

Senedd Cymru
Pwyllgor yr Economi, Masnach a Materion Gwledig
Ymchwil a Datblygu
RD13
Ymateb gan: Prifysgol Caerdydd

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Welsh Parliament
Economy, Trade, and Rural Affairs Committee
Research and Development
RD13
Evidence from: Cardiff University



1. What challenges are Welsh businesses facing in terms of awareness of, and access to, public research and development funding?

- 1.1 Wales, like the rest of the UK, is currently facing significant economic challenges. Cardiff University has a role as an anchor institution in supporting regional economic growth. In order to achieve this we work closely with a wide range of businesses in Wales and the SW of England.
- 1.2 Working with industry partners is one key route to generating positive impacts from research, benefiting the health, wealth and social fabric of the nation. In the Research Excellence Framework (REF) 2021 exercise the quality of Cardiff's research impact was independently judged to be the highest amongst all universities across the devolved nations of the UK (Northern Ireland, Scotland and Wales). In REF 2021 Impact Case Studies submitted by Welsh universities included 80 'academic-industry' partnerships, Accounting for 29% of all partnerships identified, demonstrating the significance and scale of this activity.¹
- 1.3 As well as this, bids to research and innovation funders are considerably strengthened and made more impactful when the business sector and universities work together. Across Cardiff University there are many examples of this. One element of the expertise that universities bring to these partnerships is significant experience in bid development and, by way of illustration, Cardiff University submitted R&D funding bids to a total value in excess of £600M in 2022-23.
- 1.4 Businesses which are neither strongly R&D active nor partnered with HEIs may not be aware of the current state of the art from a research perspective, or where the potential next big research discoveries and future technologies will emerge from. This is where research and innovation strengths of academia-industry collaboration have a strong part to play.
- 1.5 It is often mutually beneficial for businesses and academia to work together. It can be underappreciated that universities are passionate about their positive impacts on society and the economy more widely, and support for business is part of their mission.
- 1.6 Cardiff University secured a record £174m in external research grants and contracts in 2022/23 and we recognise that bids for external funding are usually enhanced and more successful when universities and businesses work together. To that end, we invest time and other resources in developing strategic partnerships with business and other external actors. It is our experience that developing a deeper understanding of the challenges and goals of partner organisations leads to mutual trust, stronger relationships and more effective collaboration. Like other universities, Cardiff University has staff dedicated to support its bidding activity and our industry partners can benefit from this resource and experience when we work together.
- 1.7 A notable success story is Cardiff University's participation in the flagship UKRI **Strength in Places Fund (SIPF)** programme which has facilitated closer collaboration between the higher education sector and industry. This collaboration has been particularly impactful in the Cardiff Capital Region (CCR), where Cardiff University has helped to found the compound semiconductor (CS) cluster

¹ Learned Society for Wales LSW commissioned report from King's College London '[The impacts of research from Welsh universities](#)', released 8th November 2023

CSconnected, comprising of organisations involved in research, development, innovation, and manufacturing of CS technologies. Cardiff University's leading role in the South Wales compound semiconductor cluster is referenced in a recent article by Economy Minister Vaughan Gething, outlining calls for two Welsh investment zones to drive economic growth and job creation².

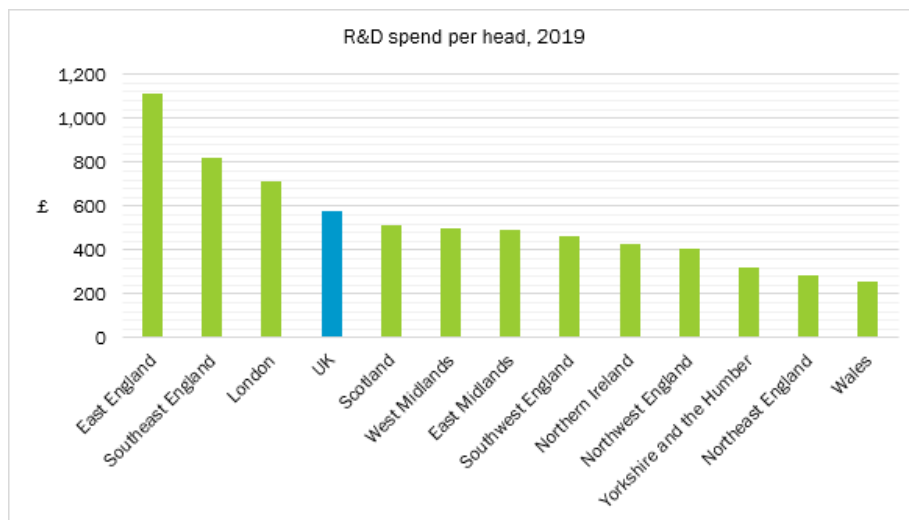
- 1.8 Similarly, **media.cymru** is also funded by the SIPF and has emerged as a catalyst for sustainable and inclusive economic growth in the Welsh media sector. In both cases, we are not only collaborating with numerous companies but also serving as an anchor institution at the heart of these clusters. Cardiff University is the lead organisation for both of these SIPF clusters supported by close to £50m of total investment from UKRI. This approach of supporting local ecosystems creates a strong link between universities and businesses and creates a longer-lasting economic growth.
- 1.9 Cardiff University has itself made significant financial contributions to support collaborations with external partners, including business partners. For instance, we have leveraged funding from the UK Research and Innovation (UKRI) **Impact Acceleration Accounts (IAAs)** to engage with external partners and co-create projects which will generate beneficial impacts. We have also utilised part of our HEFCW **Research Wales Innovation Fund (RWIF)** to finance initiatives such as Innovation for All (IAA) which provides pump-priming funding for proof of concept type activities with external partners.
- 1.10 The replacement of European Structural Funds with Shared Prosperity Funding has also created further challenges, most notably around the difficulty in bidding for research and innovation funding under the new policy. This is in part due to the aims of the new Funds, and also due to the more localised approach to bidding for funding. In order to maximise the ability to support research and innovation with this funding, we would recommend:
 - a. At least matching the level of regional investment funding Wales would have received under the next EU funding round;
 - b. Establishing a common framework³ to set the terms of co-operation between the four governments of the UK;
 - c. Not forcing regions and nations of the UK to choose between competing economic development initiatives;
 - d. Ring-fencing funds to build research and innovation capacity;
 - e. Making available the funds on a long-term basis (seven years as a minimum programme period).
- 1.11 We also note that there may be regional disparities in awareness and access to R&D funding opportunities, with businesses in urban areas being more informed and better connected than those in rural or economically disadvantaged regions. Shared Prosperity Funding (SPF) should, in theory, provide an opportunity for Welsh businesses to access funding to support R&D initiatives. Thus far it is unclear if businesses are proactively engaged in the bid process or if there is a clear route for industry to make inroads into these discussions about what would benefit the wider region.

² See: Western Mail, p22, 10/11/23 and South Wales Echo, p21, 10/11/23

³ For further information, see: Dougan, M. et al. (2020) [UK Internal Market Bill, Devolution and the Union](#), Edinburgh: Centre on Constitutional Change.

2. What differences are there between funding for universities and funding for industry innovation? Are there regional disparities in the allocation of funding?

2.1 Universities are more important for R&D in Wales compared to the UK as a whole; in the last twenty years, HE expenditure on research has twice overtaken the private sector in Wales (this has not happened at the UK level).^{4,5} Businesses had also divested from R&D to safeguard core functions during the pandemic.⁶ Recent evidence⁷ suggests the pandemic had disrupted universities' ability to collaborate with business; the impact is likely to be particularly acute in Wales where such collaboration is an essential component of the innovation ecosystem⁸. This combined fall in activity will be felt sharply; according to the latest public data on R&D in the UK, Wales already has the second lowest level of spending, lowest level per head and second-slowest growth in private expenditure.⁹



Graph: Research & Development spend per head by UK region / nation, 2019

2.2 The recently announced commitment to partnership working (MoU) between Innovate UK and Welsh Government is potentially a very positive move, given that Innovate UK's key role in supporting industry R&D and innovation. Cardiff University believes that there is an opportunity to strengthen schemes that bring together business and academia so that they can codevelop projects over time for mutual benefit and Innovate UK is a critical partner in this space.

2.3 We note the read across between this Collaborative Innovation Plan and the Welsh Government's priority sectors for the economy, both of which focus on areas of demonstrable strength and potential for growth. Sectors identified by the Welsh Government as priorities, which are referenced in the Plan, are:

- Digital Transformation
- Net Zero and Decarbonisation
- Agri-Tech, Food and Rural Economy

⁴ StatsWales (2020) [Research and development expenditure in Wales by expenditure type and year](#), Cardiff: Welsh Government.

⁵ ONS (2020) [Research and development expenditure](#), Newport: ONS.

⁶ National Centre for Universities and Business (2021) [Innovation and Resilience in a Crisis: the Impact of Covid-19 on Business R&D](#), London: NCUB.

⁷ Ulrichsen, T. (2021) [Innovating During a Crisis: the effects of the COVID-19 pandemic on how universities contribute to innovation](#), London: National Centre for Universities & Business.

⁸ Bristow, G. & Healy, A. (2020) [Evidence submitted to the Welsh Affairs Committee Inquiry into the impact of COVID-19 on the Welsh economy](#), UK Parliament website (accessed 7 February 2022).

⁹ ONS (2020) [Gross domestic expenditure on research and development, by region, UK](#), Newport: ONS.

- d. Creative Industries and Media
 - e. Health and Wellbeing
 - f. Materials and Manufacturing, including Compound Semiconductors.
- 2.4 However, the most significant barrier to reducing the disparity in innovation between regions is to raise the levels of research funding outside of the south-east of England. We believe that there is an opportunity to strengthen schemes that bring together business and academia so that they can co-develop projects over time for mutual benefit.
- 2.5 Cardiff University also notes the commitment to working with the Development Bank of Wales as an Innovate UK Investor Partner and believe a really positive outcome of this would be increased level of investment funding available as early-stage investment to support spin-out companies and start-ups working closely with the Welsh HE base.
- 2.6 It has long been recognised that Wales has an economy which is heavily reliant on the contributions made by small and medium-sized enterprises (SMEs). This is a major point of difference with some other parts of the UK and needs to be reflected in public policy. There is a need to develop business clusters, in which universities are anchor institutions. Our work with **CSCConnected** and **media.cymru** (see para 1.7 & 1.8) are cases in point.
- 2.7 Likewise, we would like to highlight the University's establishment of our **Hartree Centre SME Hub** in Cardiff. This initiative is building relationships with SMEs and supporting their growth by empowering them in adopting cutting-edge artificial intelligence (AI) technologies. The hub will support businesses with human-centric AI including recent developments in natural language processing such as ChatGPT, and AI applications such as cybersecurity, countering disinformation, optimisation, and visualisation. Importantly, IBM are a partner in this project.
- 2.8 There are two different sets of geographical disparities which should be explored. The first relates to disparities in funding within the United Kingdom, and the second relates to expenditure within Wales.
- 2.9 Wales has consistently received a disproportionately low share of UK-wide funding for research and innovation compared to the south-east of England and London. (We would also note that certain other areas of the UK have also received disproportionately low levels of funding). This sets shakier foundations for research and innovation. Against this context, we also note that, whilst universities across the UK face challenging economic circumstances, these are more significant in Wales due to:
- a. Lower levels of tuition fees which exacerbate the declining value of the tuition fee as a means of income. In particular, deciding to freeze fees in Wales when they were raised by £250 in England lead meant a potential loss of £22m in the Welsh sector in 2020-21,
 - b. Relatively lower levels of investment in Research Wales Innovation Fund (RWIF) compared to England's Higher Education Innovation Fund (HEIF). We note that the Reed Review's suggestion to raise RWIF to £25m has not been acted on.
 - c. The removal of European Funding in Wales and the manner of its replacement with more localised funding, which is much harder for universities to access in relation to research and innovation.
- 2.10 There may be regional disparities in funding allocation, with urban areas, particularly those near major research universities, having greater access to funding opportunities. These urban areas tend to have well-established innovation ecosystems. Likewise, regions with strong research and

innovation infrastructure, including technology parks, innovation hubs, and research clusters, may be able attract more funding and collaborative opportunities.

- 2.11 To address regional disparities, it is essential for policymakers to implement strategies that ensure equitable access to funding for industry innovation across all parts of Wales. This may involve targeted initiatives, outreach programs, and partnerships with universities to bridge the gap between academic research and industry innovation, particularly in rural or economically disadvantaged regions. Cardiff University believes that this work is best done in a collaborative manner.

3) Do the research interests of universities and industry differ and, if so, what actions can be taken and by who to ensure the interests of both sectors are catered for?

- 3.1 Industry has a need to deliver products and services on a profitable basis, and to innovate in developing new commercial offers. However, universities need to continue to carry out fundamental research, because it's impossible to predict what areas of research might result in the next generation of applied investigations and near-market technology developments.
- 3.1 Universities and their research and development capabilities and roles as 'honest brokers' have a role in underpinning local economic development and in attracting inward investment. **CSconnected** is an example of how Cardiff University has fulfilled this role.
- 3.2 Cardiff University has also delivered a range of R&D projects in conjunction with industry via the support of European Structural and Investment Funds, including **FLEXIS** (focused on flexible energy systems). Over the last five years FLEXIS' consortium of strategic partners – Cardiff University, Swansea University, The University of South Wales, Neath Port Talbot Borough Council and Tata Steel UK have worked together to successfully develop and create an energy systems research capability in Wales. This ambitious 5 year, £24M project has recruited 95 new researchers into Welsh universities and invested over £2.4M into research equipment and technology to aid current and future research. FLEXIS supported cluster development through collaboration with private and public sector research organisations and industry in Wales, throughout Europe, and worldwide, promoting the outcomes of Welsh research and supporting the graduate research engineers that are needed to make Wales one of the global leaders in energy research and driving forward net zero solutions to help achieve UK and global policy commitments.
- 3.2 We would also highlight Cardiff's involvement in the new **Place Based Impact Acceleration Accounts (PBIAAs)** scheme from the Engineering and Physical Sciences Research Council (EPSRC), part of UKRI. The PBIAAs are intended to bring together the UK's leading engineering and physical science research teams to support established research and innovation clusters to expand and also help to develop emerging clusters. Cardiff University is a partner on three of the ten projects to receive funding, and will contribute its research expertise to enable growth of the South Wales Compound Semiconductor cluster as well as playing key roles in low carbon projects that will lead to green hydrogen as an energy source and in the development of net zero buildings.
- 3.3 Whilst the research interests of universities and industry may differ both sectors share the overarching goal of driving innovation and addressing real-world challenges. There is significant potential for alignment and collaboration to bridge the gap.

- 3.4 It is also worth noting that universities often engage in fundamental research, driven by a pursuit of knowledge and the advancement of academic disciplines. As a result of this, university research may have a longer time horizon and emphasises curiosity-driven inquiries and theoretical studies. In contrast, industry focuses on applied R&D aimed at solving real-world problems and fostering innovation in products, processes, and services. These approaches complement each other in the broader research landscape. There is mutual recognition that universities operate at a more fundamental research space (at a lower Technology Readiness Level, TRL) whilst businesses are active in the market and therefore by definition carry out near-market R&D.
- 3.5 Industry typically operates on shorter timeframes, with a focus on achieving tangible outcomes and return on investment, is often market-driven, with a strong emphasis on meeting customer needs and gaining a competitive edge.
- 3.6 Public investment in R&D helps to leverage significant private sector investment. UK Government analysis indicates that an additional £1 of public spending in R&D gives rise to an increase in private R&D funding of £1.36 over a ten-year period.¹⁰ According to the latest public data^{11,12,13}, Wales has the second lowest level of overall R&D spending, the lowest level per head and second-lowest growth in private R&D expenditure among comparable UK nations and regions. A 2020 report calculated that imbalances in R&D spending means that Wales is missing out on £420m on public R&D investment and a substantial private sector multiplier.¹⁴
- 3.7 Cardiff University facilitates collaboration between higher education and industry through joint research projects, partnerships and knowledge exchange. For example:
- a. Cardiff University has a **Business Engagement and Partnerships** team which sits within its Research and Innovation Services department, facilitating and developing relationships with external partners across a range of opportunities including consultancy, contract research, Knowledge Transfer Partnerships and large scale/place based collaborative innovation activities.
 - b. **Cardiff Medicentre** is a Cardiff University operated business incubation facility for biotech, healthcare, and medical technology businesses. It is a Joint Venture between the University and the Cardiff & Vale University Health Board, jointly steered by senior representatives of both organizations. Based at the Heath Park campus in Cardiff, Medicentre provides a strategic location for innovation-driven companies to develop collaborative relationships across both partner institutions. Medicentre tenants include Cardiff University life science spin-out companies, businesses with Knowledge Transfer Partnership and high-growth businesses using licenses for university technology; current tenants include Cellesce, Alesi Surgical, and Antiverse.
 - c. **Cardiff Innovations** is the University's second business incubator, which represents the business acceleration element of **SETsquared Cardiff**. Occupying half of the state-of-the-art

¹⁰ Economic Insight (2015) [What is the relationship between public and private investment in science, research and innovation?: a report commissioned by the Department for Business, Innovation and Skills](#), London: UK Government.

¹¹ Office for National Statistics (2020) [Gross domestic expenditure on research and development, by region: UK](#), Newport: Office for National Statistics.

¹² Rhodes, C., Hutton, G. & Ward, M. (2020) [Research Briefing: research and development spending](#), London: UK Parliament.

¹³ Welsh Government. (2020) [Research and development business enterprise expenditure: 2019](#), Cardiff: Welsh Government.

¹⁴ Forth, T. & Jones, R. (2020) [The Missing £4 Billion: making R&D work for the whole UK](#), London: Nesta, p7.

sbarc|spark building, Cardiff Innovations is situated on the University's Innovation Campus directly adjacent to the Cardiff University Brain Research Imaging Centre (CUBRIC) and the **Translational Research Hub**, home to researchers in the Institute for Compound Semiconductors (ICS) and Cardiff Catalysis Institute (CCI). Cardiff Innovations also provides a space for innovation-driven businesses. Since opening in March 2022, several exciting start-ups and SMEs have joined the incubation community. It has also attracted regional anchor tenants such as the Cyber Innovation Hub, a Welsh Government / Cardiff Capital Region funded project to accelerate cyber start-ups and spinouts. The incubator is also home to the Cardiff Capital Region City Deal team, a significant actor in regional innovation.

- d. Researchers in the **Cardiff Business School**, worked with a range of partner companies to develop new forecasting, inventory control and production planning policies that helped companies streamline their business performance. One example involved St Asaph-based SME, Qioptiq. The initial engagement with Cardiff University led to a Knowledge Transfer Partnership. The allowed Cardiff University knowledge and expertise to be embedded in the company and subsequently enabled Qioptiq to secure an £82M contract with the Ministry of Defence, securing existing jobs and creating new ones.
 - e. Researchers in Cardiff University's **School of Engineering** have developed expertise and understanding of electrical networks under fault conditions, optimising network reliability and surge overvoltage protection. In addition to driving national and international standards for overvoltage protection, the team worked with Tata Steels' Port talbot steelworks to address flashover events at a local electricity substation. These events resulted in either local circuit interruptions or a total blackout, forcing emergency shutdown of the steelworks and significant economic loss. Cardiff University proposed an intervention which was manufactured by a local business and which eliminated the flashover events. Tata Steel calculated savings to them of approximately £10M as a result.
 - f. Improving the energy performance of buildings is seen as a key element in decarbonising the built environment. Expertise in **Building Information Modelling** in Cardiff University's School of Engineering has been deployed in collaboration with companies across the UK and further afield, including Dwr Cymru Welsh Water. In addition to the benefits realised by those companies. The underpinning technology and expertise formed the basis of a University spin-out company – Optimise AI.
- 3.8 It is important to note that the UK Government's independent review of university spin-outs, which is yet to report, may also alter the policy landscape in this space.

4) How can universities and businesses better interact and collaborate with each other?

- 4.1 Improving interaction and collaboration between universities and businesses is essential for driving R&D in Wales. At Cardiff University we are committed to generating beneficial impacts from our research and we have dedicated teams to support this (**Business Engagement & Partnerships** and **Research Commercialisation & Impact**), working on promoting links between the university and industry, public and third sectors.
- 4.2 However, universities have financial constraints and we are already heavily cross-subsidising our research activities. UK sectoral level data indicates a cross-subsidy of circa £5 Billion pa from

educational activity into research¹⁵. Much of the university's support activity for businesses is in-kind (i.e. staff time) but it is heavily constrained by resources. This is unsustainable at a time when teaching activity itself is under financial pressures, with the funding level for undergraduate tuition resulting in a financial deficit associated with every student. Wider re-consideration of the higher-education funding model is required in order to address this.

- 4.3 A specific case in point is Cardiff University's Technology Transfer Office. It is responsible for around 80% of commercialisation income to the higher education sector in Wales, and is currently running at full capacity.
- 4.4 From this experience of working with industry, we would recommend that collaboration between universities and businesses (especially SMEs) contain practical tools to address these real world challenges. These would include both research funders, universities and governments promoting actions such as:
 - a. Developing internship and work placement programs that allow students to gain practical experience within businesses.
 - b. Establishing a wide range of joint funding mechanisms that encourage universities and businesses to co-invest in R&D projects, building on SMART in Wales and work by Innovate UK.
 - c. Strengthening the capacity of technology transfer offices within universities to facilitate the transfer of intellectual property, patents, and research findings to businesses.
 - d. Creating industry advisory boards for academic programs and research centres.
- 4.5 Our **Data Innovation Accelerator** has worked with a wide range of SMEs on using data science. One example is its work with the company Sustainable Energy which was established in 1998 in Cardiff as a consultancy specialising in the assessment and development of low and zero carbon energy projects. Sustainable Energy has now broadened its commercial offering and developed an innovative energy network monitoring service to offer its clients as a result of a collaboration research and development project with the DIA.

5) **How effective is Welsh Government's Innovation Strategy likely to be in supporting research, development and innovation in Wales?**

- 5.1 When *Wales Innovates* was initially launched, Cardiff University feedback was that the strategy needed a short term ambition to achieve two things: firstly, to consolidate specific priorities in the strategy with targeted funding and investment, that built on success and potential for impact where HE can drive forward impact and develop an eco-system; and secondly, to further seed-corn areas that are starting to emerge as strategically important, so that teams and collaborations are able to develop plans, bids and collaborations for the future.
- 5.2 We also noted that, in the medium term, the strategy should actively seek to accelerate areas of capacity and strategic potential, aligned to leveraging investment from UK sources and inward investment through public, private and HE collaboration. It is pleasing to note that this goal has been addressed at least in part through the Welsh Govt establishing its Collaborative Innovation Plan (MoU) with Innovate UK, as referenced earlier in this response, with the potential to link Welsh Government research priorities with funding administered from outwith the devolved sphere. As this is a significant source of research and innovation income for Welsh universities,

¹⁵ Smith, Mark (2023) "[We can't support everything with cross-subsidy](#)" on Wonkhe, accessed 13/11/2023

including Cardiff University, we believe this collaborative approach will benefit Welsh research and innovation.

- 5.3 Additionally, we were pleased to see a number of other inclusions within this the Collaborative Innovation Plan. This includes a focus on Place and on Levelling-Up. These are emerging areas of research and innovation and can have a real impact in producing innovation, as well as delivering on Cardiff University's wider civic mission.
- 5.4 Cardiff University reacted positively to the release of the delivery plan for *Wales Innovates* which provides more detail on the focus of Welsh Government's own policy in this space. We are pleased to see that there is joined-up working on Welsh Government's own policy and how this would interact with UK-wide funds.
- 5.5 The delivery plan provides additional detail around the outcome measures for the Welsh Government's priorities, which addresses a major gap in the original strategy that needed to be filled.
- 5.6 The identification of four missions, namely Education, Economy, Health and wellbeing, and Climate and nature, represents progress. Whilst these remain broad in application, they do represent a prioritisation. We acknowledge that the four missions now each contain a series of goals, as well as supporting actions and milestones. This is a significant step forward in comparison with the original strategy.
- 5.7 However, there are three further areas where we feel further support could ensure a more effective implementation of the *Wales Innovates* Delivery Plan:
 - 5.8 Firstly, we are concerned that there is no additional funding available for supporting innovation in Wales. Whilst we understand the wider fiscal context within which the Welsh Government is operating, we would note that some commitments within the Reid Review were not delivered, and also that Welsh Government has committed to opening up research and innovation funding to other bodies, such as FE colleges and health boards. Doing so whilst keeping the available funding at current levels will spread the relevant funding more thinly and potentially lead to reduced outcomes. This would be especially relevant given the historically lower levels of expenditure on innovation in Wales.
 - 5.9 Fundamentally, the biggest single challenge that the Welsh higher education sector faces in relation to research and development is the limited availability of funds, along with the reliance on cross-subsidy of research from elsewhere within the sector's resources. This is not addressed in this delivery plan.
 - 5.10 Secondly, we note that this strategy and the wider UK Government plans for innovation and research do not fully align with each other. The UK Government's very clear focus on STEMM and on high-growth sectors gives a strong indication of where universities should concentrate their innovation investment, even if this sometimes has to come at the expense of other areas. *Wales Innovates* and its delivery plan set out a much broader set of priorities, some of which align with UK Government's but many of which do not. This is an entirely reasonable outcome given the different political leanings of the two Governments, but can sometimes leave innovators and researchers being stuck in the middle. We would recommend that there is further clarity on prioritisation within Welsh innovation, and also further work to provide clearer links between Welsh institutions and UK-based funders, similar to the Collaborative Innovation Plan with Innovate UK.

5.11 Thirdly Cardiff University believes that *Wales Innovates*, its delivery plan, and the Collaborative Action Plan should be considered “live” documents. They could then be updated more frequently and have an ethos of refinement and agility, reflecting on both the successes and lessons learnt, and supported by benchmarking. As well as open consultations, Cardiff University would very much welcome mechanisms, formally or informally, through which we can maintain more regular dialogue to share observations on the innovation landscape. Cardiff University’s activity in this area is significant, with national and international connectivity that is of high value to Wales. Cardiff University has a live portfolio of over £600 million of research and innovation contracts, while representing 58% of the HE sector in Wales¹. The impact of Cardiff’s research and innovation has been independently benchmarked as 1st (measured by performance in the Research Excellence Framework) across devolved nations², with a large submission (120 impact cases) each articulating how innovation has taken hold. In 2020-21 Cardiff University contributed £3.678bn to the UK economy, generating £6.40 for every £1 spent. Additionally, we have active research concerning innovation policy and the positioning of Wales. We would welcome further opportunities to co-create with Welsh Government in a think-tank environment aligned to a long-term (5+ year) view, in conjunction with other key stakeholders.

6) Progress made in respect of the Welsh Government response to the Fifth Senedd report on ‘Research and Innovation in Wales’.

6.1 There were a large number of recommendations under the Economy, Infrastructure and Skills Committee report 'Research and Innovation in Wales' (April 2019) and so we will be selective in our response.

6.2 Recommendation 2 emphasised the need for the Welsh Government to collaborate with stakeholders, including Further Education, to establish and communicate a comprehensive vision for research and innovation in Wales. We feel this recommendation has been addressed through the establishment of the Commission for Tertiary Education and Research and delivery of *Wales Innovates* and its Delivery Plan.

6.3 Recommendation 4 called for the Welsh Government to safeguard and incorporate the Haldane Principle and Dual Funding System within the the Tertiary Education and Research Bill (now and Act) similar to their inclusion in the UK Higher Education and Research Act 2017. Encouragingly, there appears to be positive progress in this regard. As an institution, we recognise the value of Quality-Related (QR) funding, which is a crucial component of the Dual Support system, which supports a balance of core and quality-related research funding, are fundamental to sustaining research excellence in universities. Cardiff University benefits from QR funding, owing to our research excellence as recognised in REF 2021 and we believe it is indispensable in fostering research excellence, promoting innovation, and sustaining a thriving research ecosystem within higher education. It enables institutions, such as Cardiff University, to invest in groundbreaking research projects, support early-career researchers, and enhance the research infrastructure, all of which contribute to maintaining our position as a leader in research and innovation.

6.4 Recommendation 9 supported HEFCW’s aim to reinstate Innovation & Engagement Funding, stating that the Welsh Government should provide full funding as a matter of urgency. Cardiff University is highly appreciative of the Research Wales Innovation Fund RWIF, which has quickly become THE essential element of knowledge exchange and innovation support in the Welsh HE sector. RWIF needs to remain in place as a permanent commitment in order to provide stability for knowledge exchange activities, allowing universities to retain capacity and experienced staff. The Reid Review recommended an increase in budget for RWIF from £15m to £25m across the

sector in Wales and we wholly endorse that view, in order to ensure Welsh research and innovation can compete with that in England.

- 6.5 As an example of the benefits accruing from this funding stream, Cardiff University has used RWIF resources to support both of its successful bids to the UKRI Strength in Places Fund, as a result securing almost £50m into Wales from UKRI. This level of success is unprecedented across the UK and Cardiff University is the only organisation in the UK to lead more than one SIFP award.