

Royal Society of Chemistry, Institute of Physics and Royal Society of Biology submission to the House of Commons Science and Technology Committee's ad hoc session on the UK's association to Horizon Europe

About us

The Royal Society of Chemistry, Institute of Physics and Royal Society of Biology represent over 100,000 scientists in many sectors including universities, industries and schools, in the UK and across the world, at every career stage and from all sectors of the research and innovation landscape.

Introduction

We, the Royal Society of Chemistry, Institute of Physics and Royal Society of Biology welcome the opportunity to submit evidence to support the Committee's ad hoc session on the UK's association to Horizon Europe.

It is our view that association to Horizon Europe and other EU research programmes is crucial if the UK Government wants to achieve its science and technology superpower ambitions. In the remainder of this briefing, we have outlined the key benefits for businesses with supporting case studies.

Please get in touch with policy@rsc.org if you have any questions.

What are the benefits of UK association to Horizon Europe and other EU research programmes?

1. EU research programmes are a unique route to international collaboration, networks and world-class infrastructure on a global scale

The international collaboration, networks and world-class infrastructure that EU Framework Programmes offer are hugely important and beneficial to UK businesses, researchers and the economy.

*Under the previous EU Framework Programme, Horizon 2020, the UK established **over 237,000 collaborative links in 163 countries**, of which 12% were with countries outside the EU¹. These were only possible because of the common framework that EU Framework Programmes provide; participating in EU Framework Programmes is a stepping stone to worldwide collaboration, not just with the EU.*

Participating in programmes which have a common set of rules and funding cycles, like Horizon Europe, enables easier participation and collaboration at scale. While bilateral schemes can be a useful complement to EU research programmes, they are no substitute. Researchers and businesses can find them burdensome and they can be limited in the opportunities they offer, compared to EU research programmes that offer ready-made routes for multilateral cross-sectoral partnerships.

2. They create supportive international ecosystems for potentially high-growth, transformative SMEs to thrive

Connections through international networks are vital for science SMEs to recruit the specialist talent needed to support their cutting-edge businesses and their growth.

Case study: Coaching and support for SMEs²

Smart Separations Ltd was founded by Dr Hugo Macedo in 2013 and has benefited from Horizon 2020 Phase 1 and 2 SME Instrument funding. Dr Macedo said: "The SME Phase 2 was a game changer for us: it helped us scale-up that technology initially conceptualised in my kitchen, to manufacture these membranes and bring them to market."

¹ Horizon Europe – what next?, Russell Group, March 2023. See <https://russellgroup.ac.uk/media/6123/briefing-horizon-association-march-2023.pdf>

² International collaborations create chemistry Case study: Smart Separations Ltd, Royal Society of Chemistry, 2021. See <https://www.rsc.org/globalassets/04-campaigning-outreach/policy/international-funding-and-collaborations/smart-separations-case-study-on-the-value-of-international-collaboration.pdf>

The programme also came with access to private investors and coaching in innovation and business skills. “[The EU mentorship programme] ...helped us immensely by opening up the door to other countries, where we could tap into different expertise.”

3. EU research programmes attract and retain talented researchers and innovators

Participating in EU research programmes attracts and retains the global talent the UK needs to harness science and technology for environmental, social, economic and security benefits in a global market.

Schemes under the Excellent Science pillar (including ERC and MSCA) are highly attractive to researchers and the UK is continuing to be successful in these programmes despite the uncertainty (but funded through the UKRI guarantee)³.

Case study: Access to an international labour market to attract researchers with the skills SMEs need⁴

SMEs developing and commercialising new technologies need access to rare and specialist skills, for which the labour market is international. Association to Horizon Europe enables this access.

Global Cleantech 100 2023 company, Eonic Technologies benefitted hugely from the international labour market they could access through participating in Horizon 2020 as well as substantial SME Instrument funding. CEO, Dr Rowena Sellens, said “our employees have been working in groups inside and outside the UK on particularly strong research that just made them good candidates”.

4. Participation in EU research programmes supports the UK research base, benefitting businesses

Many businesses collaborate with universities to innovate and solve problems. Participation in EU research programmes strengthens science departments in UK universities, which benefits their business collaborators as well. Members of our communities working in business support association to Horizon Europe.

*In a survey of nearly 5,800 scientists, **88% of academics and 70% of industry professionals said UK involvement in EU Framework Programmes had a positive impact on UK science and innovation***⁵.

5. Significant financial benefits for businesses and SMEs

In the Horizon 2020 programme (2014-2020), UK businesses received more than €950m of funding through the Pillar II: Industrial Leadership⁶ (which includes specific programmes supporting key enabling technologies such as Nanotechnologies, advanced materials & production; Biotechnology; and Space, as well as specific programmes which support SMEs).

Physics-based businesses surveyed by CBI Economics on behalf of the IOP identified EU innovation programmes as a significant factor enabling their R&D activity, with 19% of physics innovators in the UK having received EU funding⁷.

³ Horizon Europe guarantee: application and grant offer statistics, UKRI, March 2023. See <https://www.ukri.org/publications/horizon-europe-guarantee-statistics/horizon-europe-guarantee-application-and-grant-offer-statistics/>

⁴ International collaborations create chemistry Case study: Eonic Technologies, Royal Society of Chemistry, 2018. See https://www.rsc.org/globalassets/04-campaigning-outreach/policy/international-funding-and-collaborations/rsc_eonictchnologies_casestudy_2018.pdf

⁵ Survey of chemical sciences community on their views of EU Framework Programmes, mobility, chemicals regulations and Brexit, Royal Society of Chemistry, February 2019. Note: for industry, 6% said involvement had no impact or a negative impact, 24% did not know; for academia, 3% said involvement had no impact or a negative impact, 9% did not know.

⁶ [Horizon Dashboard – H2020 Projects](#), European Commission, accessed October 2022.

⁷ Paradigm shift: Unlocking the power of physics innovation for a new industrial era, CBI Economics commissioned by Institute of Physics, October 2021. See <https://www.iop.org/sites/default/files/2021->

The UK also benefitted substantially from Pillar III: Societal Challenges, which aimed to address major challenges across Europe by bringing together resources and knowledge across different fields, technologies and disciplines⁸. UK businesses and universities have been awarded over €2.5bn (around 10% of the overall EU Pillar III funds) over the Horizon 2020 programme. An example of the type of challenge, collaboration between countries and organisations, as well as the financial benefits this Pillar enables is outlined in the case study below.

Case study: Working together to tackle global challenges⁹

Horizon 2020 funded project, Enabling Future Arrays in Tidal, brings together companies, UK Catapults and universities from across Europe to improve and cut costs of tidal power as part of Horizon 2020's Pillar III Societal Challenge: Secure, clean and efficient energy.

Based in the Shetlands and coordinated by UK company Nova Innovation Ltd, the project has secured almost €15m in funding from EU. This funding has enabled Nova Innovation to double the size of its tidal array, now hosting the largest number of turbines in the world.

[10/Paradigm-Shift-physics-innovation-final-oct-2021.pdf](#). Note: 'EU innovation programmes' includes EU Framework Programmes as well as EU Structural Investment Funds.

⁸ Horizon 2020 UK: The three themes of Horizon 2020, accessed March 2023. See <https://www.h2020uk.org/three-pillars>

⁹ CORDIS EU research results, European Commission, accessed March 2023. See <https://cordis.europa.eu/project/id/745862>