme. Carbon dioxide is a very challenging molecule to transform and achieving sustainable ways to convert it is expected to have a significant impact.

- 3.5 Following the publication of the UKSPF Prospectus on 13 April 2022⁴, we agree with our colleagues at the Campaign for Science and Engineering (CaSE) that the prominence of R&D in the UK Government’s levelling up plans is welcome⁵. However, many in the sector have raised concerns about the lack of detail on how universities can access the funds and that the size of the fund does not match what was previously received⁶. Under the new guidance, places can fund research and innovation related activities under the ‘supporting local businesses’ pillar. This implies that it will be at the places’ discretion to decide how to support research and innovation, and therefore there is no guarantee that UKSPF will support research and innovation at the same level as ESIF did.

² Welsh Government, EU Structural Funds programme 2014 to 2020: approved projects, last updated 25 March 2022. See <https://gov.wales/eu-structural-funds-programme-2014-2020-approved-projects>

³ Case study 1 – see <https://science.research.southwales.ac.uk/applied-sciences-news/chemistry-researchers-win-49k-s%C3%AAr-cymru-award/>

⁴ Department for Levelling up, Housing and Communities, UK Shared Prosperity Fund: prospectus, 13 April 2022. See <https://www.gov.uk/government/publications/uk-shared-prosperity-fund-prospectus/uk-shared-prosperity-fund-prospectus>

⁵ Campaign for Science and Engineering, CaSE reviews government's plans for UK Shared Prosperity Fund, 14 April 2022. See <https://www.sciencecampaign.org.uk/news-media/case-comment/case-reviews-plans-for-uk-shared-prosperity-fund.html>

⁶ E.g., <https://www.researchprofessional.com/0/rr/news/uk/politics/2022/4/Universities-concerned-over-latest-Shared-Prosperity-Fund-plans.html>

4. Any shortfall in regional development funds must be replaced
- 4.1 **Any shortfall in research and innovation regional development funding in Wales or other UK nations and regions compared to funding levels before EU exit which is not met by UKSPF should be replaced from other funds to ensure that the UK research and innovation landscape does not suffer.**
- 4.2 In the 2014-2020 programme, 27% of the total ESIF Wales has received has been allocated to the ERDF priority areas ‘research and innovation’ and ‘enhancing the competitiveness of SMEs’, equating to an average of nearly £80 million per year⁷. It is estimated that Wales will receive an average of €125 per person per year from ERDF on activities related to research and innovation compared to the UK average of €23 per person per year by the time all currently allocated funding has been received in 2023⁸. While Wales’s population represents 5% of the UK’s population, it only receives around 2% (£794 million in 2019) of the overall UK expenditure on research and development⁹, most of which comes from business spend. Therefore, the loss of ERDF will have a significant and disproportionate impact on future research and innovation investment for Wales if the funds are not replaced¹⁰.
- 4.3 The case study below demonstrates the type of facilities and research in the chemical sciences that have been enabled by ERDF.

Case study 2: Funding for world-class facilities

One example of chemistry research supported by the ERDF is the **Cardiff Catalysis Institute (CCI)**. Catalysis enables chemical reactions to go faster with less energy and is at the heart of most industrial and biological processes: in 2015 the technology underpinned an estimated 80–90% of all products. The CCI is improving the understanding of catalysis, developing new catalytic processes with industry and promoting the use of catalysis as a sustainable technology. Infrastructure and equipment are central to the CCI’s research activities, and key to its success. The new CCI Electron Microscopy Facility (CCI-EMF), a world-class facility that will mean a step change in analytical capability, not just for the CCI but for industries, institutes and businesses across Wales, in part was funded by the ERDF.

⁷ Welsh Government, EU Structural Funds programme 2014 to 2020: approved projects, last updated 25 March 2022. See <https://gov.wales/eu-structural-funds-programme-2014-2020-approved-projects>. £80m is calculated by filtering for the Priorities ‘research and innovation’ and ‘SME competitiveness’ and dividing by 7 years.

⁸ E.g., The Royal Society, The UK Shared Prosperity Fund should help to grow research and innovation capacity across the UK, March 2021. See <https://royalsociety.org/-/media/policy/Publications/2021/03-21-UK-Shared-Prosperity-Fund-explainer.pdf>

⁹ ONS, Gross domestic expenditure on research and development, UK: 2019, released 4 August 2021. See <https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/dataset/s/ukgrossdomesticexpenditureonresearchanddevelopmentregionaltables>

¹⁰ E.g., Welsh Government, Wales: Protecting research and innovation after EU exit, 2019. See <https://gov.wales/sites/default/files/publications/2019-03/wales-protecting-research-innovation-after-eu-exit.pdf>

4.4 In recent announcements, the UK Government has confirmed that the UKSPF will be allocated £2.6 billion for the three years until 2025¹¹. This means that EU funding levels (approximately £1.5 billion per year) will not be matched until 2024–25. The UK Government has also indicated that the Levelling Up Fund will include some development funding, however, like UKSPF, there is little emphasis on research and innovation¹² so it seems unlikely that it will fill the shortfall.

4.5 As the Welsh research and innovation landscape benefitted substantially from ESIF and it looks like UKSPF and other regional funds will not match what was previously received, Wales stands to lose vital research and innovation funding. This loss of funding needs to be addressed to ensure Wales's research and innovation landscape does not suffer.

5. The UK must associate to Horizon Europe

5.1 **The Welsh Government must work with the UK Government in continuing to push for association to Horizon Europe.**

5.2 Science is an international endeavour and collaborative in nature. It can offer the widest benefits to society when researchers from different backgrounds, be that country, sector or discipline, come together to share knowledge and expertise. The Royal Society of Chemistry strongly advocates that association to Horizon Europe is the best outcome for the UK.

5.3 During the previous European Framework Programme, Horizon 2020, Wales participated in 430 projects and secured over £150 million in funding¹³. Of this, nearly £30 million went to SMEs. While Wales receives a smaller proportion of funds from European Framework Programmes compared to other UK nations and regions, it is still a key component in the Welsh research and innovation landscape and its benefits span much wider than funding alone, for example, see case study 1.

5.4 In February 2019, the RSC carried out a survey of our UK and international members¹⁴. 63% of respondents said that the factor that was most important in public research and development funding was access to collaborative networks that span

¹¹ Department for Levelling up, Housing and Communities, UK Shared Prosperity Fund: prospectus, 13 April 2022. See <https://www.gov.uk/government/publications/uk-shared-prosperity-fund-prospectus/uk-shared-prosperity-fund-prospectus>

¹² HM Treasury, Levelling Up Fund: Prospectus, March 2021. See https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/966138/Levelling_Up_prospectus.pdf

¹³ European Commission, *Horizon Dashboard* – H2020 Participants. Available at: <https://webgate.ec.europa.eu/dashboard/sense/app/93297a69-09fd-4ef5-889f-b83c4e21d33e/sheet/erUXRa/state/analysis> (Data last loaded: 30 March 2022. Accessed: 22 April 2022).

¹⁴ Survey performed by the RSC (February 2019) which almost 5,800 chemical scientists responded to. See <https://www.rsc.org/globalassets/04-campaigning-outreach/policy/policy/royal-society-of-chemistry-briefing---what-leaving-the-eu-with-no-deal-would-mean.pdf>

different countries, disciplines or sectors. The case study¹⁵ below illustrates the intangible benefits of EU collaboration¹⁶.

Case study 3: Enabling European collaboration

One example of chemistry research that illustrates the intangible benefits of EU collaboration is the **ALG-AD project** led by Dr Carole Llewellyn at Swansea University, funded by ERDF. In Europe, excess farm waste is increasingly being broken down through a process that produces a biogas suitable as a renewable energy source. Alongside this, the process produces a digestate by-product for which ideally uses should be identified. The ALG-AD project brings together scientists and engineers from across North West Europe to develop solutions that use algae to turn this by-product into feed for livestock. Carole told us that multidisciplinary, multi-partner collaboration is essential to the project's success and that there is no way the UK could be developing this sort of project without expertise and input of their EU partners.

¹⁵ Case study 3 - see https://www.rsc.org/globalassets/04-campaigning-outreach/policy/international-funding-and-collaborations/rsc_alg-ad_casestudy_2018.pdf

¹⁶ Note that the case study is an example of ERDF, rather than Horizon 2020, funding. However, it does illustrate the type of intangible benefits that come with association to the European programmes more generally.