

Horizon Europe – what next?

Association to Horizon Europe - the world's largest collaborative research programme – has rightly been the UK Government's stated priority for more than two years. The Windsor Framework has removed the biggest roadblock to UK association to Horizon Europe, Copernicus and Euratom and the benefits that this will bring to individuals, businesses and the British public more widely.

*The scale of research supported by Horizon Europe will help deliver medical breakthroughs, new technologies such as AI, and other advances to improve all our lives. Modern science is team science: access to the ready-made routes for talent flow, facilities access and collaboration with multiple countries will help to build our status as a science superpower. **That is why the Government and EU must now rubberstamp the UK's full association.***

What benefits are at risk if we do not associate to Horizon Europe?

Ready-made routes to collaboration on a global scale: Along with Euratom and Copernicus, Horizon Europe provides unrivalled access to ready-made routes that make it easier to work with multiple countries. The common set of rules, funding cycles and access to talent, infrastructure, networks, collections and data allow us to operate on the same scale as countries such as the US and China. These collaborations would be extremely challenging - and in some cases impossible - to replicate on a domestic scale. Under Horizon 2020 the UK established over 237,000 collaborative links in 163 countries, with 12% of the individual links outside the EU but using the common framework that Horizon provides.

Established funding streams: Full association means access to the jewel in the crown of EU programmes, the European Research Council (ERC). In Horizon 2020, the 24 Russell Group universities alone won 1400 competitive ERC grants worth €1.8bn – more than the whole of France. Despite ongoing uncertainty, the UK continues to be one of the most successful groups of applicants for ERC funding in Horizon Europe securing 45 Consolidator Grants in 2023, second only to Germany. These grants are currently covered by the Government's UK Horizon Guarantee which has already paid out over £850 million to cover successful applications.

A magnet for talent: Access to EU Framework Programmes is a significant pull factor for the most talented researchers from around the world. Full participation will help secure the UK's status in the 'Champions League' of R&D, helping us to retain top UK researchers and attract international talent with all of the economic, health and other benefits that follow.

Supporting breakthrough technologies and start-ups in the UK: In Horizon 2020 nearly 2,000 UK businesses received €1.4bn, with SMEs receiving more than €840m of that to boost jobs and opportunity across the country. Horizon Europe has several funding routes to turn discovery research into new technologies and start-ups, such as the ERC Proof of Concept (PoC) grant and European Innovation Council (EIC) Transition grants, the likes of which are not available through UKRI alone. Horizon also provides access to large scale patient groups the UK cannot replicate.

Horizon as an integral part of the UK's global research strategy: There is room for ambitious new schemes for international research collaboration in areas of strategic importance to sit alongside Horizon Europe. That way we retain all the benefits of long-standing partnerships on our doorstep, while also pursuing new avenues to take global collaboration even further. **Horizon plus Global should be the strategy to deliver resilience, excellence and impact for the UK.**

University of Birmingham • University of Bristol • University of Cambridge • Cardiff University • Durham University
University of Edinburgh • University of Exeter • University of Glasgow • Imperial College London • King's College London
University of Leeds • University of Liverpool • London School of Economics and Political Science
University of Manchester • Newcastle University • University of Nottingham • University of Oxford
Queen Mary University of London • Queen's University Belfast • University of Sheffield • University of Southampton
University College London • University of Warwick • University of York

Examples of UK projects funded by previous Horizon programmes

University of Glasgow – [The Emotive Project](#)

Funded through the Horizon 2020 programme, the project allows users to imagine what life might have been like hundreds of years ago through the power of Virtual Reality/Augmented Reality technology and digital storytelling. The project has been used at UNESCO World Heritage sites, the Antonine Wall and the related Roman Frontier display at The Hunterian in Glasgow and the Neolithic site of Çatalhöyük in Turkey. It creates experiences that can be used on-site or online so it can be used in classrooms to bring history to life.

Imperial College London - [European AIDS Vaccine Initiative](#)

EAVI is a consortium of researchers from 22 public organisations and biotech firms from across Europe, Australia, Canada and the US aimed at making protective and therapeutic HIV vaccines. Led by Imperial College London, EAVI was funded by a €23m Horizon grant, helping scientists pool knowledge and expertise to develop vaccines that can be taken to human trial in five years or less.

University of Liverpool – [PAsCAL](#)

The PAsCAL project involved 13 organisations from across the EU and looked at how to develop autonomous vehicle systems including airborne ones that would be more user friendly and reassuring for passengers. Researchers at Liverpool used their expertise in airborne autonomous vehicles to develop a new set of guidelines and recommendations for industry at the end of 2022.

University of Sheffield – [The Amos Project](#)

This project shows how Horizon association provides a platform for global collaboration. Sheffield's Nuclear Advanced Manufacturing Research Centre (AMRC) led a €2.6 million four-year collaboration between European and Canadian aerospace manufacturers and researchers to investigate the use of additive manufacturing techniques for repair and remanufacturing of aerospace components (Horizon 2020). The project was supported by Canadian funding agencies CARIC and NSERC.

University of Nottingham - [vehicle noise pollution](#)

The project investigated noise wave simulation, making it possible to predict noise pollution, with new software that allows car manufacturers to predict how noisy a car will be for passengers, as well as from the outside, so they can take action to reduce the noise. Being able to pick industry partners from across the EU drove up the quality of the research and its findings, as well as the potential for further industry investment.

University of Southampton – [Stargazing to mole-gazing](#)

The project combined astrophysics and dermatology with potentially lifesaving consequences. Researchers took AI algorithms used for detecting minute changes in exploding stars and adapted them to spot changes in skin moles which can be early warning signs of skin cancer – one of the most common cancers in the UK. Currently a doctor visually compares images of moles taken at regular intervals however automating it could lead to earlier diagnoses and higher survival rates.

University of Cambridge - [Revolutionising cancer therapy via the DNA-damage response](#)

ERC funding, together with support from Cancer Research UK, led to the development of Olaparib, the world's first marketed DNA-repair enzyme inhibitor. It has been approved for ovarian, breast, pancreatic and prostate cancer treatment and has been used to treat over 30,000 patients in 73 countries. In 2020, it achieved an annual revenue of \$1,776 million. Four companies have been created to develop new drugs using this novel approach of DNA repair inhibitors to treat cancer, generating and supporting over 70 jobs.

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