



Llywodraeth Cymru  
Welsh Government

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# Wales in Horizon Europe 2021 to 2023

Wales' participation in the EU's Horizon Europe programme.

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# Foreword

Wales' participation in the EU's Horizon Europe programme is giving Welsh universities, businesses and other organisations the opportunity to join with their peers around the world. The programme is pushing the boundaries of science and tackling the biggest challenges, such as climate change and industrial competitiveness in new technologies. The programme facilitates the exchange of knowledge and people across borders. It enables businesses to be embedded in the supply chains of the future. Wales and Europe are in a globally competitive world that faces many challenges; international research and innovation can be part of the answer.

When the UK and EU were negotiating a new relationship in 2020, we in Welsh Government were clear that we saw the benefits of continued participation in EU programmes. There is little doubt that the delay in confirming associate membership to Horizon Europe for the UK caused unnecessary alarm and we welcomed the UK's association in January 2024. It will be a year or more before we can evaluate how applications have picked up from the current low base (about half our historic funding level). As this report demonstrates, there are some positive signs; in some prestigious competitions, our businesses and academics have done even better than in Horizon 2020. However, collaborative projects have faced difficulties.

Throughout the negotiation period, Welsh Government and the partners we work with have maintained international networks and rebuilt trust. We published our **International Strategy**, demonstrating that Wales is determined to be an outward-facing nation. Our recent **Innovation Strategy** recognises the importance of the international context. The Welsh Government's overseas offices have been actively pursuing collaboration. The £65 million commitment to our Taith learning exchange programme showed our commitment to mobility and networks. Welsh Government Agile Cymru funding has nurtured and sparked relationships with a variety of countries, in particular with Ireland. Welsh

Government has worked on new and existing memoranda of understanding, most recently with Silesia in Poland. We play an active part in networks such as the inter-regional Vanguard Initiative. Welsh Government will also now represent the Enterprise Europe Network in Wales, which will enable us to draw upon international networks for the benefit of Welsh businesses. It will also deepen our valued collaboration with Innovate UK.

It is important for all capable researchers, businesses, non-profit organisations and governments to be aware of Horizon Europe and to get involved internationally where they can. We should not be blind to the risks of collaboration but by working with like-minded countries in a well-regulated programme we reduce many of those risks.

Even as we start making the most of association to Horizon Europe, we are aware that debates are underway about the successor programme. There has been great progress towards the global involvement of like-minded countries: Canada, New Zealand and South Korea have associated. We will push for a win-win that will put Wales and the EU at the forefront of a fairer, more prosperous, sustainable, healthier world. Europe cannot afford to slip behind. A united and focussed effort from like-minded countries is needed for economic competitiveness, without which other challenges are much harder to address.

The immediate task is to make association a success on which to build. As the European Commissioner for Research and Innovation stated simply and clearly on her visit to London: apply!

## Introduction

## Challenges and strengths

Horizon Europe is the largest transnational collaborative research programme in



the world.

On 1 January 2024, eight years after the Brexit vote and three years after the EU and UK drafted association terms, the UK officially joined the programme.

Horizon Europe is worth around £80 billion in total. In addition, the UK is due to contribute some £2 billion per year. For every Euro the programme spends, it is estimated to yield 5 Euros in benefits to citizens up to 2040.

This opportunity is too big to leave on the table - researchers and organisations at the forefront of their fields must at least consider whether the programme is a fit for them.

With the average Horizon grant worth £450,000 to a UK recipient and £3m to projects as a whole, the programme offers an enormous opportunity. Unlike many other funds, Horizon Europe is open to any type of organisation, provided they can push the boundaries of human understanding and put that knowledge into practice for society. Horizon Europe is also truly international, giving researchers the opportunity to work confidently alongside colleagues from across Europe and a host of other countries such as New Zealand, Canada, Israel and South Korea.

Our performance to date shows how our researchers and businesses are doing well in non-collaborative parts of the programme. There is still work to do on success rates, but Wales submits over 5% of the UK's Excellent Science proposals. Collaboration has suffered more from the uncertainty – there is more to be done to get into the relevant networks.

Wales has much to offer through collaboration. In Horizon 2020, Welsh organisations took part in projects worth €2.5 billion, involving 81 countries and bringing grants worth €153 million to Wales (see our [Horizon 2020 Report](#)). Wales has some pioneering research and practice in a range of areas, including health, chemistry, ecology, physics, electronics, manufacturing and many others.

By partnering up and delivering on a continental scale we can address the global challenges that affect us all.

Most Horizon data is drawn from European Commission Horizon Dashboard R&I Proposals ([EU Funding & Tenders Portal \(europa.eu\)](https://ec.europa.eu/eu-funding-tenders-portal/)) which presents aggregated data on evaluated proposals in Research and Innovation programmes (last uploaded 14 June 2024). In some instances aggregated eCORDA data has been utilised and is referenced in the report. Statistics have been checked for accuracy as far as possible however it should be noted that minor inaccuracies can inevitably occur in the processing of large administrative datasets.

## I'm interested, what can I do?

- The [EU Funding and Tenders Portal](https://ec.europa.eu/eu-funding-tenders-portal/) is a good one-stop-shop.
- [Our call calendar](#) lists calls.
- [National Contact Points](#) are able to help further.
- Attend the expected information days for the 2025 opportunities.
- There are monthly [UKRI webinars](#) for general questions.
- If you are in a university or large organisation, you may have an in-house European funding specialist.
- The Welsh Government's [Horizon Europe Unit](#) is available to help.
- Sign up to our [X feed](#) and [newsletter](#) for updates, as well as those of the relevant thematic national contact point.
- Register as an expert with the European Commission
- See [Annex 1](#) for more information.

**Table 1 - Welsh international collaboration links in Horizon Europe projects, top 10 countries.**

Rank	Country	Collaborative links
1	Spain	152
2	Germany	145
3	Italy	130
4	Netherlands	80
5	Belgium	58
6	France	56
7	Austria	42
8	Portugal	40
9	Sweden	38
10	Denmark	35

The coordinators (consortium leaders) of Welsh collaborative projects are spread widely, with only two regions coordinating more than two projects: Cologne and Lombardy.

In Horizon Europe to date, Wales has collaborated with 53 different countries,

creating over 1,000 collaborative links.

It is notable that the UK itself is a strong partner for Wales in Horizon Europe, in that it is fourth on our list of collaborating countries.

Of the regions with which we collaborate the most, capital cities feature highly, perhaps due to the headquarters of national research organisations (and international organisations in the case of Brussels). It is notable that some Spanish regions feature highly on the list of collaboration with Wales, led by Catalonia but with Galicia and the Basque Country ranked alongside R&D powerhouses like the Munich region. Welsh Government has recently supported an Internet of Things delegation to further strengthen collaboration with Catalonia.

## Table 2 - Welsh collaboration links in Horizon Europe projects, NUTS 2.

Region	Collaborations with Wales (14+)
Cataluña	51
Ile-de-France	28
Brussels Capital Region	26
Lombardia	24
Comunidad de Madrid	22
Wien	21

Region	Collaborations with Wales (14+)
Zuid-Holland	21
Toscana	21
Helsinki-Uusimaa	18
Αττική (Attiki)	17
Oberbayern	16
Galicia	16
Hovedstaden	16
Köln	16
Inner London — West	15
País Vasco	14

## Progress to date in Horizon Europe

Between the start of the programme in 2021 and the last data on 30 June 2024, Wales had 106 verified applications totalling £42.8 million through the UK's Horizon Europe guarantee. As in previous programmes, the funding to Wales is around 2% of the UK's receipts; more than Northern Ireland but less than

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Scotland and in line with overall Welsh expenditure on R&D.

To take an illustrative snapshot as a starting point, in 2022 application numbers had declined to around half the 2015 levels (2022 being the last full year of data and 2015 the last year before the Brexit referendum). The number of projects selected for funding in 2022 was around 90% of 2015 due to higher success rates of the applications submitted. This pattern can be seen at UK and Welsh levels.

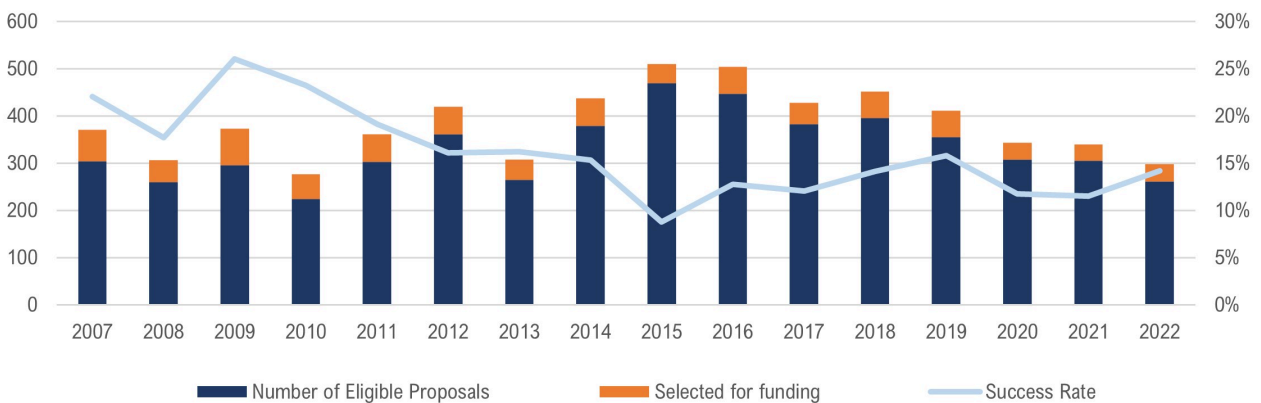


Figure 1 - proposals to EU Framework Programmes from Wales by call deadline year.

The UK has had access throughout Horizon Europe as a third country with funding from a domestic funding guarantee, but uncertainty and political difficulties have nevertheless taken a toll. Up to 2016, the UK tracked Germany as one of the top countries applying to Horizon but a gap has formed, with Germany’s approvals totalling an extra €5.5 billion.

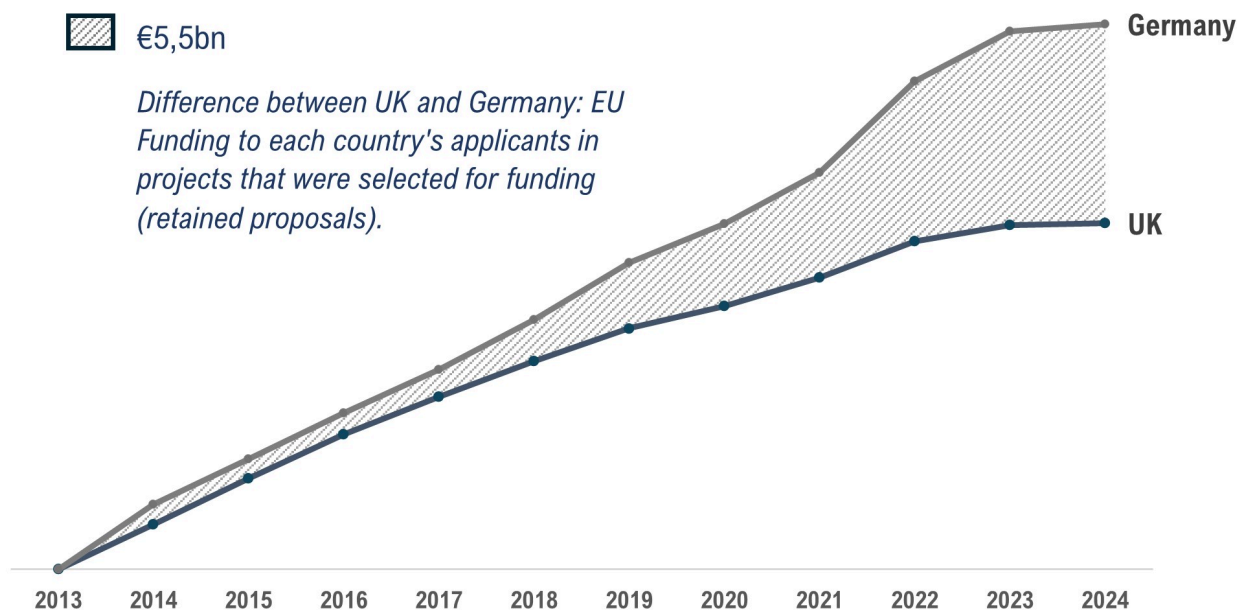


Figure 2 - UK and Germany EU Contribution to proposals selected for funding, by call deadline year

For some time, collaboration became more difficult and despite the UK funding guarantee, participation struggled further when the UK's entry to the programme as an "associated member" was delayed. From having the most participants of any country in 2015, the UK dropped to 5th place by the time the last Horizon 2020 participations were being signed in 2021, a position that has continued into Horizon Europe to date.

Nevertheless, it is encouraging that Wales and the UK have continued to apply and win funding, particularly under the **Excellent Science** part of the programme.

The ongoing success in **European Research Council** (ERC) and **Marie Skłodowska-Curie Actions** (MSCA) demonstrates the commitment of our universities and the ongoing relevance of the programme to our academic community.

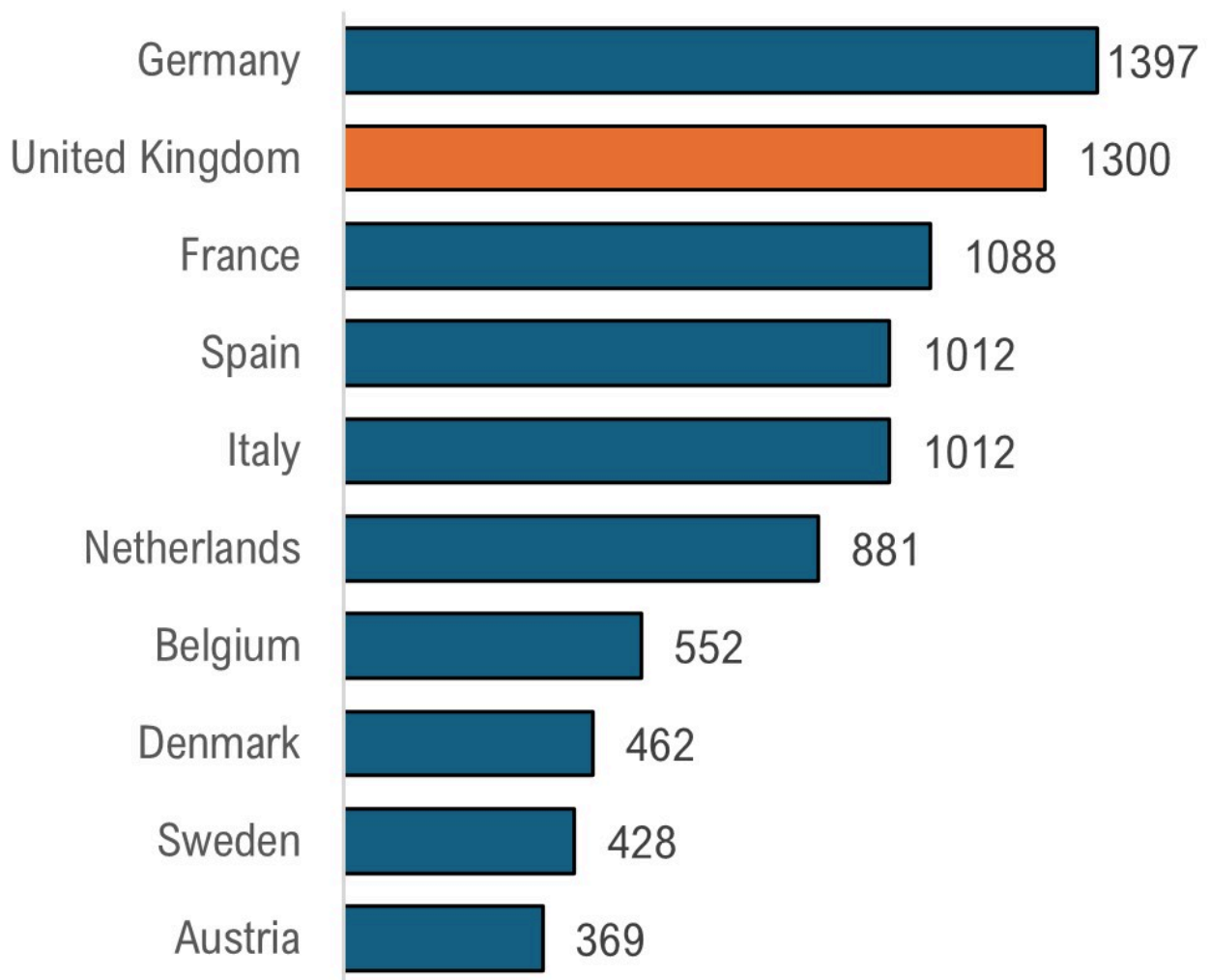


Figure 3 - projects selected for funding under pillar 1, Excellent Science, Horizon Europe (2021 to 2023) for top 10 countries.

It is notable that Wales has had recent success in the ERC Advanced grant, the most prestigious award that the programme has to offer.

Wales submitted 102 proposals to the ERC Advanced Grant in Horizon 2020 from 2015 to 2020, but none successful. In 2021 at the start of the Horizon Europe programme, a quarter of the Welsh ERC Advanced Grant applications



were funded and a further project was awarded in 2022. The Horizon Europe Unit has funded training on ERC applications which has had excellent feedback.

Universities bring in the majority of the Horizon Europe funding, attracting global expertise and spending in the heart of our towns and cities across Wales.

While ERC applications have declined in line with the average above (or more so in Wales), Welsh fellowship applications are now higher than pre-referendum.



Figure 4 - Wales' eligible applications for MSCA Fellowships (MSCA IF and PF) in Horizon 2020 and Horizon Europe, by call deadline year.

## Case study

Professor Michael Woods secured nearly €2.5 million for 'Rural Discontent, Spatial Justice and Disruptive Politics in the Twenty-first Century' (**Rural-Spatial-Justice**). The project will explore the relationship between voter discontent in rural areas and support for disruptive political movements, working with partners around Europe and at the University of Kentucky and the University of Wisconsin Eau-Claire.

## Wider context

It is important to put Welsh Horizon Europe achievement in the context of the overall capacity of the research system.

All the indicators below are below our population percentage, i.e. we have relatively fewer researchers and less business R&D expenditure per head, meaning that we must increase that research base or be more efficient than other regions in order to reach our population share of Horizon Europe funding.

On an organisational level some achieve this through specialisation, for example the higher education organisations with the most Horizon 2020 funding in relation to their size were the London School of Hygiene and Tropical Medicine and Imperial College of Science, Technology and Medicine.

In Horizon 2020, Welsh businesses did comparatively well, outperforming the Welsh % of UK business expenditure on R&D. Universities in Wales, like all regions other than Scotland and the South Eastern regions of England, achieved lower Horizon 2020 funding than their research capacity might suggest, despite Wales' universities' excellent performance on many other measures (see **Elsevier** 2021).

All sectors now face a challenge to increase participation in Horizon Europe.

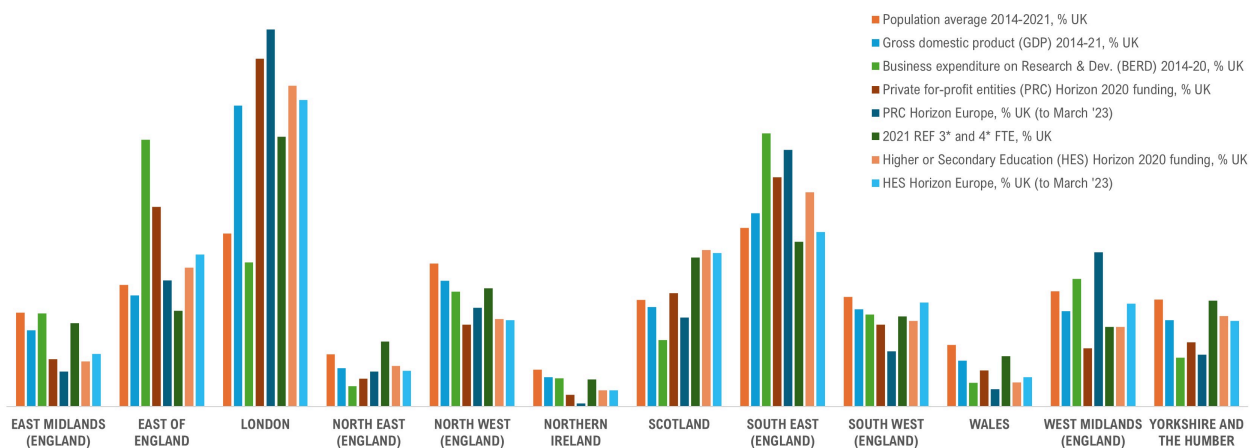


Figure 5 - Regional Comparison: general indicators and Horizon funding.

While individual business and researcher bids have surpassed Horizon 2020 in a few cases, it is in collaborative funds that more difficulties have arisen. Until 2016, the UK was positioned amongst the top three. The UK's position has fallen to 8th place in 2023 under Horizon Europe Pillar 2.

This is even the case in relation to collaborations with Ireland, our neighbours with whom we share the Common Travel Area.

Nevertheless, success rates for the UK have risen, helping to make up some ground compared to Horizon 2020. In Wales increased success rates have not compensated as much.

In contrast with the collaborative parts of the Horizon Europe, Wales has already surpassed its Horizon 2020 performance in the European Innovation Council Accelerator fund for single businesses. Three Welsh companies have attracted EU investment of £1 million to £2 million per business and more are applying.

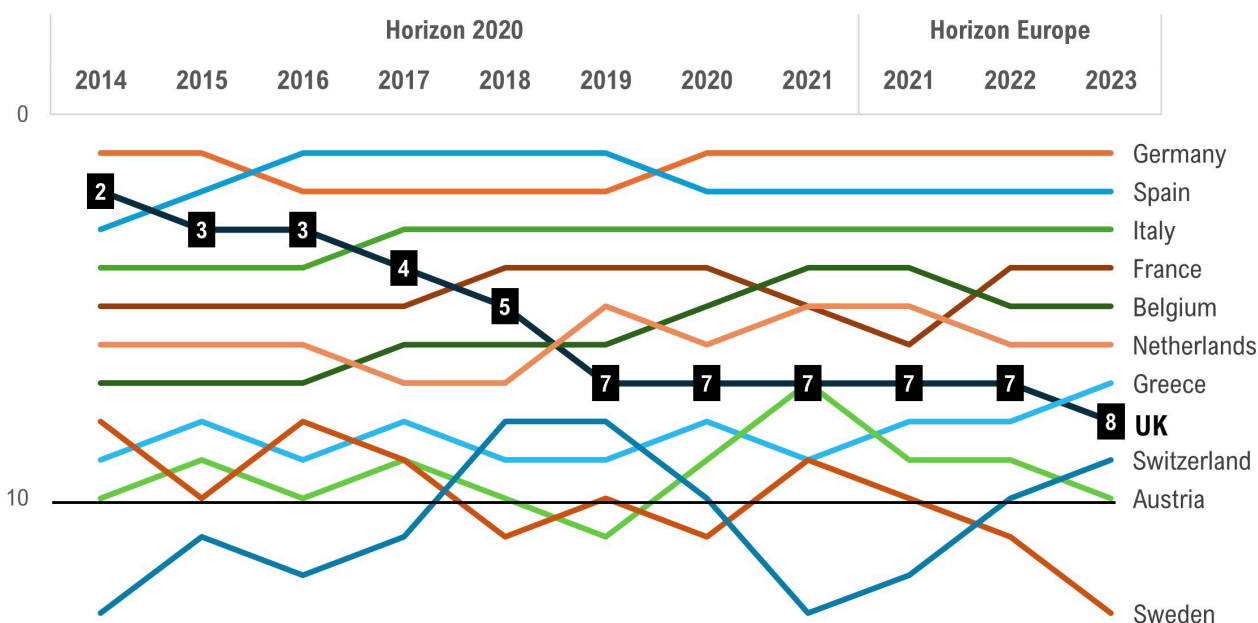


Figure 6 - Rank of top countries (projects selected for funding) under pillar 2 by call deadline year. (For like-for-like comparison, Horizon 2020 includes both Pillar 2, Industrial Leadership, and Pillar 3, Societal Challenges).

Now that the UK is back firmly in the Horizon Europe fold, it is vital to do everything we can for the next 4 years to make the most of the UK access to the programme.

To get more benefit from Horizon Europe, Wales and the UK can increase three factors:

1. The number of applications
2. The success rate of the applications
3. The size of those applications (€ for the Welsh partner)

The drivers of these factors are both structural and circumstantial. The relative importance of each varies according to the specific part of the programme in question.

We analyse these elements in the following section.

## Horizon Europe: critical factors

### Applications

For Wales to contribute to Horizon Europe and for the programme to impact on Wales, our organisations must put in applications. The most successful countries in terms of funding per person are also the countries with the highest numbers of applications: Luxembourg, Cyprus, Finland, Norway, Estonia, Denmark, Ireland, Belgium, Slovenia and Greece (of the 30 countries with the highest absolute application numbers, ordered by funding per head). Some of these have high success rates, others do not.

In relation to application numbers, Wales seems to have suffered from the late association to Horizon Europe in approximately the same way as the UK as a whole. The number of Welsh and UK applications dropped from 2016, and by 2022 were at around half the 2015 level.

In this difficult context Wales has actually increased its proportion of the UK proposals submitted, reaching over 4%. This is higher than the Welsh percentage of UK research and innovation generally. Despite the uncertainty around the programme for years, applicants in Wales still put an enormous amount of effort into 670 proposals.

Wales submits over 5% of the UK's Pillar 1 (Excellent Science) proposals – our researcher excellence and mobility applicants are comparatively well-involved with the programme. Indeed our MSCA fellowship application numbers remained much the same as pre-Brexit (though success rates in this part of the programme are relatively low).

It is in Pillar 3, the **European Innovation Council** (EIC) that Welsh proposals are lowest, at 2% of the UK, but this is in line with our proportion of **UK Business Expenditure on R&D** generally.

This year, the Welsh Government is becoming the **Enterprise Europe Network** (EEN) representative for Wales and we are already working with applicants to the EIC, as well as supporting business collaboration through **SMART FIS** and overseas innovation delegations.

From our conversations with stakeholders, we have heard a narrative that explains the drop in applications, along with continued interest from a certain cohort. As stated in our Horizon 2020 final report, Brexit correlates with an initial significant drop. Covid had an effect on the formation of international connections, with early career researchers and businesses said to be particularly affected. There were signs of a recovery upon the news that a deal had been done, but the subsequent delay to UK association undermined morale and confidence, preventing a resurgence and having a further impact on applications. The guarantee from the UK was welcome but was not sufficient to dispel mistrust and uncertainty, not just in the UK but from international partners who perceived a risk and administrative burden.

Meanwhile, those researchers and organisations with sufficiently close relationships, built over decades, had the confidence and ability to continue, using the UK guarantee, their experienced support staff and familiar overseas coordinators. This core of repeat applicants has maintained a level of activity and increased success rates as it is likely that there were fewer speculative applications during times of uncertainty.

It appears that not as many businesses had this kind of stable relationship, compared to universities and public sector organisations. Nevertheless, Welsh businesses have been more successful in the non-collaborative parts of Horizon Europe, winning millions of Euros in the EIC accelerator and surpassing their Horizon 2020 total already.

It is a massive demand on organisations to double the number of their applications at a time when many are under financial pressure, have lost some EU specialist staff and are rebuilding networks and research capacity following the loss of structural funds. The situation is unlikely to turn around overnight, but there is a great deal of enthusiasm for the programme and we will be supporting that.

- Application numbers are the key metric for Wales at the moment, with arguably a need to double the number of applications.
- Welsh organisations have kept on submitting applications throughout the uncertainty: 670 proposals to Horizon Europe in just over two years.
- While fellowship applications have maintained numbers, other types of application have dropped.
- Now that the UK has associated to the programme, we expect application numbers to increase.

## Quality

Wales has had a 13% success rate overall so far in Horizon Europe, compared with the UK's 19%. However, a high proportion of Welsh applications only narrowly miss out on funding.

In an international context, countries' success rates vary greatly from zero to 100%, but the average in Horizon Europe is 17%. This is higher than in the predecessor programme, which had an average of 12%.

To understand these rates we must look at the detail of different parts of the programme. There are large variations over time and theme, particularly with smaller datasets as in Wales.

The Welsh success rate is heavily influenced by the Marie Skłodowska-Curie (MSCA) Postdoctoral Fellowships scheme, which has a high level of demand

from researchers wishing to come to Wales but a success rate of 10%. Of all UK regions, Wales has the highest oversubscription rate for this part of the programme: 96% of excellent proposals didn't receive funding.

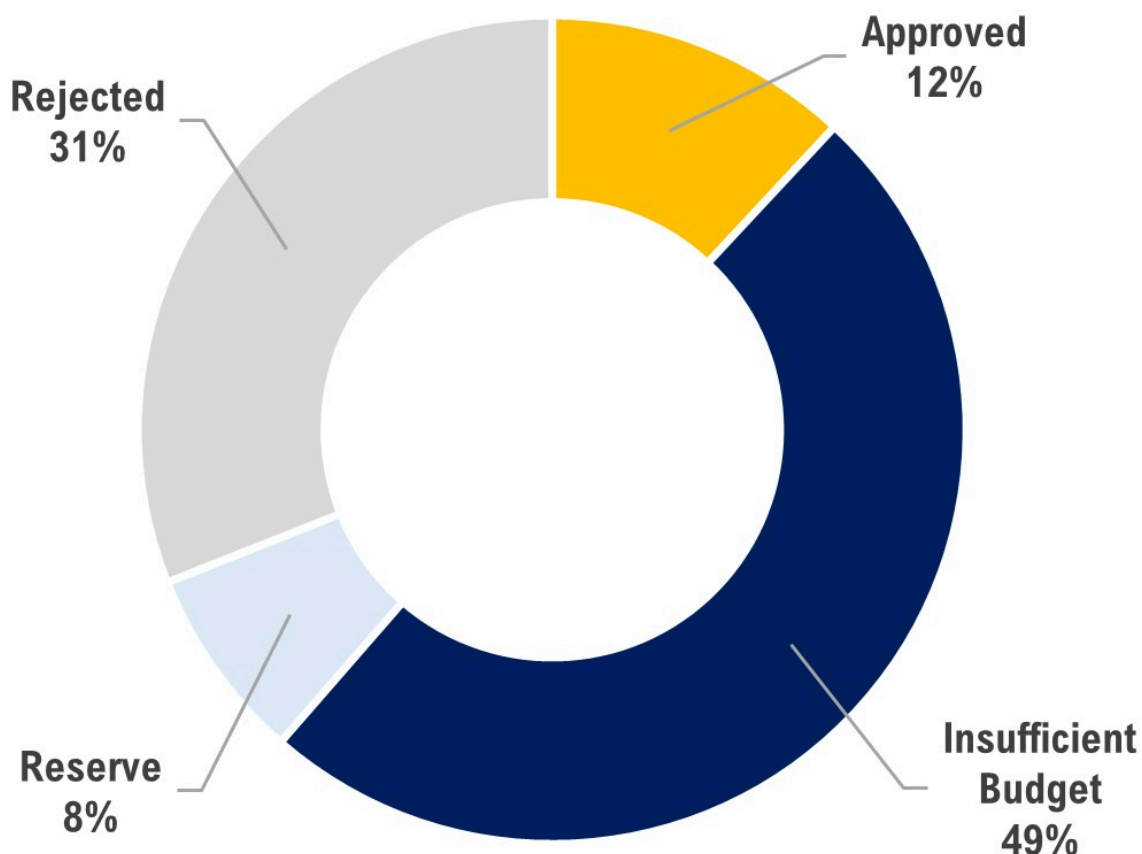


Figure 7 - Welsh Horizon Europe proposals by evaluation category. Data sourced from eCORDA.

Overall, nearly 60% of Welsh applications were over the quality threshold and would have been funded, had there been more budget available.



We have been working with universities to increase the number of excellent applications that get funded. Aberystwyth University has had their best year yet in 2023 MSCA Postdoctoral Fellowships, following Welsh Government support for a summer school and consultancy for 'bid-polishing'.

## Case study

**Dr Sathiyarayanan Ganesan** of the university of Neuchâtel is joining Professor Sandra Esteves of the University of South Wales thanks to a £200,000 MSCA Postdoctoral Fellowship grant, paid through the UKRI Guarantee. This will enable work to proceed on a novel biotech process for the sustainable bioconversion of CO<sub>2</sub> into polyesters. The project aims to demonstrate this clean technology at pilot stage, which would help develop the UK and EU biotech industry.

## Scale

Scale refers to the amount of EU funding per project and offers an indication of the size and role of Welsh organisations.

On the whole there is little variation in values in Pillar 1, where fellowships and ERC awards have consistent sizes. In the challenge-based collaborative part of the programme, Pillar 2, the scale of awards to Wales has not declined. The average Pillar 2 award to Welsh organisations to date under Horizon Europe is €456,000. It was €438,000 in Horizon 2020 post-2016 and was €382,000 in 2014 to 2016 (For like-for-like comparison, Horizon 2020 includes both Pillar 2, Industrial Leadership, and Pillar 3, Societal Challenges).

In Pillar 3, Wales has won more large awards in Horizon Europe than in Horizon 2020 due to success in the Accelerator (some €2 million per business).

While the volume of applications has declined, it is positive Welsh expertise is recognised by partners in the scale of contribution in the successful projects; perhaps a reflection of the strength of relationship needed to join a consortium during a time of uncertainty.

## **Performance across sectors**

### **Business participation**

It is not often appreciated that Welsh businesses did very well in the Horizon 2020 programme, with higher private sector participations here than the UK overall – around a third of all our participations and a quarter of our funding. Our business success then was largely in the collaborative parts of the programme (Pillar 2).

This picture has changed in Horizon Europe to date. While the UK as a whole is affected by the same dynamic, Wales had a higher proportion of private sector collaborative participation originally and has therefore been hit harder.

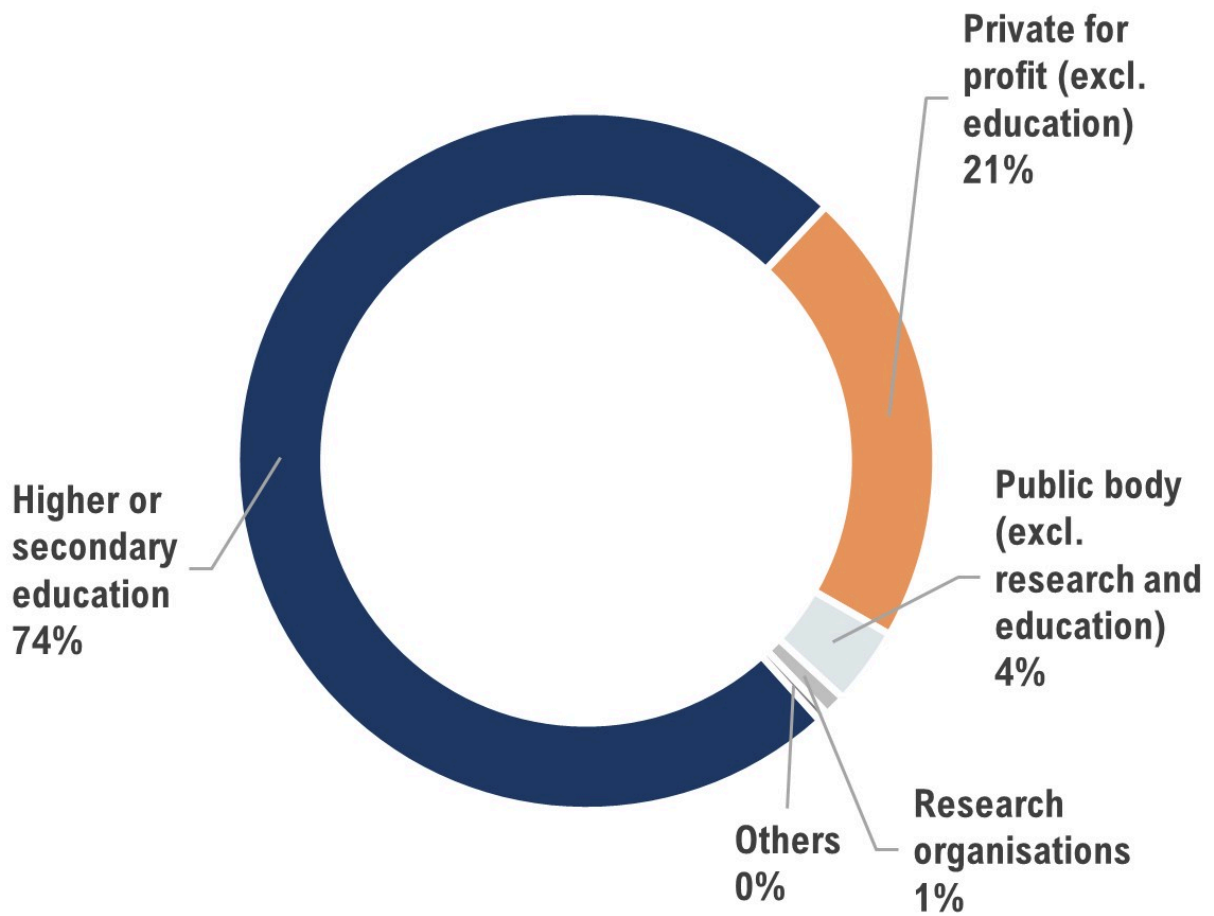


Figure 8 - EU Contribution by type of organisation, Wales

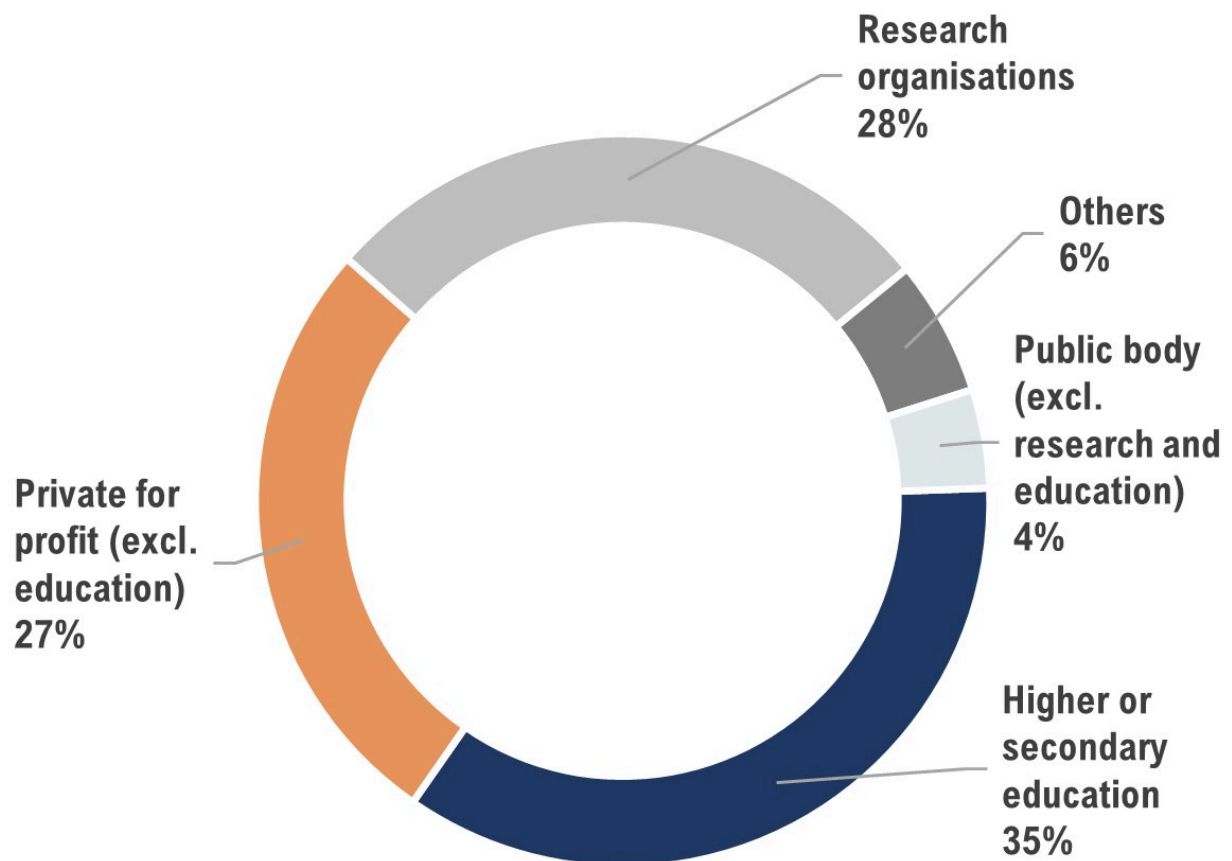


Figure 9 - EU Contribution by type of organisation, Horizon Europe Programme

Nearly half of the Welsh private sector participations in collaborative projects to date are in digital technologies (7 of 16). The next highest category for the private sector is doctoral networks. This highlights an important point that industrial involvement is vital in the parts of the programme that deal with researcher careers.

Wales has succeeded in attracting more **European Innovation Council Accelerator** (EICA) investment than ever before. Momentum Bioscience Ltd,

Alesi Surgical Ltd and Afon Technology Ltd are companies that have had success worth over £6.3 million. Through the Welsh Government Innovation Team, we are working with a solid pipeline of eligible businesses. The Welsh Government has a memorandum of understanding with Innovate UK that will further help to support innovative businesses, alongside Welsh Government's SMART FIS.

## Case study

**Afon Technology Ltd** is a Chepstow company that has developed a wearable glucose monitor. It applied to the EICA for funding and was awarded **€2.4 million**. The sensor worn on the wrist uses light to monitor glucose in real time with no time lag. The device could not only eliminate the need for routine blood tests, but will also give people with diabetes a convenient and painless way to monitor their blood glucose levels.

## Public sector participation

The NHS is an important asset that makes the UK a very attractive partner for life science R&D. Its data, scale and regulatory environment offer advantages, while the challenges health services face require both science and innovation. In Horizon Europe, there are three Welsh NHS projects and overall the public sector participants make up a higher proportion of participants in Wales than they do in the UK overall. By contrast, Wales has relatively few Research and Technology Organisations / Public Sector Research Establishments.

There are currently no local authorities involved in Horizon Europe, yet they are eligible and there are specific parts of the programme that seek government participation. For example, the Missions are inviting authorities to align their efforts with those of the EU. Governments are often welcomed as they have physical assets and parallel investments, for example test beds, intangible

assets such as data and knowledge, and the ability to adopt outcomes into policy. However, taking part requires directing resources to collaboration and innovation with no guarantee of success, which can be difficult when services are under pressure. We hope to see more public bodies take part in future years.

## Case study

**Hywel Dda University Health Board** has been awarded £168,268 funding from UKRI's Horizon Europe Guarantee for its work in the Horizon Europe project **DYNAMO**. The €5 million project brings together four procurers from Italy, Spain, Portugal and Greece to create quick and data-driven health and care processes to ensure delivery when health system functions are threatened. It will help task planning and skills matching in times of crisis and help build resilience of the EU health care systems to respond to public health threats better than they can today.

The Health Board has been awarded a further £266,860 for their participation in **Invest4Health**. This project focuses on mobilising novel finance models for health promotion and disease prevention. The sharing of risks and resources to invest at scale will help address budgetary pressures on healthcare and incentivise new ways of financing health promotion and disease prevention.

Professor Chris Hopkins, Head of Innovation and TriTech Institute noted:

“ We are very excited to be involved in these projects and working with partners across Europe. Both projects offer an opportunity to develop and improve systems to support healthcare and planning on a local and national level. We hope that these projects will enable collaborative and efficient working, leading to improved health for Wales. ”

## Universities

Universities are the engine room of current Horizon Europe participation in Wales in that they have attracted around three quarters of the funding to date. Most of this is in Pillar 1, Excellent Science. They are a strong part of our system and have often partnered with companies and government. We cannot rest on our laurels – despite the success, there are challenges.

As noted in our Horizon 2020 final report, not all universities across the UK have the same efficiency in converting **Research Excellence Framework** (REF) high quality research into Horizon Europe funding. It may be that some research areas are more aligned to other sources of funding. Nevertheless, it is likely that there are untapped resources in our universities. In particular, early career researchers have spent several years working through the challenges of Covid and Brexit. Furthermore, staff/student recruitment from the EU is more challenging than it was. This means fewer European networks are imported or developed on which applications can be built. Financial constraints on universities can also have an effect and increases in teaching hours can affect the ability of staff to carry out research. There is also a question of administrative capacity and coordination expertise in that Horizon Europe projects demand considerable administrative resources and experience. Funders and universities have a role to play in creating space for international collaboration.

There is also a need to adapt to the direction of travel in Horizon Europe and other funds. With industrial competitiveness, defence, the innovation divide, fiscal pressures and health affecting many countries, research programmes may tend towards a greater emphasis on impacting on these societal challenges.

Welsh universities are clearly determined to address these challenges: the Welsh Innovation Network (WIN) has brought research groups together in priority themes in order to increase competitive funding. Welsh Higher Education Brussels (WHEB) is active in supporting universities to influence European developments and access Horizon Europe. WHEB, the Learned Society for

Wales and WIN have developed or run bilateral funds with other countries recently. Each university has European officers who are actively supporting university staff from early orientation to financial claims. The Welsh Government's Horizon Europe Unit is supporting through seed funding, analysis and joining up support wherever possible.

## Case study

Cardiff University has been awarded €820,000 of a €4.2 million grant from the Horizon Europe's Marie Skłodowska-Curie Actions Doctoral Networks, to develop more efficient and reliable renewable energy technologies.

**ADoreD** (Accelerating the Deployment of Offshore wind using DC technology) aims to train fifteen international students to produce a pool of highly skilled and employable energy experts. The project will bring together 19 organisations from nine countries across the UK, China and Europe.

The consortium has developed through a series of successful past projects, all led by **Professor Jun Liang** at the School of Engineering.

These include **MEDOW** (Multi-terminal DC grid for offshore wind) from 2013 to 2017, which led to **InnoDC** (Innovative tools for offshore wind & Direct Current grids) from 2017 to 2021.

## Performance by pillar

### Introduction to Horizon Europe structure and budget

Horizon Europe uses a similar structure to that of Horizon 2020, in that there are three key "pillars".



The first pillar, Excellent Science, and to a large extent the third pillar, Innovative Europe, are open to applications in any field of research or innovation. Their focus is researcher excellence and the growth of innovation-based companies respectively.

The second pillar is often seen as the core of Horizon Europe. It is the largest of the three key pillars and is where consortia of applicants from different countries address European and global policy challenges together. These policy areas fit well with the Welsh Government's Innovation Strategy.

We look at Welsh participation in all pillars below.

<b>Horizon Europe Pillars</b>	<b>Total (in € million)</b>
	<b>95, 517</b>
<b>Excellent Science</b>	<b>25,011</b>
The European Research Council (ERC)	16,004
Marie Skłodowska-Curie Actions (MSCA)	6,602
Research infrastructures	2,406
<b>Global challenges and European industrial competitiveness</b>	<b>53, 516</b>
Health	8,246
Culture, Creativity and Inclusive Society	2,280

<b>Global challenges and European industrial competitiveness</b>	<b>53, 516</b>
Civil Security for Society	1,596
Digital, Industry and Space	15,349
Climate, Energy and Mobility	15,123
Food, Bioeconomy, Natural Resources, Agriculture and Environment	8,952
Non-nuclear direct actions of the Joint Research Centre (JRC)	1,970
<b>Innovative Europe</b>	<b>13, 597</b>
European Innovation Council (EIC)	10,105
European Innovation Ecosystems	527
European Institute of Innovation and Technology (EIT)	2,965
<b>Widening participation and strengthening the European research area</b>	<b>3, 393</b>
Widening participation and spreading excellence	2,955
Reforming and enhancing the European R&I System	438

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## Excellent science

Wales has achieved around half of its participation so far through this pillar of the programme. This is largely due to university projects in the European Research Council (ERC) and the MSCA researcher mobility and training schemes.

Under the ERC in Horizon Europe, Wales has submitted 72 eligible proposals of which eight have been selected for funding; a success rate of 11% (up on the 6% under Horizon 2020 but still below the UK's 17%). These are large projects; the grant requested for the successful projects is almost €13 million.

Welsh success comes via Cardiff University, Swansea University, Aberystwyth University and a participation by the Royal Commission on the Ancient and Historical Monuments of Wales.

Wales submitted 7% of the UK applications for MSCA fellowships: 187 applications (up from Horizon 2020).

This indicates Wales is still an attractive destination for researchers from around the world, and Welsh universities still have the capacity to work on large numbers of applications.

Pillar 1 also includes Research Infrastructures. This part of the programme provides globally competitive sustainable research facilities. This includes virtual infrastructures that operate across disciplines and national borders, such as Blue Lobster IT Ltd's participation in the AqualNFRA project.

## Case study

Blue Lobster IT Limited, based in Anglesey, specialises in software and communications consultancy for the environmental sciences sector. Over the

past 18 years, they have actively participated in more than 30 Horizon and FP7 programme projects. Their collaborations extend to government agencies, educational institutions, NGOs, and industry leaders.

Mr. Simon Keeble, Director of Software Engineering and Communications, emphasizes the crucial role of EU funds and the Horizon Europe framework. Without this support, their recent AqualNFRA project would face significant challenges. Lack of funding could limit collaboration with European partners, hindering exposure to diverse environmental science ideas and approaches. Moreover, financial constraints might reduce their contribution to vital environmental initiatives, impacting Europe's scientific progress.

Blue Lobster's involvement in the Horizon Europe AqualNFRA project has far-reaching implications. Their leadership in the CDE work package and the development of the AqualNFRA Dataspace and Data Discovery and Access Services solidify their position as key players in the environmental sciences sector. They plan to leverage this experience for future collaboration and innovation, aligning with their expertise.

This project marks a significant milestone in Blue Lobster IT Limited's history, reflecting their commitment to environmental science, collaboration, and innovation. Looking ahead, they eagerly anticipate unlocking more opportunities through AqualNFRA, allowing them to contribute even more significantly to environmental advancements.

## **Global challenges and European industrial competitiveness**

This part of the programme supports global collaboration.

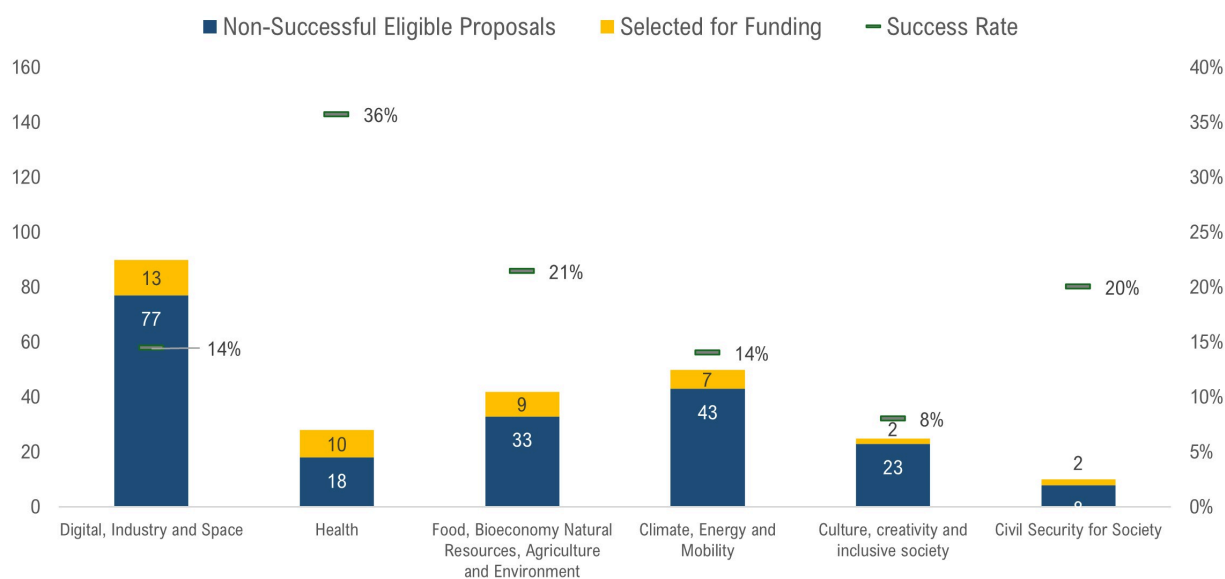


Figure 10 - Welsh project applications and projects selected for funding, by thematic priority, Horizon Europe to date

Digital, Industry and Space has seen the greatest success in the early years of the programme. This part of the programme has attracted by far the most proposals from Wales to date under Pillar 2. These projects include Artificial Intelligence adoption by manufacturers and metallurgy, recycling systems and human-machine interaction, for example in composite production.

Health has also seen a positive start, with five projects involving Cardiff University, three with Bangor University and three NHS participations, as well as participation from Swansea University and Aberystwyth University. These projects include understanding mental health in youth, family-focused adolescent health promotion, diabetes diagnosis, end of life therapy and others.

Food, Bioeconomy, Natural Resources, Agriculture and Environment is a broad cluster that has long been an area of strength for Wales. So far in Horizon Europe, Wales has submitted 42 eligible proposals to this part of the programme, with 9 selected for funding (though 11 actually funded). This

represents a success rate of 21%. While this is an encouraging rate, it is lower than that of the UK overall (29%). Projects in this part of the programme cover a broad range, including those informing rural and food policy, developing legume crops, forests, marine ecology, and circular supply chains.

## Innovative Europe

There are two main areas of activity for Wales in this section of the programme: the Pathfinder fund for early stage research into promising technological fields, and the Accelerator which helps companies to get products from demonstration stage to the market.

Earlier in the report we noted the positive success of Welsh businesses under the EICA.

Welsh universities have participated in three EIC Pathfinder projects to date. Cardiff University is participating in **Bio-HhOST** exploring Next Generation 3D Tissue Models ([related Horizon Europe UKRI Guarantee award](#)). Swansea University is participating in two EIC Pathfinder projects. **DAM4CO2** aims to investigate ways to convert the carbon dioxide emitted by industries into renewable fuels ([Horizon Europe Guarantee award](#)), and **BMReX** is an European project designed to develop a technology for the removal and degradation of nano- and microplastics ([Horizon Europe Guarantee award](#)).

## Other parts of the programme

### Widening Participation and Strengthening the European Research Council.

Horizon Europe seeks to boost research and innovation performance throughout

the European Union. Widening actions support EU countries that continue to lag behind in research and innovation.

Welsh proposals to this part of the programme have been few to date (11), but have achieved good success (27%).

These include National Resources Wales joining Environment Protection Agencies (EPAs) and similar partners from 13 European countries to support national policy makers and societies to address the Global Challenges and Sustainable Development Goals (**CASRI**).

## **European partnerships**

The Horizon Europe programme introduced a new generation of European Partnerships channelling funds through a wide range of public-private and public-public cooperation. Wales has previously performed well in partnerships dealing with the circular bioeconomy, aviation, processing industries and manufacturing. We have a renewed interest in the Europe's Rail partnership due to the **Global Centre of Rail Excellence**. The Welsh Government's Horizon Europe Unit has researched Welsh participation in partnerships to contribute to UK mapping. We have also looked at the potential for participation in cofunded partnerships (where funding bodies from different countries pool their resources) and have supported applications.

Likewise, we have looked into Welsh participation in the European Institute of Innovation and Technology and find a varied picture over time. We are working with others to understand the full picture and boost participation. We supported Nightingale HQ, a Pontypridd-based company, in their work with the EIT Manufacturing hub (see case study).

There is considerable potential for more engagement with the partnerships and their industrial stakeholder groups – we encourage organisations with a strategic

interest in a specific part of the programme to look at how to take part in the relevant partnership. There will nearly always be a stakeholder group, membership option or cascade fund. It is through early engagement with such influential groups that organisations can get sight of draft calls and develop consortia.

## **EU-wide R&I missions**

The Horizon Europe missions are a new approach to the challenges around soil, oceans, cities, cancer and climate adaptation. They have a modest budget in proportion to the challenges faced, but seek to lever in the efforts of stakeholders for greater impact. There is overlap with areas of Welsh policy and activity and involvement is building in some areas.

Prof. Bridget Emmett of the UK Centre for Ecology and Hydrology in Bangor was a Board member for the Soil Mission and advises the EU's Soil Observatory.

Bangor University has been actively seeking to contribute to the Ocean Mission. With Agile Cymru funding and the on-site expertise of Welsh Higher Education Brussels, Prof. Shelagh Malham has held a series of workshops to explore the potential for more collaborative research to achieve policy objectives in the Irish Sea.

This workshop series culminated in Brussels and Cardiff. In Brussels, the Head of Unit for the Ocean Mission joined a varied audience in the Northern Ireland Executive's office. University College Cork and Bangor University joined representatives from around Ireland, Brittany, Quebec, the Isle of Man and Kent (all with experience of collaboration across a maritime border).

Three organisations around the Irish Sea, including Menter Môn on Anglesey and Bangor University, have since been selected to take part in a Digital Twin of the Oceans project that is looking at data sharing in the context of the Ocean



# Mission.



Towards Blue Solutions - illustration: Laura Sorvala

# Addressing barriers

## Financial Assistance

The Welsh Government's Horizon Europe Unit has continued to provide financial assistance to Welsh organisations throughout the Horizon 2020 and Horizon Europe programmes.

That support continues under the [Agile Cymru programme](#), through a mixture of funding initiatives and an 'open pot' for specific Horizon Europe interventions.

We welcome applications that address the issues highlighted in this report: success rates, application numbers from business and the public sector, improving the quality and number of collaborative bids, for example. It could be particularly useful to create focal points for applications in particular sectors, with plans for increased influence in the relevant networks in preparation for funding calls in 2025 and 2026.

## Examples of Agile Cymru initiatives open in May 2024

### Horizon Europe Initiative

Encourages proposals that will develop a pipeline of Horizon Europe applications in a thematic area, preferably including a range of organisations, such as a business cluster.

### Irish Sea Initiative

Aimed at Welsh organisations looking to build partnerships and economic co-

operation across the Irish Sea region, to support the Irish Sea Framework.

## **EU Regions Initiative**

Aims to increase economic cooperation and networks with EU regions such as the Basque Country (Euskadi), Baden Württemberg, Brittany, Flanders, and Silesia.

Apply [here](#) or contact the Agile Cymru team [here](#).

In previous years, we have supported the exploration of societal challenges between different research teams, the formation of consortia for funding bids, consultancy to aid with the writing or reviewing of applications, awareness-raising events, membership of international organisations and training.

Since its inception in 2013, our funding has helped to bring over €21 million to Wales from Horizon 2020/Europe. This was achieved through 381 grants of a total of £860,403 to 105 individual organisations. This report contains a number of recent examples of Welsh organisations that we have supported.

## Case study



Nightingale HQ Ltd: funding under Agile Cymru, success with EIT and Innovate UK

Nightingale HQ Ltd (NHQ) provides optimisation and AI-powered tools to help manufacturers reduce waste and associated carbon emissions. Agile Cymru support helped develop NHQ links with manufacturers in Ireland and Germany as part of their participation in a two year project funded under the European Institute for Innovation and Technology (EIT) and Innovate UK: **Re-imagining Design & Planning for Greener Reinforcement Steel Manufacturing**.

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## Communication - Wales is back in the programme

There was a full programme for St David's Day 2024 in Brussels with Horizon Europe front and centre. The Welsh Government's Horizon Europe Unit took part in various events. This included raising awareness of the programme in a cluster-to-cluster Life Science meeting between Flanders and Wales. The meeting went on to focus on practical ways for the clusters to join forces, particularly regarding therapeutics and diagnostics. The Unit also funded and took part in an Ocean Mission event at the Northern Ireland office (see earlier in this report). The involvement of Welsh Higher Education Brussels (WHEB) was key to bring together the relevant European partners.

WHEB continues to organise visits and convey information back to the universities of Wales. It is located with Welsh Government in Wales House and is an important link between Welsh university research and European networks and policy.

The Welsh Innovation Network is an initiative of Universities Wales funded by Welsh Government. It has prioritised a number of sectors with a view to increasing competitive grant capture and is actively pursuing opportunities under Horizon Europe.

WIN was pivotal in organising an important **event** for St David's Day at which the First Minister addressed attendees from around Europe. The universities of Wales showcased their expertise, interests and desire to collaborate. The EU rotating presidency also spoke, in the form of the General Representative of Flanders to the EU.

Welsh Government was also flying the flag at the UK Science Summit in Brussels and the EU R&I days in March.

The Horizon Europe Unit has issued newsletters covering the important developments of the programme, reaching over 500 people per issue. The Unit



has also reached out to groups and individuals, through presentations, e-mails, and events, totalling over 500 engagements in little over a year.

This engagement is making the point that Wales is a committed participant in international collaborative research, with much to offer and much to gain.

## Ireland-Wales

This is an important, historic relationship and one that is extremely well-placed for mutual benefit in Horizon Europe.

In October 2023, Irish and Welsh ministers met in North Wales, as part of their **Shared Statement and Action Plan** and highlighted the opportunity for collaboration through Horizon Europe. In April 2024, Universities Wales helped sponsor a British-Irish Chamber of Commerce event on research and innovation. The welcome from Ireland to the UK was overwhelming, matched by the determination from the UK to rise up from its current spot as the 8<sup>th</sup> most frequent collaboration partner of Ireland in Horizon Europe. The opportunity is great, not just because our research ties are strong, but also because the Common Travel Area enables the mobility of research and innovation staff.

**BlueAdapt**, a project led by the Basque Country and involving Galway and Bangor Universities was chosen as a case study. The project is researching environmental-health interactions and is monitoring antimicrobial resistance. The participants highlighted the challenge from the loss of European Territorial Cooperation funding but embraced the opportunity to continue collaborating through Horizon Europe.

Another important element of the relationship is the strong link between Ireland and the USA, meaning that our closest EU neighbour can be a bridge to two continents.

We are expecting further developments as work continues on our [Irish Sea Framework](#).

## Supporting SMEs

The Horizon Europe Unit has worked closely with the Welsh Government's Innovation Team to support the aims of the Innovation Strategy. For example, with support from Agile Cymru, Wales sent a delegation to the global Internet of Things event in May 2024 in Barcelona. This model may be replicated at future high profile events.

The Horizon Europe Unit meets SMEs to provide specialist advice on the programme; for example, carrying out mock interviews for applicants with the UK National Contact Point, helping their journey to a large grant award to Wales.

The Welsh Government is taking on the Enterprise Europe Network contract, meaning that it has access to that network, a good relationship with Innovate UK, and resources to help the internationalisation of innovation-intensive SMEs.

The Vanguard Initiative has also been an important route for international collaboration. The partners have launched a [joint fund](#) that will enable more organisations in the partner regions to undertake collaborative projects.

Alongside many other innovation funders around Europe, the Welsh Government is looking at cofunding schemes that use Horizon Europe funding alongside national funds to create international added value.

## Forward look

The Welsh Government remains committed to closer economic and research

ties with the EU and Horizon Europe is a key part of that. Supporting Welsh organisations to access Horizon Europe will help deliver both our Innovation Strategy and our International Strategy.

The key variables that we seek to influence are:

- Number of applications
- Quality of applications (success rate)
- Size of applications (funding requested)

Ultimately the responsibility for applying resides with the applicants, which for Horizon Europe means largely universities and innovative businesses. The capacity to apply will of course depend on a number of issues and the research and innovation ecosystem faces a number of challenges. Nevertheless, we will combine our efforts with those of the UK Government, UKRI, and our counterparts in Scotland and Northern Ireland.

At the Welsh level we now have the benefit of Global Wales, Taith, WIN, WHEB and EEN. The Welsh Government's Horizon Europe Unit will work closely with this ecosystem, co-ordinating and facilitating actions as needed. The principles of Agile Cymru will allow us to flow into the areas that need more support and avoid duplication where a good job is already being done by our partners.

Specifically the Horizon Europe Unit will continue to:

- Issue our regular newsletter (Horizon eNews)
- Maintain our unique **calls calendar**
- Meet with interested applicants to give general orientation and signpost to the right area of the programme
- Carry out in depth work with strategic stakeholders on engagement plans, including participation as an expert, and identifying calls
- Hold events with partners where there is a need and demand for a specific Welsh intervention



- Increase international links through the Welsh Government's overseas offices and Agile Cymru support
- Work with the Welsh Government's Innovation team to increase private sector take-up
- Work across Welsh Government to highlight how Horizon Europe can support policy priorities
- Liaise regularly with UK Government (DSIT and other departments where relevant) to influence UK initiatives and feed into UK positions to the EU
- Remain an active member of the UK National Contact Point Network
- Access EU data in order to understand Welsh participation patterns and to inform our actions and those of our partners
- Use Agile Cymru funding to support specific interventions that add value to existing support from the UK Government and others.

This report highlights evidence of various areas that could benefit from further focus:

- Collaborative applications, including those from universities
- Business applications
- Public sector applications
- Success rate for Pillar 1 (in particular MSCA fellowships) and the EIC Accelerator

We will therefore prioritise these areas for support where appropriate.

The FP10 debate is developing and covers issues that are relevant to Wales, not least the future openness to associated countries. Welsh Government will work with its partners to influence that debate where it can. However, we have a more immediate job to do on Horizon Europe. This is not a question of government action alone – we need every business and researcher be considering whether they can align themselves with EU policy, interact with the structures, apply to the calls.

There is room for optimism. Our absence from Horizon Europe in the early days has created enormous determination. There is a wide range of support available.

Wales, the other devolved nations and the UK are co-ordinating actions and working together in Brussels to reach out, and our international partners are listening.

## **Annex - How to get involved**

### **Identify opportunities**

There is a wide range of funding opportunities across different parts of the programme, destinations, and topic areas, and offering different action types. It's important to acquaint yourself with the Horizon Portal and scan for upcoming opportunities.

### **Start planning**

It's crucial that you start your preparation as early as possible. Before committing pen to paper thoroughly study the content of the published call as well as the introduction pages of the Work Programmes to see how your project fits with the wider context. Read all accompanying documentation, understanding the milestones and necessary timescales, and start planning!

### **Find partners**

Most calls are collaborative and require consortia of partners from different countries, industry, and academia. Invest time to develop diverse partnerships with the necessary blend of international representation and know-how;

achieving a gender balance within research teams is also beneficial.

## Register

Before applying for funding, all organisations (partners) involved in the project must first be registered with the European Commission.

## Develop your proposal

Having an excellent project idea is essential but there's an art to translating this into a successful proposal. Keep in mind that evaluators are required to consider several proposals in a limited time.

## Submit

The participant portal can run slowly near the deadline; upload your proposal on to the portal early and then update it as many times as needed until the deadline (remember the time difference).

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