



THE LEARNED SOCIETY OF WALES CYMDEITHAS DDYSGEDIG CYMRU

Submission from The Learned Society of Wales

The Learned Society of Wales / Cymdeithas Ddysgedig Cymru (LSW) celebrates and encourages excellence in all of the scholarly disciplines. The LSW is an independent source of expert scholarly advice and commentary on matters affecting the wellbeing of Wales and its people. The Society draws upon the expertise of nearly 500 distinguished Fellows based in Wales, the UK and beyond.

1. General Comments

- 1.1. As Wales' national academy, the Learned Society of Wales welcomes the opportunity to respond to Economy, Infrastructure and Skills Committee's short inquiry into Research and Innovation in Wales.
- 1.2. The Society welcomes the commitment of the UK Government to increase R&D spending in the UK to 2.4% of GDP by 2027 with a future target of 3%. It is notable, however, that gross Expenditure on Research and Development (GERD) in Wales is lower than the UK average, at just 1.05% of GDP.¹
- 1.3. Thus, it is vital that Wales grows its share of the UK's R&D spend, both public and private. The Welsh Government should be proactive in this respect, and we comment further below.

2. Research Funding and 'Challenge-led' Enquiry

- 2.1. The position of the Society on curiosity-driven research remains unaltered from that enunciated by our Inaugural President². We stress that research must be viewed from a cultural, as well as a utilitarian, standpoint and that its international nature and value should be recognised and embraced, both for short- and long-term societal benefits. The latter in particular are almost impossible to predict.
- 2.2. Thus, the Society welcomes the affirmation of the Haldane principle (that decisions on which research is funded should be made by researchers, not politicians) in the UKRI Strategic Prospectus. The concept is well respected and is fundamental to the health, diversity and breadth of the research ecosystem, and helps to prevent an over-focus on areas that are considered to be of strategic or economic importance at a particular time. We would expect that future Welsh government research funding policy to also align with this concept.
- 2.3. The Society notes the importance of supporting academic activities that may have a positive impact on the economy. It is vital that impact is tied to the quality of research and takes account of the economic benefit it provides.
- 2.4. The QR fund is the key underpinning driver of international quality research, as is well recognised by the Welsh Government's Diamond and Reid reviews. It is part of the crucial 'dual support' system enabling Wales to win grant support from the UK and European Research Councils. In the past, researchers have gained large funding for Wales from the EU, and in future more effort will be directed towards programmes such as City and Rural Deals and Industrial Challenges. The Reid Review recognises the need to increase research capacity in Wales and makes important recommendations about how this can be achieved. It is vital that Wales improves its access to UK-level research funding, particularly when EU funding is reduced or replaced. Continuation of the

¹ The data herein are taken from the Scottish Government's Office of Statistics.

² <https://www.learnedsociety.wales/our-publications/curiosity-driven-blue-sky-research-a-threatened-vital-activity-2/>

successful Sêr Cymru programme will be particularly important in developing new areas of strength for the future.

- 2.5. The Society agrees with the Welsh Government's proposal that there needs to be an increase in research intended to help solve specific challenges facing Wales. There is currently a good balance of curiosity driven work and 'challenge' driven activity in Wales, however the research funding landscape of the UK is changing. The UKRI 'challenge-led' research funds reflect the unbalanced research context of the wider UK, and Wales faces significant challenges not currently supported by these funding opportunities. This Wales-focused challenge fund should be made up of additional funds, and not be a re-alignment of the QR budget. Research and Innovation funding is vital to the delivery of the goals of the Well-being of Future Generations Act (2015).

3. Research Spending in Wales

- 3.1. Here we comment of the balance between the HERD (Higher Education R&D) and BERD (Business Enterprise R&D) contributions to GERD.
- 3.2. In 2016 in Wales, HERD was £266m and constituted 0.39% of GDP. For comparison, average HERD spending across the UK was 0.41% of GDP. We note that HERD in Scotland was £1.061bn, which constituted 0.71% of Scottish GDP and placed Scotland ahead of every other UK country or region.
- 3.3. BERD is also relatively weak in Wales when compared to other areas of the UK. In 2016, BERD investment was £435m, amounting to 0.64% of Welsh GDP. Wales is placed 9th out of the 12 UK countries and regions, with the average across the whole of the UK amounting to 1.12% of GDP.
- 3.4. Both measures of investment give concern for the overall level of activity in Wales.
- 3.5. In the last decade, Welsh universities have accounted for between 40-50% of all R&D investment in Wales, thus playing a major role in developing research and skills capacity for the nation.
- 3.6. BERD investment in Wales is over 60% higher than the HERD spend, and the Society does not believe that there is a substantial risk of the Research and Innovation interests of the HE sector 'overshadowing' the interests of business.

4. Wider Benefits of Research

- 4.1. While the distribution of research funding is of significant importance, the Society also stresses the point that research, and how it is resourced, must be viewed from a cultural, as well as utilitarian, standpoint. International quality research is highly competitive and requires outstanding people to garner resources and generate output. Such activity not only creates jobs and benefits the economy, but also contributes to our culture and quality of life.
- 4.2. Additionally, the education of foreign nationals in Wales lays the groundwork for potential soft power benefits. Soft power is a significant contributor to the Wales' influence on the international stage.

5. Innovation and Entrepreneurship in Universities

- 5.1. Innovation is complementary to research and can come from a myriad of directions including from higher and further education, schools, public service, business and social groups. Wales needs to build cultures of innovation right through society to ensure that ideas can be capitalised upon when clearly beneficial.
- 5.2. There is a significant amount of high-quality Research and Innovation taking place in Welsh universities, yet the money invested often struggles to make its way through to business and the

wider economy. A mix of business and academic knowledge, combined with compelling incentives is required to create new business. It is vital that innovation be encouraged in a climate that fosters and rewards development.

- 5.3. Most Welsh Universities have Employability Academies (or something similar), frequently in partnership with external organisations. These may offer work placements and support for student start-up companies. More analysis is needed of the efficacy of these efforts, and whether a more co-ordinated approach may be more beneficial.

6. Businesses and Universities Working in Partnership

- 6.1. In Wales innovation is often supported by government and typically involves both industry and educational establishments. Examples include the Compound Semiconductor Connected Cluster³, Aberystwyth's Innovation and Enterprise campus⁴, Bangor University's initiative at the Menai Science Park⁵ and the Active Building Centre at Swansea⁶. Creativity and innovation is also much in evidence in the Arts and Humanities, with the recent announcement of the Clwstwr Creadigol⁷. There is likely to be much more activity here as City Deals and Industrial Challenge programmes develop. Business/HE partnerships tend to develop where there are clear advantages for all participants, and we find no evidence of the 'overshadowing' effect mentioned in the enquiry terms of reference.
- 6.2. In his recent review of Research and Innovation in Wales⁸, Prof Reid recommended to the Welsh Government the creation of "a single overarching brand for its innovation activities", with substantial and growing annual funding. In the view of the LSW, this is a very positive and progressive suggestion that will benefit Wales, and as such it merits support by government.
- 6.3. As stated in the Society's response to the recent technical consultation on "[Public Good and a Prosperous Wales: the next steps](#)", there needs to be complete clarity about the boundaries of responsibilities between the new Research and Innovation Wales committee and the business support side of government.
- 6.4. The UKRI's Industrial Strategy Challenge has a number of funds that encourage collaboration between businesses (including SMEs), HEIs and RTOs; given the small scale of research activity in Wales, incentivised collaboration could maximise research returns and provide investment to develop Research and Innovation capacity in the SME sector.

³ This is comprised of the Institute of Compound Semiconductors, the Compound Semiconductor Centre and the Centre for Integrative Semiconductor Materials and is a joint industry/academe enterprise between IQE, SPTS Technologies, Newport Wafer Fab, MicroSemi, and Cardiff and Swansea Universities

⁴ <https://www.aberinnovation.com/>

⁵ <http://www.m-sparc.com/>

⁶ 19th September 2018 see: specific.eu.com/chancellor-of-the-exchequer-announces-36-million-uk-funding-for-swansea-university-clean-energy-innovation/

⁷ <https://www.cardiff.ac.uk/news/view/1272850-major-investment-into-welsh-creative-industries-announced>

⁸ <https://gov.wales/topics/science-and-technology/science/reid-review/?lang=en>