

**National Assembly for Wales**  
Enterprise and Business Committee

Horizon 2020: Stage 1 Report  
July 2012



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## Enterprise and Business Committee

The Committee was established on 22 June 2011 with a remit to examine legislation and hold the Welsh Government to account by scrutinising its expenditure, administration and policy, encompassing economic development; transport and infrastructure; employment; higher education and skills; and research and development, including technology and science.

### Current Committee membership



**Nick Ramsay (Chair)**  
Welsh Conservatives  
Monmouth



**Byron Davies**  
Welsh Conservatives  
South Wales West



**Keith Davies**  
Welsh Labour  
Llanelli



**Julie James**  
Welsh Labour  
Swansea West



**Alun Ffred Jones**  
Plaid Cymru  
Afon



**Eluned Parrott**  
Welsh Liberal Democrats  
South Wales Central



**David Rees**  
Welsh Labour  
Aberavon



**Ken Skates**  
Welsh Labour  
Clwyd South



**Joyce Watson**  
Welsh Labour  
Mid and West Wales



**Leanne Wood**  
Plaid Cymru  
South Wales Central

## 1. Introduction

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1. During June 2012, the Enterprise and Business Committee of the National Assembly for Wales launched an inquiry into the European Commission's legislative proposals for Horizon 2020.
2. Horizon 2020 is the European Union's research and innovation programme to succeed the current Framework Seven Research Programme (FP7). The final legislation will provide the framework into which Welsh universities, research centres and businesses will have to bid to secure EU research funding from 2014-2020.
3. The aim of our inquiry was to assess the opportunities and challenges for Wales from the draft proposals, particularly the synergies between Horizon 2020 and future European Union Structural Funds programmes. We also considered the extent to which the Science for Wales strategy and other Welsh Government strategies focus on encouraging and supporting participation in those EU programmes.
4. We listened to the views of the UK Research Office (UKRO), Higher Education Wales, Higher Education Funding Council for Wales, Welsh Higher Education Brussels, Chief Scientific Adviser for Wales, Welsh Government officials, the European Commission's Directorate General of Regional Policy, Conference of Peripheral and Maritime Regions, Climate-Knowledge Innovation Community Regions and Cardiff University.
5. As part of our inquiry we visited Glyndŵr University in Wrexham to meet the Vice Chancellor and senior staff from the university's Advanced Composite Training and Development Centre in Broughton and from OpTic in St Asaph. This gave us valuable insight into how the university is engaging with major industries and with businesses in the local area as well as from further afield, and how it is collaborating with other universities to access funding for applied research and development.
6. We also received written evidence from Aberystwyth University, ADS/Aerospace Wales, GeoLang Ltd, Pembrokeshire County Council, and the Welsh Local Government Association.

7. This interim report is the culmination of the first stage of our inquiry. Most of our recommendations are directed at the Welsh Government, although it may need to pursue some of our recommendations through the UK Government's voice in the European Council. We aim to take further evidence on Horizon 2020 during the autumn term, and will publish a stage two report in due course.

## Main conclusions

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### General principles

8. In accord with many of our witnesses, we are generally supportive of the Horizon 2020 proposals. We believe they present a significant challenge, but also an important opportunity, for increasing the competitiveness of the higher education sector in Wales, and for strengthening engagement between higher education and business, both internationally and at home.

9. We also see Horizon 2020 (closely linked to the future EU Structural Funds) as the catalyst for Welsh Government, higher education and business to work together to build the critical mass for research and innovation to help transform the Welsh economy for the longer term.

10. We welcome the commitment throughout the Horizon 2020 proposals to focus on excellent research and innovation. We also support the new design of the proposals around the three pillars of excellence in research, industrial leadership and societal challenges, which appears to be in line with the “grand challenge” approach of the Science for Wales strategy.

11. Our inquiry revealed that there was strong support for several other features of the Horizon 2020 programme, including:

- the increase in funding and profile of the European Research Council;
- the strong emphasis on supporting innovation across the whole Research and Development chain; and
- the focus on a multi-disciplinary based approach to research in the societal challenges.

12. Witnesses from the higher education sector were very supportive of protecting or even increasing the proposed budget for Horizon 2020. Several witnesses to the inquiry also welcomed the Commission’s intention to simplify the application process for Horizon 2020. We therefore support those changes that will lead to a reduction in the time and costs involved in submitting applications for funding, and which will help to remove potential barriers to participation by businesses, small and medium-sized enterprises (SMEs) in particular.

13. However, we do share some of the concerns expressed in the evidence about the proposals, including in particular the reduction of the budget for Marie Curie Actions in 2014. The Marie Curie Actions research fellowship programme is a set of mobility research grant schemes that fund pre- and post-doctoral researchers in Europe as well as experienced researchers.

14. Currently around 19 per cent of the Welsh participations (49 out of 264) and 15 per cent (€12.7m) of the Framework Research Programme (FP7) funding secured by Welsh organisations comes from the Marie Curie Actions, which is higher than the European Union average (14 per cent and 10 per cent respectively). In its evidence, the Welsh higher education sector described this programme as “a key driver for strengthening the science base in Wales by attracting high calibre international researchers, as well as delivering innovative training programmes and placements for young researchers”.

15. We would like to see the Horizon 2020 proposals amended to maintain the Marie Curie Actions budget for 2014, and we would ask the Welsh MEPs to assist in pursuing amendments within the European Parliament to address this.

**The Welsh Government should, through the UK Government’s voice in Council, seek an amendment to the Horizon 2020 draft proposals so that the Marie Curie Actions budget for 2014 is at least the same as for 2013.**

16. We asked witnesses whether research in the social sciences, arts and humanities fields could be disadvantaged because the Horizon 2020 proposals place primary emphasis on “science”. Those fields have great importance for knowledge exchange with other disciplines and some can be economic drivers in their own right. It was interesting to hear from our visit to Glyndŵr University how it aimed to bring different disciplines together in their thinking and methodology under the Faculty of Arts, Science and Technology.

**The Welsh Government should seek clarity on how research in the social sciences, arts and humanities will be supported by EU proposals, and how they sit within Horizon 2020 in particular.**

17. We would also welcome further efforts to profile and map the regional dimension of participation in the EU Framework Research programme. We therefore look forward to the outcome of the AMCER Project (Advanced Monitoring and Coordination of EU R&D Policies at Regional Level) led by the Conference of Peripheral and Maritime Regions (CPMR), and its recommendations for how this can be addressed by the European Commission.

18. In addition to this issue, we were informed by witnesses that information on the total number of applications submitted to FP7 is not currently made available at a Member State or sub-state level, which makes it difficult for the Welsh Government and Welsh stakeholders to benchmark their success rate against applications made by other parts of Europe.

**The European Commission should be encouraged to publish profiles showing the regional breakdowns of applications to, and successful projects funded from, the Framework Research Programme (FP7) and Horizon 2020.**

19. We note that the Welsh Government has made written and oral statements about European Commission proposals for a number of key EU funding streams, such as the EU Structural Funds proposals, the reform of the Common Agricultural Policy and the Common Fisheries Policy. However, the Welsh Government has not issued a statement to date on its position on the Horizon 2020 proposals.

**In response to the conclusions and recommendations of our report, the Welsh Government should publish a statement that sets out its position on the Horizon 2020 proposals. We urge Welsh Ministers to advocate its position with the UK Government and through the European Parliament.**

### **Wales's performance in the EU Framework Research Programme**

20. We recognise that there are examples of excellent initiatives involving Welsh higher education institutions and businesses in the EU Framework Research Programme (FP7, the precursor to Horizon 2020). Yet there is clear recognition by the Welsh higher education sector and the Welsh Government that Wales is “under performing” in securing funding from FP7. Under the 2007-2013 FP7 Wales secured €84

million of funding, which represented just 2.26 per cent of the total UK share; in comparison, Scotland secured 9.4 per cent.

21. We heard a number of explanations for this under performance. One of the main factors, cited by the Higher Education Funding Council for Wales, was the lower share of scientists, technologists, engineers and mathematicians per head of population compared with other parts of the UK.

22. The complexity and costs associated with the application process and the challenges in establishing transnational partnerships were also cited as potential disincentives to participation. Lack of capacity and the need for additional support to help overcome the barriers to participation were also highlighted.

23. The Chief Scientific Adviser for Wales described the need to be “streetwise” in accessing funding for Wales under the new European programmes. We agree with witnesses that Wales’s performance in this area could and should improve, a conclusion also drawn by the European and External Affairs Committee during the Third Assembly. We believe that industry in particular needs to increase its share of the funding.

### **Actions to address under performance**

24. We heard from the Welsh higher education sector about the actions it was taking to improve participation in FP7, such as setting up four groups to focus on the research priorities of health and biosciences, low carbon, digital economy and advanced manufacturing, and coordinating participation by Welsh higher education institutions in the last call for FP7.

25. We were told that support already exists in Welsh universities to help academics with the preparation, submission and management of external funding projects, including EU research programmes. This was certainly apparent from our visit to Glyndŵr University. While this approach looks interesting on paper, the true measure of its success will be the impact it has on winning applications to FP7 and Horizon 2020, and the engagement of academics in excellent European partnerships and networks.

**The Welsh higher education sector should provide information on the levels of participation in the 2013 call under FP7, which will provide the first opportunity to assess whether dedicated support for drafting and submitting funding bids is bearing fruit.**

26. We heard from the Welsh Government how it has developed the Science for Wales strategy as a response to addressing some of the structural weaknesses within science in Wales, with the overall aim of building a “strong and dynamic science base that supports the economic and national development of Wales.” This includes a target for increasing the Welsh share of UK Research Council funding from 3.3 per cent to 5 per cent. The Chief Scientific Adviser stated in his evidence that to arrive at that target meant “increasing our percentage return from Europe” under FP7 and Horizon 2020.

27. By attracting “world class scientists” to Wales within these fields (the first element of the Welsh Government’s new Sêr Cymru programme) and by establishing three National Research Networks focused on each of the “grand challenges” (the second element of Sêr Cymru), the Welsh Government believes it will be better placed to develop excellence, increase the quality and quantity of research capability, and so improve the competitiveness of Welsh higher education institutions to secure national and EU research funding. We welcome the Welsh Government’s actions, although we would like to see how are integrated with other initiatives in this area.

**The higher education sector should clarify how its approach in focusing on four research groups will work effectively with the focus on three “grand challenges” in the Welsh Government’s Science for Wales strategy.**

28. Dr Adrian Healy from Cardiff University drew to our attention the potential scope for support under the Marie Curie CoFund Initiative of FP7 for new and existing regional and national fellowship programmes for research training and career development. He noted that this fund required coordinated action within a region or Member State and that Wales has not so far sought to participate in this initiative. This appears to us particularly relevant to supporting the aims and implementation of the Sêr Cymru scheme.

**The Welsh Government should, in discussion with the Welsh higher education sector, explore the potential for developing a CoFund Initiative under Horizon 2020 for continuous professional development of academic staff.**

### **Synergies between Horizon 2020 and future Structural Funds programmes**

29. We heard during this inquiry that actions are being taken at EU level to address regional imbalances in research performance. For 2014-2020 the European Commission has proposed that the primary instrument for addressing regional imbalances will be the EU Structural Funds, and that underpinning this approach will be a much stronger emphasis on complementarity or “synergies” between Horizon 2020 and EU Structural Funds.

30. The European Parliament has also advocated greater synergies between the two funding streams and has promoted the concept of “stairways to excellence”, with a focus on developing research capacity as the basis for creating regional “excellence”.

31. In our 2012 report on the Draft Legislative Proposals for EU Structural Funds 2014-2020, we supported giving stronger priority in future programmes to supporting research and innovation. We believe that Wales needs to capitalise on achieving synergies between the two programmes, particularly in light of its underperformance in FP7 (described in paragraph 20 above).

32. We also urge the Welsh Government to look in detail at the practical challenges of complementing Horizon 2020 and Structural Funds that were raised by some of the local authority contributors to our inquiry, to ensure they do not present a barrier.

33. We were told that there are a number of ways in which synergies could be achieved between the two funds, including:

- using Structural Funds to invest in physical and human research infrastructure;
- greater utilisation of transnational activity under regional Structural Funds programmes in Wales in order to build research collaborations;

- using Structural Funds to support projects that fail to secure Horizon 2020 funding but which meet the Horizon 2020 standard of excellence;
- using Structural Funds to finance “downstream” activity, such as commercialising research and innovation;
- using European Social Funds to support modernisation of the higher education sector, including post-graduate programmes and supporting university and business collaboration; and
- combining funding from different EU funding programmes for single projects.

**The Welsh Government should articulate how exactly it will align funding from Horizon 2020 with EU Structural Funding to achieve synergies for improving Wales’s performance in winning research, development and innovation funding and in commercialising that activity.**

### **Smart specialisation**

34. The European Commission has proposed that in order to access EU Structural Funds in future, regions will have to develop “smart specialisation strategies.” Preparations for such a strategy in Wales have a firm foundation with the “Science for Wales” and “Innovation Wales” strategies.

35. We believe it is important that the Welsh Government can identify Wales’s strengths in science, research and innovation, and also measures for turning those strengths into economic growth. It is also important for the higher education sector and the business sector to be engaged in that process. This will ensure that Wales’s smart specialisation strategy has a top down approach, but is also driven from the ground up. We believe that the smart specialisation strategy would be the inventive vehicle for integrating different programmes and funding strands, such as Horizon 2020, the convergence programme, competitiveness programme and research councils.

**The Welsh Government should drive forward a smart specialisation strategy, in consultation with key stakeholders, which aims to create a real culture of innovation throughout academia and industry in Wales.**

## **Building capacity and additional support**

36. We heard during this inquiry that the complex nature of the FP7 application process meant that many organisations, SMEs in particular, lacked capacity and time to apply for European funding.

37. It was also noted that many academics had limited time to engage in EU funding bids, and that the costs of travelling abroad to engage in transnational partnerships were also prohibitive. We appreciate that compared with FP7, competition for Horizon 2020 funding may be even more fierce, making it imperative that Welsh academics and businesses can travel and meet potential partner organisations across Europe.

38. We have referred above (paragraph 25) to the fact that Welsh universities have dedicated staff to support academics with bid preparations and management of successful projects. It was nevertheless interesting to hear that in some European countries and regions, such as Spain, Ireland and Flanders, much greater support is provided to organisations to help them develop bids for project funding.

39. We therefore believe that more could be done to help Welsh organisations, particularly the smaller ones, in the grant application process. As noted above (paragraph 33), EU Structural Funds potentially provide a funding source that could offset some of the costs involved in this process.

40. On 3 July 2012, the Deputy Minister announced a review of the arrangements for implementing EU funding programmes in Wales for the period 2014-2020. Part of the review will consider how the Welsh Government can support the integration of European funding streams, and whether there will be an expanded role for the Welsh European Funding Office (WEFO) in promoting engagement in programmes such as Horizon 2020.

41. We believe it is important that this review should ensure that any future support mechanisms in Wales – whether provided through WEFO or other sources – have the necessary technical, scientific and application expertise to help maximise opportunities from the new schemes. This is particularly important given that decision-making on which projects will be selected will be taken in Brussels on the basis of expert, peer review, and will focus on excellence.

**The Welsh Government should, in its review of WEFO, set out how more effective and more accessible support will be made available in the future to develop the expertise and capacity of Welsh higher education institutions and businesses in preparing applications under Horizon 2020.**

42. We were told in this inquiry how important it was to bring entrepreneurs into universities to help them identify projects for commercialisation. This point was also emphasised by our predecessor committee in the Third Assembly in its 2009 report on The Economic Contribution of Higher Education in Wales. We were therefore pleased to be able to speak to just that kind of technical transfer officer or “bridge builder” when we visited the European Southern Observatory (ESO) project at OpTIC in St Asaph.

**The Welsh Government should encourage all Welsh higher education institutions to employ a technical transfer officer, and should request regular reports on universities’ performance in relation to the numbers of research and development funding applications submitted and projects commercialised.**

43. Another view was presented to us, in that the whole issue should not just be about how to attract more science and research into Wales, but also how Welsh institutions can connect to and utilise excellent science and research outside of Wales - “it does not matter where the knowledge comes from as long as the benefit is gained in Wales”. It was suggested to us that mechanisms for achieving this could be as simple as stimulating short-term mobility such as three-month, six-month, or even week-long secondments and exchanges.

**The Welsh Government should, as part of its review of the management arrangements for EU programmes, establish mechanisms to encourage and support academics and companies in Wales in bidding for European research and innovation funding, including support for the travel and transnational networking and partnership costs associated with developing successful consortia.**

## **Participation of small and medium-sized enterprises (SMEs)**

44. We heard during our inquiry that the Welsh Government was trying to reach out to businesses, universities and the third sector to raise awareness about funding opportunities under the new European programmes such as Horizon 2020. We also heard that small and medium-sized enterprises (SMEs) were still slipping through the net.

45. The Welsh Government emphasised that Welsh SMEs were more likely to be engaged in research and innovation through supply chains to major companies, so it was therefore important to consider the whole continuum of business involvement. We agree with that view to a point, but we are also aware that for many areas of Wales major or “anchor” companies are significantly absent.

46. We heard that it was important for the Welsh Government to “demystify” European programmes for SMEs and to make them relevant, for example, by facilitating access to trade fairs, or setting up meetings between different sets of businesses, or bringing together companies from other countries. We were told that much of this was “serendipity” - unplanned - but that the Welsh Government had a key role in creating the conditions for engagement.

**The Welsh Government should consider a wide range of innovative methods to promote awareness of European funding opportunities in order to engage small and medium-sized companies more effectively.**

## **Knowledge innovation communities (KICs)**

47. Knowledge innovation communities (KICs) are one of the primary delivery tools of the European Institute of Innovation and Technology (EIT, based in Budapest), which is part of the Horizon 2020 programme. Three KICs were established as pilots in 2010, one of which is the Climate-KIC involving Aberystwyth University, and they are essentially cross-border public-private partnerships.

48. There seemed to be some difference of opinion among witnesses as to the potential of the KICs to Wales. The Head of Climate KIC believed that KICs will be a way of “operationalising and internationalising regional smart specialisation strategies” and that it will be for regions such as Wales to identify their key priorities through

the smart specialisation process, and then see whether they can be internationalised with other European partners through a KIC.

49. We also heard from Glyndŵr University that it regarded KICs as an important opportunity for the region to link with the Deeside Enterprise Zone - which focuses on the advanced manufacturing sector - and the Welsh Government's Innovation Strategy.

50. In contrast, we heard from Dr Adrian Healy that although KICs were important for Wales, "we should not get our hopes up too much for the next five or six years at this stage". The reasons for caution were that the three pilot knowledge and innovation communities were based on strong partnerships that pre-existed the KICs, which would be hard to build for other KICs. Also, other European countries are much more advanced in their preparations for the 2014-2020 round of funding.

**The Welsh Government should work with stakeholders on building connections and access to international expertise and major company activity in order to engage with knowledge and innovation communities post-Horizon 2020.**

### **Gathering intelligence**

51. It was clear to us that there is currently a gap in co-ordinating and gathering intelligence on the partnerships that are being forged to participate in FP7. This is a problem at the Welsh level, but also more broadly across the UK and Europe as a whole (as we described in paragraph 18 above). Some organisations, such as UKRO, national contact points and universities may collect some information, but it is by no means detailed or comprehensive.

52. We believe it is essential that the Welsh Government should develop a clear overview of who is applying for what funding and how successful those applications are in order to target its support effectively and ensure Wales can maximise the opportunities available. This will entail receiving accurate information from the Welsh higher education sector on participation levels and success rates in FP7 and in preparation for Horizon 2020: it is not acceptable that the sector is not aware of the activities of its own academics and researchers.

53. The level of participation and success rates by the business sector is likely to be more difficult to assess, but we would welcome initiatives aimed at trying to establish activity in this area, and at benchmarking this with the EU average.

**The Welsh Government, together with higher education institutions, should identify how best to collate and coordinate accurate data on the national and international collaborations and networks involving organisations from Wales that bid for funding under Horizon 2020, and should monitor Wales's relative performance in this area.**

### **Harnessing expertise**

54. As noted in paragraph 23 above, the Chief Scientific Adviser told us that it was important to be "streetwise" in accessing funding for Wales under the new European programmes.

55. We believe there is a case for greater use of Wales's best people within EU (and UK) councils, committees and structures to promote Welsh research interests. For example, Kevin Morgan, Professor of Governance and Development in the School of City and Regional Planning at Cardiff University, is on the "mirror group", the body of experts involved in guiding the European Commission's Directorate General of Regional Policy on the smart specialisation platform, which is based in Seville. Professor Morgan has been advising on how the smart specialisation process might work in practice within regions, and he has also been involved in the peer review of regional innovation programmes for smart specialisation at a number of events that the smart specialisation platform has been holding around different parts of the EU. We were also concerned to hear that only two Welsh academics sit on Research Council governing bodies.

**The Welsh Government should promote the participation of individuals from Welsh higher education and business sectors as expert advisers in the FP7 and Horizon 2020 programmes and in EU level research, innovation and technology networks and platforms established in Brussels, to improve Wales's profile and performance in this field.**

## **Finally**

56. We appreciate that the Welsh Government is moving towards a more joined-up approach in responding to the opportunities presented by Horizon 2020 and future EU Structural Funding, and that Ministers are prepared to think flexibly about transformational, multi-agency projects by encouraging collaborative delivery and bringing together different funding schemes.

57. We also appreciate that Wales's performance in attracting research funding as a whole will not be transformed overnight. The Chief Scientific Adviser for Wales told us that he envisaged it taking a decade for Wales to increase its research funding share to a level commensurate with population size (about 5 per cent).

58. We trust that the conclusions and recommendations from our inquiry to date will help Ministers continue on the track towards developing a successful knowledge economy, and that the Welsh Government will use the opportunities of Horizon 2020 as a key pillar of a more strategic approach to stimulating research and innovation.