

Inquiry into the Horizon 2020 proposals (November 2011) – Welsh Government contribution

Purpose

1. This paper is the Welsh Government contribution to the Enterprise and Business Committee inquiry. In line with the terms of the inquiry and the structure of Horizon 2020, this paper covers the three main areas of the proposals and the linkage between these, the forthcoming 2014-20 Structural Funds arrangements and the Welsh Government's plans for science, research and innovation.

Comparison between main features of Cohesion Policy and Horizon 2020

2. Both funding instruments have shared objectives linked to the 'smart growth' objective of Europe 2020 -developing an economy based on knowledge and innovation, but have different characteristics and focus:

3. **Horizon 2020** focuses on excellence in research and innovation, and science and technology-driven research and development, and will increasingly target its investments towards addressing societal challenges and fostering the competitiveness of industry, with special attention paid to SMEs. Horizon 2020 is delivered through centralised direct management by the European Commission. Its work programmes will be designed at EU level and evolve annually with a planning perspective of 1-2 years. There is no pre-defined geographical distribution of funding. The overwhelming majority of projects have a trans-national perspective, except fundamental research through the European Research Council (ERC) and parts of the new SME instrument. Funding is approved on a competitive basis, following technically specific and timed calls for proposals, and usually requires consortia of international partners.

4. **Cohesion Policy**, which includes the Structural Funds, can support applied research and innovation for the purpose of regional socio-economic development, innovative SMEs and capacity building for innovation and growth through the promotion of innovation friendly business environments. Programmes are delivered through shared management between the European Commission and national/regional authorities and with a medium to long term planning perspective, with programmes lasting over 7-9 years. The financial distribution is place-based, according to NUTS 2 regions, with a defined financial envelope and a larger allocation to less developed regions. Projects are selected on the basis of economic, social and territorial impact criteria and mainly involve, though are not limited to, actors from one Member State or region. Exceptions to this rule are some small territorial cooperation programmes that are exclusively aimed at international cooperation. The draft regulations for the 2014-2020 ERDF structural funds programmes set out requirements to concentrate funding on three key areas: research and innovation; SME competitiveness; and the transition to a low-Carbon economy. The proposal is that in "more developed" regions, like East Wales, at least 80 per cent of all ERDF funding must be directed towards these three objectives. In "less developed" regions, like West Wales and the Valleys, the minimum is 50 per cent. Funding is currently approved by WEFO, as part of a non-competitive open call

for projects, according to project selection and prioritisation criteria and in line with programming documents agreed with the European Commission.

Timetable and Budget Negotiation Process

5. Horizon 2020 will form part of the overall EU Budget for 2014-20, on which negotiations are still at an early stage. A final figure is expected by the end of 2012 or early 2013. UK negotiations on the regulatory packages associated with both Horizon 2020 and the structural funds remain the responsibility of the UK Government's Business Innovation and Skills Department (BIS) who are represented on a cross-Whitehall senior official Programme Board, which is jointly chaired by Cabinet Office and HM Treasury. The negotiation of all elements of the EU Budget for 2014-2020 is the responsibility of HM Treasury.

6. While the precise timetable for negotiation of the Horizon 2020 budget remains unclear, the UK Government is working towards agreeing the UK's relative priorities by autumn 2012. The Explanatory Memorandum on European Union Legislation by BIS, about these Horizon 2020 legislative proposals with their associated proposals and a staff working paper, tabled in Parliament in December 2011, show that the UK Government position is not at odds with the Welsh Government view expressed here. There are also ongoing negotiations on other aspects of Horizon led by BIS on, for example, the 'Rules of Participation'.

7. Wales and the other devolved administrations are represented on the UK Horizon 2020 Steering Group, run by BIS. Through this mechanism the Welsh Government is able to ensure the views of Wales are brought to the attention of the Commission. Officials from Welsh Government most recently attended a meeting of this group on 27 April.

The potential impact of the European Commission's draft legislative proposals for the future Horizon 2020 on Wales

9. The Commission's legislative proposals for the Horizon 2020 package, published in November 2011, recommended an overall budget of €87.7 billion for the period 2014-20, equating to a 46 per cent increase in nominal terms over Horizon 2020's predecessor, Framework Programme 7 or FP7.

10. The UK Government's position is that research and innovation should account for a higher proportion of a total EU budget which should not increase in real terms. It seems likely that the UK Government will argue for reductions in all major spending programmes, including Horizon 2020. However it may well be that the eventual Horizon 2020 budget will represent a considerable increase over FP7.

11. The latest figures obtained from BIS for participation in FP7 (to February 2012) show that Wales has been responsible for 2.7 per cent of the UK project participations and 2.3 per cent of UK grants awarded, a Wales total of some €84 M. These figures are broadly consistent with most other R&D funding figures for Wales and show potential for improvement. We want to be ambitious in our aims to keep pace with the rest of the UK, but we also need to recognise our successes in continuing to

outperform many other parts of Europe. Part of this involves recognising our weaknesses and looking to address them. For example, as *Science for Wales* points out, Wales does not, at present, have the same concentration of researchers in areas of higher research spending or quantity of objectively world-class research being carried out as some other parts of the UK.

12. The proposed structural changes in Horizon 2020, such as replacing thematic programmes with a focus on societal challenges, mean it is not always possible to make like-for-like comparisons with FP7. However the following information reflects the current indications:

- The distribution between the three ‘pillars’ of Horizon 2020 will be: Excellent Science 31.7 per cent; Industrial Leadership 22.6 per cent; and Societal Challenges 39.9 per cent.
- The budget share for the European Research Council will be increased. The UK traditionally does well in this area due to our excellent HEI research base. Wales’ share of ERC funding between January 2008 and February 2012 was €15.4M, 1.9 per cent of the UK total. Over time, the Sêr Cymru programme is expected to contribute to improving this.
- The budget share for Marie-Curie researcher mobility grants will decrease in relative terms from 9.4 per cent of the FP7 budget to 7.4 per cent of Horizon 2020. However, if the budget proposals are approved, this will still represent a monetary increase of 28 per cent. This has been an area where Wales has done somewhat better, attracting 49 projects to date in FP7 with a value of €12.7M. This represents 2.6 per cent for Wales of the UK total.
- One of the largest proportional budget increases is in the area covering food security, sustainable agriculture, marine and maritime research and the bio-economy, where Wales has traditionally been strong and has a key sector interests.

Synergies between Horizon 2020 and future EU Structural Funds in Wales

13. The proposed regulations contain multiple references to the European Commission’s desire to see synergies and a coherent approach between Horizon 2020 and all other EU programmes, particularly the structural funds. Key structural fund priority areas include increasing the involvement of SMEs and supporting Excellent Science and Research Infrastructures.

14. Both structural funds and Horizon 2020 will operate over the same programming period (2014-2020) and both are primarily directed at achieving the goals set out in the Europe 2020 Strategy for smart, sustainable and inclusive jobs and growth. The regulatory proposals also highlight the following mechanisms to help facilitate links and synergies between the structural funds and Horizon 2020:

- A Partnership Agreement (between the European Commission and the Member States) will set out how various EU funds will be coordinated, and will identify areas for cross-fund activity and coordination. This is primarily directed at the

structural, rural and fisheries funds but will also offer opportunities to draw links with other EU funds like Horizon 2020. Wales expects to have its own section within the UK Partnership Agreement.

- The Research and Innovation priority within the structural funds programmes will identify links with Horizon 2020 and set out the opportunities for synergies and how they might be exploited.
- Coordination mechanisms will need to be established within Wales to report on, monitor and ensure the exploitation of these synergies during implementation.
- Harmonisation of cost eligibility rules between Horizon 2020 and CP could provide major simplification for beneficiaries compared with the current multiple sets of rules. Examples include allowable lump sums, flat rates and unit costs without the need to provide documentation of actual expenses and VAT rules.

15. On 8 May 2012, the Deputy Minister for Agriculture, Food, Fisheries and European Programmes announced that Research and Innovation will be a priority for future Structural Funds programmes in Wales. He also set out principles that will apply to future programmes, including a strong focus on jobs and growth. We are now developing the detail on the areas of intervention that can best deliver this.

16. The 2007-2013 ERDF programmes had a stated aim of building capacity to improve access to the Framework programmes, though there was no specific targeting to this effect nor any direct link made in the monitoring and evaluation processes put in place. Targeting was clarified in part through a review in 2009 which prioritised funding in the key research priorities. This targeting approach has generated some successes that could be built on, such as investing in a centre of excellence in the Low Carbon Research Institute, which received over £15m structural funds support and is now accessing FP7 research funding.

17. The existence of a Regional Innovation Strategy for 'Smart Specialisation' will be a precondition for support from the 2014-2020 structural funds for Research and Innovation. It is therefore anticipated that the Welsh Government innovation strategy, discussed further below, will serve as a key tool to prioritise those investments through the structural funds that might be most effective in bridging the gap to Horizon 2020.

18. The specific content of each structural funds priority will be developed over the coming months in partnership. While we expect a high degree of synergy between Horizon 2020, Welsh Government policy and the structural funds, we should note that each has a different focus. Increasing participation in Horizon 2020 of itself is not intended to be the primary focus for structural funds investments. Synergy might be demonstrated in the structural funds through investments that support:

- Complementary activity to areas funded through Horizon 2020 – such as applied research, experimental development, and commercialisation of research in related areas and key challenges;

- Building capacity to improve, exploit and share excellence – for example through targeted investments in centres of excellence that would look to access a range of research funding including Horizon 2020; and
- Addressing barriers to accessing Horizon 2020 – for example through helping to providing a menu of assistance and advice including bid-writing, finding international partners and non-technical advice on processes and procedures.

19. Better integration of policies, programmes and projects is vital across Wales if we are to achieve a collective impact on the future of the Welsh economy and labour market. Part of this will involve coherent and cohesive actions across the whole of Government. We fully expect our structural funds priority for Research and Innovation, and the projects that will underpin it, to fit very closely with the ambitions in the *Science for Wales* strategy, to support the competitive strengths identified in *Innovation Wales* and to coordinate investment with Welsh Government programmes and projects. This will include, for example, an emphasis on the three grand challenge areas set out in the *Science for Wales* strategy, sectoral prioritisation based on sector-strategies, specific opportunities for researchers working in the Star teams, or capacity building packages aimed at areas identified in *Innovation Wales*.

How the science strategy for Wales and other relevant Welsh Government policies can maximise the opportunities to organisations in Wales to participate in future EU research and innovation funding.

20. *Science for Wales* was published in March 2012, with full awareness of the Horizon 2020 proposals, as set out in the preceding November. It drew on wide consultation with stakeholders. The Horizon 2020 proposals are founded on three key priorities.

21. The first of these is ‘excellent science’. The aim of this is to ‘raise the level of excellence in Europe’s Science base and ensure a steady stream of world-class research to secure Europe’s long term competitiveness’. This exactly parallels the main thrust of *Science for Wales*, which is to raise the amount of excellent research undertaken in Wales and the share of competitively-awarded research that Welsh higher-education institutions win.

22. *Science for Wales* calls for an initial target of at least parity with our pro rata level of funding from the UK Research Councils, which by percentage of the UK population would be 5 per cent. In 2010-11 Wales won some 3.4 per cent. The Welsh Government is also expecting to see increases both in the number and value of successful bids by Welsh organisations, from FP7 (currently the value is some 2.3 per cent of the UK total) and from the European Research Council (ERC) (currently 1.9 per cent of the UK total). The measure of excellence must be objective and established by robust peer-review arrangements – as it is for ERC awards.

23. *Science for Wales* makes a Welsh Government call for action by the Universities in Wales and commits to a new investment of some £50 million over a five year period in two linked initiatives: Sêr Cymru (Stars Wales) and National Research Networks (NRNs). These aim to increase the level of world-class research

undertaken in Wales by boosting and complementing the capability of existing research excellence in Wales - thereby increasing both the critical mass and excellence of Welsh research. The UK Research Councils are increasingly making fewer, larger grants over longer periods, and inviting collaborative grant applications from groups of HEIs as this can lead to better integration of research capabilities in universities; Wales is responding to this by the Sêr Cymru programme. The NRNs and associated Doctoral Graduate Schools will promote and support collaborative research between Universities in Wales and elsewhere in the UK, whilst the Stars programme will provide extra research capability in critical areas to augment and underpin the NRN activities. A further aim of the NRNs is to engage industrial organisations with the aim of exploiting this research expertise base and to attract EU research and innovation funding. Horizon 2020 funding is particularly suited to academic and industrial collaborations. Thus Sêr Cymru will help maximise the opportunities for non-HEI organisations to benefit from EU research and innovation funding.

24. Horizon 2020, in support of its excellent science key priority, looks to use the ERC to support the most talented and creative individuals. This is one of a range of competitive research funds that we would encourage and expect the best groups in Wales to be bidding into for high-quality, ambitious research activity. Collaboration is increasingly the norm for research applications. The Welsh Government would encourage academics and other researchers in Wales to work with the best, wherever they are in the world. The National Research Networks will help achieve a boost in quality and give researchers in a given field, where we can demonstrate objectively excellent work, the best chance of joining or leading, such large strategic bids. Graduate schools within the Networks will foster a community of more skilled and talented post-doctoral students working in Wales, helping build a pool of research expertise.

25. Horizon 2020 seeks also to support 'Future and emerging technologies' by funding collaborative research. *Science for Wales* sets out three key priorities of its own, described as 'grand challenges'. These are health and life sciences; environment and energy and advanced engineering and materials. In all three of these we anticipate that much of the research would be into such 'future and emerging technologies' and the fundamental science which underpins them.

26. Horizon 2020 looks to provide researchers with excellent training and career development opportunities through its Marie Curie actions, although, as noted above, the funding proportion will be reduced. A parallel thrust of *Science for Wales* is to provide just such careers within Wales. We should not be too concerned about movement from Wales of young researchers and research positions taken outside Wales – the market for researchers is global and researchers will seek the most appropriate opportunities for their careers. We must expect ambitious young scientists and engineers to seek to work with the best. At the same time we must foster sufficient star teams in our institutions to draw such young scientists to Wales. The proposed graduate schools will enhance the attractiveness of the offer in Wales, in addition to wider quality of life advantages.

27. The second key priority in Horizon 2020 is Industrial Leadership. Past and current innovation programmes have been seen as good practice by the European

Commission, with strong examples of business engagement from Universities. Horizon 2020 is set in a more challenging context, however, and seeks to make Europe as a whole as attractive as possible for research and innovation. It will provide major investment in key industrial technologies. *Science for Wales* makes a similar point and calls for research and investment in the three grand challenge areas. It commits to an innovation strategy, which is now being developed with a consultation open until 23 July 2012 and is discussed further below.

28. The third key priority is addressing Societal Challenges. Horizon 2020 expects to see funding focussed on a series of such challenges. There is close correlation between these and the three 'grand challenges' in *Science for Wales* and also with several key sectors earlier identified by the Welsh Government as of economic importance to Wales. The Welsh Government welcomes the overarching objective of at least 60 per cent of all the Horizon 2020 budget being deployed on sustainable development activities (i.e. dedicated funding for climate action, resource efficiency and other objectives). This complements the Welsh Government's statutory obligations in these areas and the environment and energy 'grand challenge' in the *Science for Wales* strategy.

29. We welcome the stronger linkages being established between programmes. The Sêr Cymru programme will put in place some highly successful academics, leading large teams, within a grand challenge area and will take account of EU opportunities.

30. The paper stated above that *Science for Wales* committed to developing a complementary strategy to deal with the commercial exploitation of R&D and the promotion of Innovation. This will help fulfil the European Commission's requirement for 'Regional Innovation Strategies for Smart Specialisation' (RIS3) will be a precondition for research and innovation spending under the structural funds in the period 2014–20.

31. The EU Commission considers that, in order to exploit fully the opportunities for synergy between the funding mechanisms, it is essential that the RIS3 are elaborated by national and/or regional managing authorities for Cohesion Policy in close collaboration with the authorities and bodies responsible for research and innovation most directly concerned by Horizon 2020.

32. A consultation is under way on this Strategy. A 'Call for Evidence' is encouraging stakeholders, including the higher education and business communities, to contribute. Views from outside Wales are also being sought. The eventual Strategy will be based on a solid analysis of areas of existing competitive advantage and potential for future excellence and market potential. As recommended by the European Commission it will also undergo peer review.