

Enterprise and Business Committee

Meeting Venue:
Committee Room 3 – Senedd

Meeting date:
14 June 2012

Meeting time:
09:00

Cynulliad
Cenedlaethol
Cymru

National
Assembly for
Wales



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Agenda

Private Pre-meeting (09.00 – 09.15)

1. Introductions, apologies and substitutions

2. Inquiry into Horizon 2020 – Briefing session (09.15 – 10.15) (Pages 1 – 5)

Christina Miller – Director, UK Research Office

3. Inquiry into Horizon 2020 – Evidence session (10.30 – 11.30) (Pages 6 – 37)

Paper 1

Higher Education Wales

Professor Richard B Davies – Vice Chancellor of Swansea University

Professor Hywel Thomas – Pro Vice Chancellor, Engagement and International, Cardiff University

Mr Berwyn Davies – Head of Office, Welsh Higher Education Brussels

Paper 2

Higher Education Funding Council for Wales

Professor Philip Gummatt – Chief Executive, Hefcw

4. Motion under Standing Order 17.42 to resolve to exclude the

public from the meeting for the following business: (11.30)

5. Discussion of the Forward Work Programme (11.30 – 12.00) (Pages 38 – 44)

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Looking Ahead to Horizon 2020

Welsh Assembly

14 June 2012

Christina Miller
Director, UK Research Office

<http://www.ukro.ac.uk>

UK Research Office



UKRO's mission is to promote effective UK engagement in EU research, innovation and higher education activities by:

- Enabling sponsors and subscribers to make informed decisions about participation in EU programmes and to realise the opportunities available to them;
- Supporting UK input into European research policy development and implementation through informing and interfacing with the appropriate bodies; and
- Developing and maintaining a suite of quality services that meet the evolving needs of sponsors and subscribers.

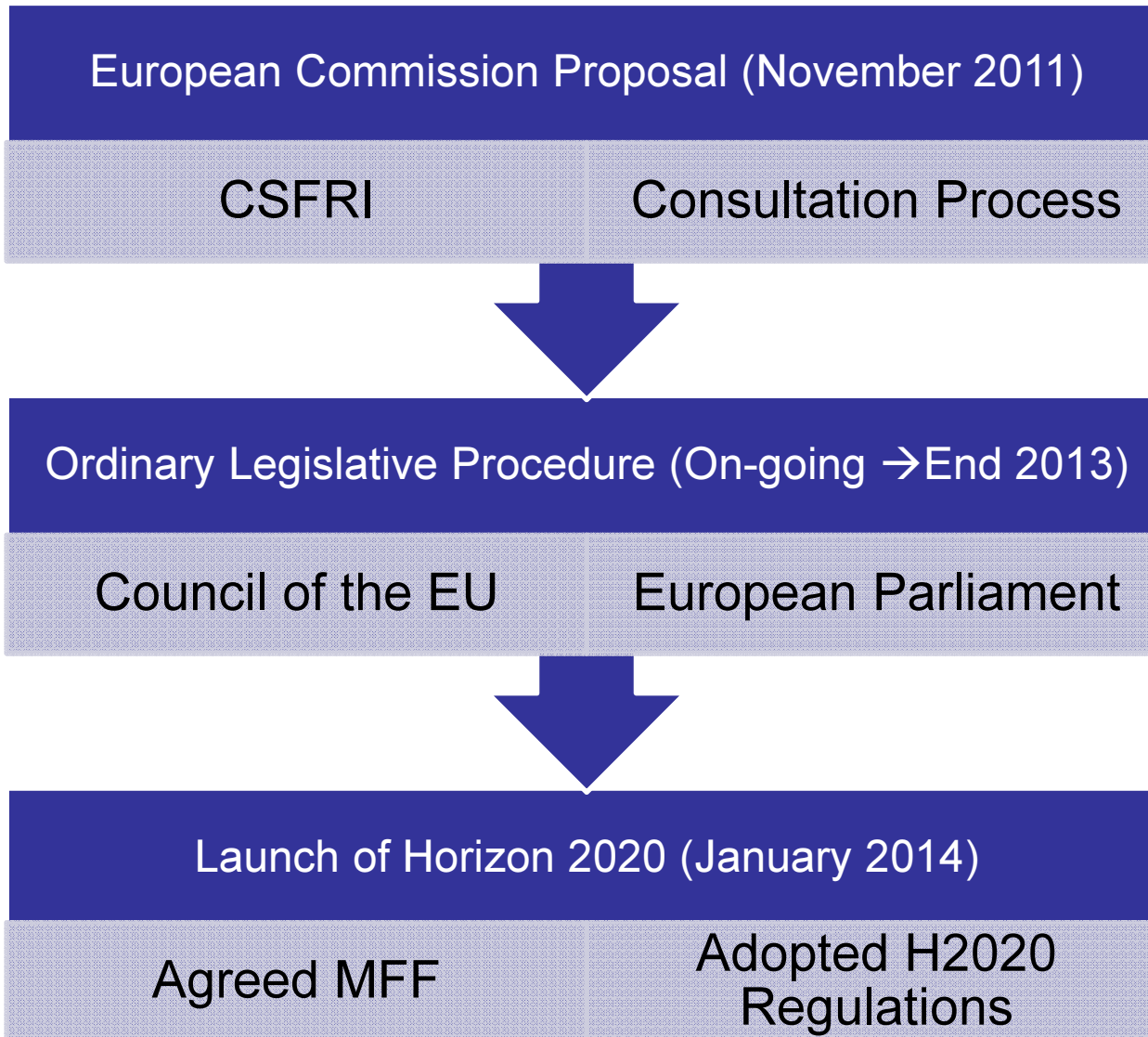


Arts & Humanities
Research Council



Science & Technology
Facilities Council

Simplified Timeline



FP7

- 2013 Work Programmes (July 2012)
- Orientation papers
- Last Calls designed as bridge to Horizon 2020

European Commission Proposal

Excellent Science

- European Research Council
- Marie Curie Actions
- Future and Emerging Technologies
- Research Infrastructures

Societal Challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture, marine and maritime research and the bio-economy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, resource efficiency and raw materials
- Inclusive, innovative and secure societies

Industrial Leadership

- Key enabling and industrial technologies
 - ICT
 - Nanotechnologies
 - Advanced Materials
 - Biotechnology
 - Advanced Manufacturing and Processing
 - Space
 - Support for cross cutting actions
- Access to risk finance
- Support to SMEs with high growth potential.

European Institute of Innovation and Technology

Partial General Approach

Cross Cutting and Support Measures

Excellent Science

- European Research Council
- Marie Curie Actions
- Future and Emerging Technologies
- Research Infrastructures

Societal Challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture, marine and maritime research and the bio-economy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, resource efficiency and raw materials
- Europe in a changing world- Inclusive, innovative and reflective societies
- Secure Societies – Protecting freedom and security of Europe and its citizens

Industrial Leadership

- Key enabling and industrial technologies
- ICT
- Nanotechnologies
- Advanced Materials
- Biotechnology
- Advanced Manufacturing and Processing
- Space
- Cross cutting actions
- Access to risk finance
- Support to SMEs with high growth potential.

European Institute of Innovation and Technology

Agenda Item 3



NAfW inquiry into the Horizon2020 proposals for European research and innovation funding 2014-2020

A submission to the Enterprise and Business Committee from HEW and WHEB

About Higher Education Wales & Welsh Higher Education Brussels

Higher Education Wales (HEW) is the representative body for Wales's Higher Education Institutions and is a National Council of Universities UK. HEW's Governing Council consists of the Vice-Chancellors of all the HEIs in Wales and the Director of the Open University in Wales.

Welsh Higher Education Brussels (WHEB) has been established to promote the interests of the Welsh Higher Education sector in Europe. WHEB works to:

- Enable the HE sector to engage more fully with European priorities such as the Europe 2020 Strategy, Horizon2020 and the Bologna Process; and,
- Facilitate stronger relationships between Welsh Higher Education Institutions (HEIs), European Institutions and Regional Partners from the EU, and beyond.

By placing itself at the heart of Europe, WHEB aims to build closer links with a wide range of other stakeholders, promoting Welsh excellence in pursuit of Europe-wide goals.

Introduction

HEW welcomes the opportunity to discuss the proposals for the new EU research and innovation programme, Horizon2020 which will come into force in 2014.

The higher education sector represents over 72% of the Welsh participation in the current FP7 programme and the sector is in receipt of over 84% of the FP7 funding coming to Wales. In total, Wales has received over €84m from FP7 since 2007.

There are fields where the sector performs well compared to the UK participation rate such as the Food, Agriculture and Biotechnology and Nanosciences, Nanotechnologies, Materials and New Production Technologies themes in the Cooperation strand as well as parts of the Capacities strand in FP7. However, the sector recognises that Wales should be securing a greater proportion of European funding for research.

Horizon2020 offers new opportunities for the sector to carry out even more European funded research and it intends to fully exploit these opportunities during the 2014-2020 programme period in order to strengthen the international competitiveness of the Welsh HE sector.

This paper highlights the following key messages:

- The primary aim of Horizon2020 will be to **fund excellent research and innovation wherever it is found**. The proposed increase in its budget and its focus on funding research that has the potential to have a transformative impact on the European economy offers new opportunities and challenges to the HE sector in Wales to **increase its competitiveness**.
- This proposal offers opportunities for the sector to build on its current engagement with EU research funding to **strengthen its international engagement**. The new programme introduces a new structure which includes a pillar dedicated to excellent bottom up science with an increased budget most notably for the European Research Council.
- The proposals include **simplified rules for participation** which will make it more attractive to academics to get involved. Furthermore, the focus on the entire innovation chain from research to market will afford **new opportunities for the universities to work with businesses in Wales and internationally**.
- For historical reasons the capacity for Wales to undertake science, technology, engineering and mathematics (STEM) research has been smaller compared to England and Scotland. The Science Strategy for Wales recognises **that a dynamic modern economy needs a strong science base**. It is vitally important that Wales takes a strategic approach to the new European funding opportunities by building its research and innovation capacity through Structural Funds. This investment in **building critical mass of research and innovation will enable universities to compete with the best in Europe and beyond in the new Horizon2020 programme**.
- There are clear links between the challenge driven approach and the Ser Cymru programme in the Science Strategy for Wales with the structure and objectives of Horizon2020. This alignment is essential for universities to integrate the new programme into a broader strategy of attracting other sources of external research funding to Wales. **European funding programmes are therefore of fundamental importance for the future of research and development in Wales**. The HE sector sees this strategic approach as an ideal opportunity to work with Welsh Government and the private sector to contribute to economic growth.

1. The potential impact of the EC's draft legislative proposals for the future Horizon2020 on Wales

Potential positive impact on Welsh universities

Supporting research and development

- 1.1. The sector supports the explicit commitment to the **principle of excellence** as the main criteria for the proposed programme. Funding should only be allocated to research that has been deemed world class by international peer review.
- 1.2. The sector recognises that a **broader definition of excellence includes effective exploitation of research for economic development**. Rapid transition from excellent fundamental research to applied research in products and services is a goal of the current FP7 which has increasingly demanded SME involvement. This will become a core element of Horizon2020.
- 1.3. The sector strongly supports the proposed overall budget of €80bn. This represents the required minimum increase on the current budget to ensure a level of funding comparable to the final years of FP7, whilst taking into account that Horizon2020 will comprise of not only the successor of FP7 but also the Competitiveness and Innovation Programme (CIP) and the European Institute of Innovation and Technology (EIT). **We would estimate that this level of funding is the minimum for Horizon2020 to have the potential to generate a critical mass of research and innovation that will contribute significantly to economic development across the EU.**
- 1.4. The sector supports the new structure of the programme, focusing on excellent science, industrial leadership and addressing societal challenges. The sector particularly supports the first pillar on strengthening the science base as this provides bottom up funding for research in any field or topic, without being restricted to specific thematic call. It therefore represents a clear opportunity for the institutions in Wales to attract more EU research funding. Approximately €25bn has been allocated to this part, representing almost one third of the overall budget. The sector believes that **this amount should be retained during the budget negotiations and that one third of the programme devoted to the Excellent Science pillar should be a minimum requirement.**
- 1.5. Innovation and close to market research which contributes to economic development draws heavily on well funded fundamental research which is itself internationally competitive. As such the sector is very pleased that this is recognised in the proposals with the planned increase in the budget for the **European Research Council (ERC)** by 77% within the Excellent Science pillar. This budget will contribute to the development of a strong world class research community in Europe, ensuring that institutions can attract and retain the best researchers and compete with the best globally. Already, the 10 ERC grants won by Welsh

institutions represent the single largest funding source within the FP7 at €15.4mn and accounts for almost 18% of all FP7 received so far. **Maximising success with this part of Horizon2020 will therefore be a key priority for the sector in Wales to underpin the country's aspirations in building its excellent science base.**

- 1.6. The Commission is in favour of stronger links within and between the pillars of Horizon2020 and the sector is keen to explore how the economic impact of current and future ERC funded research in Wales can be realised by securing funding in the more innovation focused parts of the new programme such as the Societal Challenges or Industrial Leadership pillars.
- 1.7. The sector is also pleased to note that **Marie Curie** will also be a key element of the Supporting Excellence in Science pillar. Welsh universities have been successful in attracting this funding in the past (€12.7mn from FP7 to date) and see 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. The sector is also keen to ensure that elements of the current Industry Academe Pathways and Partnerships (IAPPs) are retained in the new Marie Curie action.
- 1.8. The sector welcomes the inclusion of **Future and Emerging Technologies (FET)** within the Excellent Science pillar. This is an important bottom up initiative which will be open to a much broader range of subject areas, beyond the current FP7 focus on ICT. The proposed expansion of FET to areas such as energy, health, and materials represents a significant increase in opportunities for the sector.
- 1.9. Welsh HEIs have benefited from FP7 funding for **research infrastructures** and the sector welcomes its continuation in the Excellent Science pillar. There will be a clear opportunity for the sector to strengthen the research priority areas e.g. in health and low carbon through this particular strand.
- 1.10. The importance of research and innovation in addressing **societal challenges** is central to the proposals. The sector has argued in the past that transnational collaborative research should be retained as the fundamental key aspect of Horizon2020. Engagement in **collaborative research with the best in Europe** and the rest of the world is important for underlining the reputation of Welsh HEIs as centres of excellence in research, innovation and technology transfer. The focus on **multidisciplinary research** in the Societal Challenges pillar will provide new opportunities for academic departments across the universities to engage with the programme by collaborating with colleagues within their own institutions as well as with colleagues across Europe and worldwide. There will also be the potential for institutions in Wales to collaborate on applications which draw on the specific expertise of colleagues across the sector to strengthen consortia. The sector notes that this pillar will **support the entire innovation chain from research to close to market** initiatives and that it includes a new focus on piloting, demonstration, test beds, support for end user driven innovation, social innovation and market take

up. The sector recognises that greater collaboration with SMEs in Wales and internationally will therefore be required.

- 1.11. The sector supports the commitment to open the programme to international partners from across the globe. This is continuing the way the FP7 has operated, where over 180 countries outside the EU and Associated Countries have taken part, with the US and Russia the leading non-European participants in the programme, followed closely by China, India and Brazil. This will be an opportunity for the institutions to **incorporate engagement with the programme into their own international strategies** in terms of collaborative international research and researcher mobility. In addition, the sector aims to work with Welsh Government to ensure that these issues form part of the government's own international activities.
- 1.12. The sector notes the significant increase in the budget proposed for the **European Institute of Innovation and Technology** (EIT) within the proposals. The EIT is an important development which brings together research, education and innovation through the Knowledge Innovation Communities (KICs). Aberystwyth University is one of several associate partners in the Climate-KIC. However, the sector's experience of the EIT to date has been stifled by a lack of clarity as to its objectives, activities and mechanisms. Genuine opportunities for engagement need to be clearly articulated to justify the proposed increase of the EIT budget under Horizon2020. The sector believes that the **other areas of Horizon2020 are of a higher priority, should any restrictions be placed upon the proposed budget for the programme.** That said, the sector is extremely keen to work with Welsh Government in exploring opportunities to engage with the new areas proposed in 2014. Involvement in the proposed Food for Future KIC would allow the sector to build on its notable success in the Food, Agriculture and Biotechnology strand of FP7.

A simplified programme

- 1.13. The sector welcomes the moves towards **greater simplification and a more user-friendly programme.** In particular the proposed reduction of time to grant to 100 days as will encourage more academics to engage with the programme.
- 1.14. The proposal to have a single reimbursement rate of 100% of direct costs for all participants and activities and a single flat rate of 20% for indirect costs will be a key element for simplifying the programme which should also lead to a reduction in time-to-grant and administration. A single reimbursement rate will allow the preparation of budgets to be much simpler, in particular for transnational multi-partner projects, **reducing the administrative burden,** especially for coordinators. In addition, the Commission recognises that projects often need to adapt to changing needs during their implementation e.g. the need to replace partners or reallocating resources within the project, and changes will no longer lead to complex budget renegotiations.

1.15. The sector strongly supports the move towards a **more trust based system and acceptance of accounting practices in member states**. This should lead to fewer audits and controls. In addition the sector welcomes the proposal for non-recoverable VAT to become an eligible cost which should make the programme more attractive to the institutions. However, it should be noted that the eligibility of VAT in Horizon2020 is a decision at the level of the Financial Regulation. Without this change, some elements of the new funding regime will not be financially viable for the sector.

Engaging with SMEs

1.16. The sector notes the target of 15% SME participation in Horizon2020. The moves towards greater simplification will not only benefit the HE sector but will also make the programme more attractive to SMEs. Engaging SMEs in Framework Programmes in the past has proved challenging and they rely to a large extent on support and expertise within HEIs to engage with European funded programmes. One of the key challenges for the sector will be to identify the best SMEs as partners in projects, wherever they may be located. Preparing successful bids is a very resource intensive undertaking and better support to facilitate this process would be welcome. The importance of structural funds in this regard is noted – Moreover, this could be achieved through the expansion (size, scope and ambition) and simplification of the Wales European Collaboration Fund, following e.g. the Enterprise Ireland's programme of financial support for FP7 participation¹.

1.17. Whilst the sector supports the proposals for new SME instruments within Horizon2020, it will be important that the Commission's aim for greater cross-over between the different strands of the programme is realised. **Research and development undertaken within universities should be prioritised for activities funded under the Industrial Leadership pillar** where SMEs can transform research results into products and services. The sector notes that the emphasis on demonstration and pilot projects in the Societal Challenges pillar will require greater collaboration between universities and business, both large and SMEs.

1.18. **Potential negative impacts on Welsh university participation.** Collaboration between SMEs and Universities are frequently developed within wider university collaboration with large companies, often in the context of strengthening supply chains. This is problematic in Wales because of the relative paucity of larger companies. It reinforces the significance of the Welsh Government's policies towards "anchor" companies but also points to the potential importance of the Horizon2020 in helping Wales achieve maximum benefit from "anchor" companies which are attracted to Wales.

1.19. While the sector welcomes the increased budget for **Marie Curie** it is important to note that the budget allocation represents a **cut in real terms for the first six**

¹ For further information please see: <http://www.fp7ireland.com/Page.aspx?SP=225>

years of Horizon2020. In 2013, the final year of FP7, the budget for Marie Curie is almost €1bn. Under the current proposal for Horizon2020, an equivalent level of annual funding will not be reached until 2019. At the start of Horizon2020, in 2014, the annual call budget for Marie Curie will be only €0.7bn. The Marie Curie action is a very competitive part of FP7 and the sector has been successful in attracting this funding. However, this real terms cut will make this funding even more competitive during most of the Horizon2020 period. We would recommend that a higher budget is allocated to this even if this means a slight reduction in the amount allocated to the ERC. A further concern is that a much larger share of the Marie Curie budget is being allocated to the COFUND scheme. The scheme is only available to existing fellowship and researcher training programmes, which can apply for top-up funding from COFUND. This represents a potential problem for Wales, as very few such programmes currently exist in Wales, making a larger proportion of the Marie Curie programme virtually inaccessible for the sector.

1.20. The sector recognises that **research in social sciences and humanities** can play a vital role in the Societal Challenges pillar, as Welsh universities have leading departments in this field and will encourage academics to engage with the new programme. However, the **importance and contribution of social sciences and humanities to each of the Challenges is not sufficiently well articulated in the current proposal.** A change of approach is needed to make social sciences and humanities an integral and explicit element of all Challenges. The concern is that otherwise academics in this area will be disadvantaged, even marginalised, by not having clear opportunities to participate in what is the largest pillar of Horizon2020.

2. What the Welsh Government should prioritise in seeking to shape the UK Government's position in the Council of Ministers, and feed these views into the negotiations taking place in Brussels (including the European Parliament)

2.1. The sector strongly supports the proposed budget of €80bn for the new programme and recommends that the Welsh Government provides evidence to the UK government on the **importance of the programme for delivering the Science Policy for Wales and Wales' overall engagement with European programmes.**

2.2. The sector urges Welsh Government in particular to **ensure that the budget for the Excellent Science Base pillar is retained and as a minimum should represent at least one third of the overall Horizon2020 budget.** However, within the Excellent Science Base pillar, the sector would recommend a smaller proportion of the Marie Curie budget to be allocated to the COFUND scheme, giving greater emphasis and funding to the individual fellowships and Initial Training Networks.

- 2.3. Welsh Government should clearly articulate the strong alignment between Horizon2020 and Structural Funds. The proposed synergies between the two programmes offer unprecedented opportunities for **building research capacity and capability within Wales and allowing universities and businesses to collaborate with the best in Europe and worldwide through successful bids to competitive calls**. It is essential that these programmes are viewed as complementary and that bridges are actively built, linking the two programmes. We urge that Welsh Government recommends that explicit reference is made to these important links between Structural Funds and Horizon2020 in the Partnership Contract and the Operational Programmes.
- 2.4. The sector urges Welsh Government to refer to the **endorsement given by the Enterprise and Business Committee in its February report** on the alignment between Horizon2020 and Structural Funds when negotiating with UK Government².
- 2.5. The sector recommends that Welsh Government **promotes the opinions of Welsh universities in the European Parliament** which is currently considering the proposals alongside the Council of Ministers.

3. Assess the opportunity for synergies between H2020 and the future EU Structural Funds in Wales aimed at improving future participation in H2020.

(Annex 1 provides examples of links between structural fund investment and transnational EU funded research activities in Welsh universities)

- 3.1. Though Structural Funds and Horizon2020 have different characteristics and focus we note that both funding instruments have **shared objectives linked to the smart growth objective of Europe2020**.
- 3.2. The agenda on synergies between both instruments is actively pursued in Brussels where there is widespread support for using Structural Funds for building research and innovation capacity – the **stairway to excellence concept**. MEPs are advocating this strongly in the Industry Transport Research and Energy committee³. This commitment is reflected in requirement for regions to devise regional innovation strategies based on smart specialisation.

² Draft Legislative Proposals for EU Structural Funds 2014-2020, NAFW Enterprise and Business Committee, February 2012

³ Working Document on Specific Programme Implementing Horizon2020 – The Framework Programme for Research and Innovation (2014-2020):

<http://www.europarl.europa.eu/sides/getDoc.do?type=COMPART&reference=PE-488.047&format=PDF&language=EN&secondRef=01>

3.3. As stated during its previous evidence to the Enterprise and Business Committee the sector fully supports the Commission's proposal in the draft regulations for Structural Funds to concentrate resources around a limited number of priority areas which include research and innovation. The sector endorses the minimum allocation of 80% in More Advanced Regions and 50% in Less Advanced Regions to these areas. Investing in the 'Strengthening Research, Development and Innovation' theme provides clear opportunities for aligning Structural Funds with the objectives and the activities proposed in all three pillars of Horizon2020 and as stated in the previous evidence session, will be a **key determinant for achieving transformational change in the Welsh economy**. This view was endorsed by this Committee in its final report⁴.

Key opportunities for realising the synergies

3.4. In order to ensure that opportunities for synergies are realised in practice we strongly urge Welsh Government, as the managing authority, to **prioritise its Structural Fund activities within the Operational Programme to support Welsh participation in Horizon2020**.

3.5. A common Wales wide strategy for Structural Fund priorities with strong commitment for investing in research and innovation across both the Less and More Advantaged Regions would enable the institutions to collaborate more effectively and allow for stronger strategic links with Horizon2020.

3.6. The sector strongly supports the possibility of **combining Structural Funds and Horizon2020 funding for same project** (as stated in the Art 55 (8) of Gen Regs). On condition that an expenditure item is not funded twice under the Structural Funds or any other EU instrument, a single operation is allowed to receive support from both the ERDF and ESF or the ERDF and Horizon2020. This needs to be underpinned by compatible rules and procedures, coherent application processes and evaluation criteria which avoid any double jeopardy.

3.7. Smart specialisation is likely to be an ex ante condition for receiving Structural Funds. This is a key opportunity to commit to making links with Horizon2020. The **Smart Specialisation Strategy** should outline both upstream and downstream actions to and from Horizon2020 as key actions for Structural Funded activity to realise the Regional Research and Innovation Strategy.

3.8. **Upstream activity** should prepare regional research and innovation organisations to participate in Horizon2020 by adopting the stairway to excellence concept. There is potential within ERDF to fund capacity building in Member States and Regions for research and innovation excellence and technological change. Examples include

⁴ Draft Legislative Proposals for EU Structural Funds 2014-2020, NAFW Enterprise and Business Committee, February 2012

investing in research infrastructures and equipment of European interest . Within the ESF there will be opportunities to support the modernisation of the sector through the development of post-graduate programmes, improving the research skills of students, training of researchers and the support and promotion of university and business collaboration. These activities can in turn stimulate and facilitate participation in Horizon2020.

- 3.9. Structural Funds can also support **downstream activity** by exploiting research and innovation results stemming from Horizon2020 and current FP7 projects, transforming research outcomes into commercially viable products and services. The sector supports the Commission's recommendation that Structural Funds are used to develop projects led by universities in supporting the first time access of regional SMEs to European programmes such as Horizon2020.
- 3.10. The sector strongly recommends devising **innovative schemes, using Structural Funds, to build on and grow Wales' success particularly under the Excellent Science Base pillar**. These should include a specific programme to support Welsh host institutions of awardees of ERC grants, based e.g. on the model of the Science Foundation Ireland's ERC Support Programme⁵. Norway supports successful ERC grant winners with an additional 25% of grant to in order to travel to collaborator institutions for nurturing ideas, to engage a proposal writer or to free up time from teaching duties to undertake the funded research. Furthermore, setting up Welsh research fellowship and/or researcher training programmes through Structural Funds, with the view to attract additional EC funding through Marie Curie COFUND, should be prioritised.
- 3.11. The sector strongly supports the proposal first promoted by the Synergies Expert Group⁶ in 2011 and endorsed by MEPs that **structural Funds might be used to contribute to the funding of ERC, Marie Curie or collaborative projects that meet the criteria of excellence but cannot be funded due to lack of European funds**. Horizon2020 could confer a '**seal of excellence**' on positively evaluated projects that have not otherwise been able to achieve funding because of budgetary limitations.
- 3.12. Greater **transnational activity** is supported in Structural Funds and this offers opportunities to work with other regions to build research collaborations and e.g. to share research infrastructures.
- 3.13. In addition, the **Territorial Cooperation programme** offers opportunities for building trans-national linkages between regional innovation actors. This programme will include activity currently supported through Regions of Knowledge and Research Potential programmes which were highly competitive strands of FP7. The new

⁵ <http://www.sfi.ie/funding/funding-calls/open-calls/sfi-erc-support-programme/>

⁶ See: http://ec.europa.eu/research/regions/pdf/synergies_expert_group_report.pdf

proposals could offer the chance for Wales to engage in this activity for the first time.

3.14. The sector notes that a specific **part of Horizon2020 has been designated for closing the research and innovation divide** which should be considered alongside Structural Funded activity. Proposed activities include twinning emerging institutions in less developed regions with international leading counterparts, build links with innovative clusters and recognising excellence in less developed regions and ERA chairs in order to attract outstanding academics to institutions with a potential for research excellence. The sector is keen to explore further the clear link between this part of the programme with the Ser Cymru proposal in the Science Strategy for Wales.

Implementing these opportunities

3.15. Structures should be set up to **facilitate strategic identification of priorities for the different instruments and aim to avoid duplication of effort.** Universities would be keen to play a central role in these structures. Joint meetings between Welsh Government as managing authority for Structural Funds and agencies involved in implementing Horizon2020 such as the National Contact Points is needed in order to share data on Horizon2020 participation.

3.16. This information exchange should highlight potential links to projects funded at the regional level and could be a key role for the new European Programmes directorate in WEFO to support the sector in realising the alignment of the funds.

3.17. The next year offers a unique opportunity for Wales to put in place a strategy incorporating both funding programmes in order to **build the critical mass for research and innovation to transform the Welsh economy.**

4. Consider how the Science Strategy for Wales and other relevant Welsh Government policies are aimed at maximising the opportunities to organisations in Wales from participation in the future EU research and innovation funding.

4.1. The sector welcomes the commitment in the Science for Wales Strategy to 'stronger coordination of resources and priorities across government, academia, industry, EU structural and research programmes to allow more focused delivery and raise impact'⁷.

⁷ P8 Science for Wales. A strategic agenda for science and innovation in Wales:
<http://wales.gov.uk/docs/det/publications/120306scienceen.pdf>

- 4.2. The sector also welcomes the commitment to support collaboration with the best everywhere⁸. Engagement with Horizon2020 should be central in delivering on this commitment.
- 4.3. The sector supports the **grand challenges approach** which is mirroring the new structure within Horizon2020. The sector, coordinated by Welsh Higher Education Brussels (WHEB), has already set up European Research Funding Groups in the four research priority areas: Health and Biosciences, Low Carbon, Digital Economy and Advanced Engineering and Materials and we look forward to working with Welsh Government and the Chief Scientific Adviser's office on ways to engage fully with the new programmes. **The sector foresees that these groups will be aligned closely with the National Research Networks proposed in the Strategy.**
- 4.4. The sector welcomes the commitment to fundamental research in the strategy and is keen to work with Welsh Government to ensure that the Excellent Science Base pillar of **Horizon2020 is fully utilised as complementary source of funding with the Ser Cymru Programme.** To reinforce the reputation of leading researchers and their teams in Wales, it will be crucial that ERC and Marie Curie opportunities are exploited to the full in order to attract the best researchers to Wales and supporting existing talent in Wales.
- 4.5.** The Science Policy for Wales emphasises the importance of developing collaboration between universities and business. Horizon2020 aims to support the whole innovation cycle from fundamental research to market and provides **new opportunities for HE and business to work together within the context of a new regional innovation strategy.**
- 4.6. In line with Commission thinking on the strategic use of Structural Funds, the Science Strategy also emphasises the need to **use these funds in a 'transformational way'**. Structural funds should play a central role in leveraging other external funding to Wales. Universities are keen to work with Welsh Government to develop this strategic approach rather than focusing on transactional projects.
- 4.7. The sector is encouraged that Horizon2020 is included in the **Welsh Government's new EU strategy** and looks forward to contributing actively to making this strategy a reality by using all European funding opportunities at its disposal.

⁸ ibid

ANNEX 1

Expanding International Capacity Through the Structural Funds

The following projects offer a few examples of where Structural Fund investments have laid the foundations for future collaborations and drawn down national and EU research and innovation funding.

DIPLE (Printing & Coating)

Funded through the ERDF Objective 1 in 2004, this project was led by Swansea University. The project aimed to match companies to growth areas identified by the Printing and Coating Forum Strategic Summit. The 5 technological areas forecast to grow are: Digital Technology and Colour Control, Industrial Printing, Packaging, Lean Manufacturing and Environmental Improvement. An integral part of the project was the development of strategic marketing support with the target companies in order for them to realise their full potential. From this work the FAST2LIGHT FP7 project has been developed. Funded by the EU's FP7 programme this project explores high-throughput, large area and cost-effective OLED production technologies. Consisting of a partnership of 13 partners from 8 countries with investment of more than €10m this project develops the international reputation expertise now present in Swansea University.

Centre for Nanohealth

Located at Swansea University the Centre for Nanohealth was begun in 2009 with support from the ERDF Convergence Programme. The project aims to establish the region as a world leading interdisciplinary centre offering a Research and Development, Demonstration and Deployment, and Skills innovation system for NanoHealth. It aims to promote Welsh SMEs to work on the development of new healthcare technologies from initial concept to the point where they can be deployed commercially. The AMETHYST project, funded by the EU's FP7, programme has since been developed through the Centre. Bringing together 8 organisations from across 6 countries this project is developing novel approaches to wound treatments which offer cost and safety benefits over current techniques.

Gas Turbine Research Centre

Cardiff School of Engineering's Gas Turbine Research Centre was in receipt of a £3.8 ERDF grant between 2006-2008 under the ERDF Objective 1 programme to relocate and upgrade two large-scale combustion rigs donated by international technology company QinetiQ, who selected the School of Engineering as the recipient ahead of several other EU contenders.

The Centre conducts research into more efficient fuel utilisation, alternative fuels and reduction of pollutants such as Nitrogen Oxide and fine exhaust particulates in power generation and aircraft turbines. Since its opening in October 2007, the GTRC has delivered a number of commercial contracts, involving Welsh companies, as well as participated in EU FP7 funded collaborative projects. The Centre's participation in FP7 funded projects 'H2-IGCC' (funded under FP7-Energy theme) and 'BRISK' (funded from FP7-Capacities/Infrastructures theme) have brought circa £700K of research grant income to date.

SWINGS

Cardiff School of Pharmacy was a key collaborator in an INTERREG Ireland-Wales IIIA project 'SWINGS' (Separations, Wales & Ireland – Novel Generation Science) lead by the Waterford Institute of Technology. The key objective of the SWINGS project was to identify and carry out laboratory research in emerging separation science techniques. This research involved the development of novel extraction and purification media for pharmaceutical and environmental applications and led to valuable collaborations with SMEs operating in this area both in Ireland and Wales. The SWINGS project has since lead to a successful bid to the FP7 Industry-Academia Partnerships and Pathways scheme for a new HIPODERM project (grant value of around £700K), which looks into skin cancer drugs using the microneedle technology developed at the Welsh School of Pharmacy. The four year project combines expertise from the School of Pharmacy, the Welsh company An-eX Analytical Services and two Irish partners, the Pharmaceutical and Molecular Biotechnology Research Centre at Waterford Institute of Technology and the company EirGen Pharm

Enterprise and Business Committee Inquiry into Horizon 2020

Response by the Higher Education Funding Council for Wales (HEFCW)

About HEFCW

- 1 HEFCW is a Welsh Government Sponsored Body established in 1992 under the Further and Higher Education Act. It assumed responsibility for funding higher education (HE) in Wales on 1 September 1993. It administers funds made available by the Welsh Government in support of the provision of education and the undertaking of research at higher education institutions (HEIs), and the provision of prescribed HE courses at further education institutions (FEIs). It also accredits providers of initial teacher training for school teachers.

Purpose

- 2 This paper presents initial responses to the issues under discussion by the Committee. There has not been time to seek approval of HEFCW's Council for this paper, which must therefore be regarded as a submission from officers only.

Conclusions

3. The key points from this submission are:
 - 3.1 The Horizon 2020 (H2020) proposals, published by the European Commission (EC) in November 2011 **present a significant opportunity for Wales to further raise its research quality and capacity for innovation, and to enhance international engagement and competitiveness**, thereby helping to transform the Welsh economy and contributing to *Europe 2020*¹, and the Welsh Government's strategy for higher education, *For Our Future*² and *Science for Wales (SfW)*³ objectives.
 - 3.2 The HE sector in Wales is well placed to make a significant contribution to **the proposed thematic objectives of the programme, especially in those areas of current strength**, including, but by no means exclusively, in areas aligned with the objectives of *SfW*. HE currently represents almost three quarters of all Welsh participation in the current framework programme (FP7).
 - 3.3 However, there are a number of key challenges:
 - a. The new programme will be **highly competitive** as universities from around Europe, and beyond, seek to compensate for national budget cuts to Research and Innovation (R&I).
 - b. There will need to be **adequate resources available** in the agreement of the EU's Financial Perspective 2014-2020, to deliver the new programmes, and linked programmes, such as Structural Funding (SF).

- c. A more strategic approach which **clearly aligns the different EU funding programmes** (in particular H2020 and SF), will help to ensure that opportunities for take-up from the programme are maximised in Wales.
- d. The capacity for HE in Wales to be successful in H2020 can be enhanced and supported through the new SF programme, with **investment in R&I from this programme at a scale that will make a difference**.

3.4 We trust that the information in this submission is of help to the Committee's inquiry, and we stand ready to assist further in any way that the Committee requires.

Issues under consideration

4 We address in turn each of the areas that the Committee wishes to consider in the course of its inquiry.

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

Participation by HE in the current Framework 7 programme

- 4.1 The proposals for the EU's new funding programme for R&I, Horizon 2020, published by the EC in November 2011, maintain core elements of its predecessor Framework 7 (FP7). In total, Wales has received over €84m from FP7 since 2007. The Welsh HE sector has been awarded 84% of the total funding to Wales and comprises a higher percentage of total Welsh FP7 activity (72%) than the UK average (60%).⁴ This reflects the relative lack of corporate and 'other research centre/ public body' (e.g. the Met Office) R&I activity in Wales, and highlights the importance of the HE sector in securing this funding for Wales.
- 4.2 Welsh performance is particularly strong in some fields, and less so in others. Within the co-operation strand of FP7, over 5.6% of the UK engagement in the Food, Agriculture and Biotechnology, and over 4% of the Nanosciences, Nanotechnologies, Materials and New Production Technologies cooperation, takes place in Wales.
- 4.3 Overall, the Welsh share of the total UK HE activity is around 3%, which is about the same as its current share of UK Research Council activity (about 3.3%). This probably reflects several factors: relative core underfunding (and the resulting smaller scale of research capacity, including actual numbers of academic staff); structure and organisation (which is already being actively addressed in Welsh HE); and the mix of subjects in HE in Wales relative to the rest of the UK, being orientated rather more to arts, humanities and social sciences than to the STEM subjects (which is where the larger grants lie).

- 4.4 The HE sector is co-ordinating its efforts on the current FP through the officers of Welsh Higher Education Brussels (WHEB) who have set up groups of leading academics in Wales to look at where the sector may establish international research partnerships which accord with the key Welsh Government research priority sectors (see below). These aim to significantly enhance the success of Wales in FP7, and its successor, H2020. The work of these groups aligns closely to priorities in SfW (such as increasing Wales' share of external research funding and the development of National Research Networks).

Horizon 2020 – opportunities & challenges for Wales

- 4.5 In principle, the EC's proposals for the H2020 programme offer a greater level of available funding, a wider range of opportunities, and more straightforward processes for the sector to engage with European funded R&I than previously; although **the competition for this funding will also be much greater.**
- 4.6 The proposals for a €80bn programme, an increase from about €53bn in 2007-13, split the funds between three main objectives or 'pillars' of : **excellent science** (€24.6bn); **industrial leadership** (€17.9bn); and **societal challenges** (€31.7bn).
- 4.7 These present significant opportunities for Wales and will contribute to wider European (e.g. *Europe 2020* and *Innovation Union*⁵) and Welsh Government (e.g. *SfW* and its programme for economic renewal⁶) objectives.
- 4.8 Europe's universities are planning an 'onslaught of applications to H2020'⁷ to compensate for national budget cuts. Even if H2020 gets the increased budget of €80bn being sought by the EC, many believe that **it won't be enough to satisfy the impending increase in funding applications.** The European University Association (EUA) has said recently: 'Only those who know how to deal with the system will be successful. H2020 will just not be big enough'.⁸
- 4.9 The proposals also include a single, revised set of rules to **simplify funding applications, reporting and auditing of the programme.** This will attract more academics to engage with the programme, reduce the administrative burden, especially for co-ordinators, and allow HEIs to support the professional development of the next generation of researchers by recruiting staff dedicated to H2020 projects. Greater simplification should also encourage participation from the business sector, including from SMEs.

Key objectives & their implications for Wales

- 4.10 **Excellent Science:** this pillar aims to further raise research quality; secure long term global competitiveness, and help to attract more of the world's best researchers to Europe.
- 4.11 These objectives are also core priorities in SfW, which further emphasises that **'Wales has to improve its performance in winning competitive research or R&D funding'**. It recognises that 'winning these funds is a true test of our international excellence'. The Welsh Government's strategy for higher education, *For Our Future*⁹, highlights that 'excellence in research has a vital role to play in both delivering social justice and economic prosperity'.
- 4.12 The proposed budget for the Excellent Science pillar (over €24bn) represents one third of the overall budget. It is also proposed that the budget for the European Research Council (ERC) should increase by 77% to €13.3bn within this pillar. Under FP7, academics in Wales have been successful in securing the highly prestigious ERC grants (having so far won €15.426m, around 2% of the UK share).
- 4.13 Also within the Excellent Science pillar, £5.7bn has been allocated to researchers' training and mobility under the Marie Curie Actions, an increase of 21% compared to FP7. However, there will be less funding available annually at the start of the programme. The Marie Curie Action is a highly competitive part of FP7 and the Welsh HE sector has been successful in accessing this funding (€12.696m, around 2.6% of the UK share to date). However, the proposed profiling of this funding will make this even more challenging for much of the duration of the H2020 programme.
- 4.14 The European Institute of Technology (EIT) element of the programme brings together research, education and innovation. Some MEPs have expressed scepticism over the proposed ten-fold increase in budget in EIT, and questioned how their benefits might be spread beyond the few that are funded within Knowledge and Innovation Communities (KICs)¹⁰. It is questionable whether Welsh HE will be able to take advantage of this funding to any great degree, in what some perceive will be an 'elitist' aspect of the new programme.
- 4.15 MEPs have also emphasised that the 'stairway to excellence' in H2020 must be designed in such a way as to encourage the 'first spouts of excellence': **The 'stairway to excellence' should lay the ground for participation of small units of embryonic excellence, such as small research groups and highly innovative start-ups.** Such an approach would be beneficial to Wales, which has such examples of smaller-scale and emerging excellence.¹¹
- 4.16 **Industrial Leadership:** this pillar aims to make Europe a more attractive location to invest in R&I, develop industrial leadership, and to help innovative SMEs to grow into world-leading companies. These objectives are mirrored in *SfW*.

- 4.17 Industry groups across Europe have already voiced their satisfaction with the EC's focus on applied R&I throughout the programme, and the significant role played by industry-driven research.¹² The proposals also target 15% SME participation in H2020.
- 4.18 Although there is significant industrial research undertaken in Wales, especially where business engages with universities in research to advance its products, processes and services,¹³ participation by industry in the current FP7 remains relatively low (around 2.5% of the UK share). However, **there is limited information on private sector participants in Wales, and this constrains the potential engagement by HE with these participants.**
- 4.19 SfW recognises that there is **a need to 'build strong links with our anchor companies...embedding them in the Welsh economy by developing close links with further and higher education institutions'**.
- 4.20 There is also the potential, for example, for the HE sector to support innovative SMEs in Wales to internationalise (an objective of the EC's proposals for the new SF programme¹⁴) and to work with some of the best international SMEs as partners in projects, through for example, their links with international alumni.
- 4.21 However, this would require there to be **clear synergies between H2020 and the new SF programme in Wales** (see below Section 5), and a **greater cross-over between the different strands of the H2020 programme**, so that R&D undertaken within universities is prioritised for activities funded under the Industrial Leadership pillar, where SMEs can transform research results into competitive products and services.
- 4.22 **Societal Challenges:** addresses the policy priorities of the Europe 2020 strategy and major concerns shared by countries in Europe and elsewhere.
- 4.23 It is presented as a 'natural successor' of FP7's co-operation programme, and divided into 6 areas. These broadly focus on health; food and agriculture; energy; transport; climate; and inclusive and secure societies.
- 4.24 Three of the H2020 challenges are mirrored and supported by the Grand Challenges priorities in SfW: **'Life Sciences and Health', 'Environment, Energy and Low Carbon', and 'Advanced Engineering and Materials'**; these coincide with the research priorities in *For Our Future*, which also highlights an additional strand: 'Digital Economy' (a theme also highlighted in H2020).
- 4.25 These well-defined areas of academic and business strength also fit well with what the EC terms 'smart specialisation', a concept which is underpinned by the premise that transformational science-led economies succeed because they are focused on a few areas, done really well.

- 4.26 Wales' HE sector exhibits excellence in several of the other key H2020 challenges including for example, **food and agriculture, marine and maritime research and the bio-economy.**
- 4.27 The EC emphasises that great societal challenges, and curiosity-driven research at the frontier of knowledge (under the Excellent Science pillar), will require **an increasingly multidisciplinary approach to research and innovation.** Research topics will be more flexible and open to different types of interdisciplinary projects. This will provide opportunities for strengthening HEIs' existing collaborations (such as between departments and universities) in Wales and enable new ones, both within and beyond Wales. However, **it will also be important for there to continue to be scope for smaller projects and collaborations** (see para 4.14 above).
- 4.28 Social sciences and humanities will be mainstreamed in H2020. These are areas in which Welsh HE already has particular strengths (para. 4.3 above) and it **will therefore be important for there to be greater clarity on how this mainstreaming will be implemented.**
- 4.29 The EC is committed to opening H2020 to international partners from across the globe. While this will be a welcome opportunity for Wales to enhance its excellence in collaborative R&I, researcher mobility, and raise its international profile, this could also create even greater competition for funding in some areas of the programme.

Assess the opportunity for synergies between H2020 and the future EU structural funds in Wales aimed at improving future participation in H2020

EC's proposals and recommendations

- 5.1 The regulatory proposals of both funding instruments (H2020 and SF) encourage the development linkages and synergies in the delivery of the programmes themselves. Both programmes are aligned to the strategic goals of Europe 2020, which are in turn aligned with Welsh Government policy (e.g. SfW).
- 5.2 The EC proposes that the next round of SF should be used to produce transformational and long-term change to address the causes of economic difficulty rather than its symptoms. The Commission also proposes that this activity should be **set within a R&I strategy which concentrates resources on a limited set of priorities (through smart specialisation)** and outlines measures to stimulate private investment.¹⁵
- 5.3 The EC proposals call for 'a more integrated approach for joined-up strategies with other EU policies and financial instruments'.¹⁶ This approach is in line with the EC's Common Strategic Framework,¹⁷ which recommends closer

alignment of cohesion (structural) funding with the new R&D programme under H2020.

- 5.4 Unlike the current period, **a project may receive support from one or more EU funding programme**. This welcome development would allow for example, a single project to receive support from both the ERDF and the ESF, or the ERDF and H2020.¹⁸
- 5.5 The EC's proposals for SF highlight that R&I is to be prioritised throughout cohesion policy.¹⁹ The draft ERDF regulations in addition stipulate that there should be a minimum allocation of 80% of the budget to R&I activities in More Advanced Regions and 50% in Less Advanced Regions. They propose that these area specific investment priorities will include **'enhancing research and innovation infrastructure capacities to develop R&I excellence and promoting competence'**^{20 21}
- 5.6 The EC's proposals also emphasise that ESF will contribute to 'Strengthening research, technological development and innovation, though the development of post-graduate studies, the training of researchers, networking activities and partnerships between HEIs, research and technological centres and enterprises.'²²

Proposals by the European Parliament

- 5.7 The issue of synergies between the FP and SF has been on the political agenda at European level for several years, and has been addressed and analysed by different bodies, including the Commission's 'Synergies Expert Group' (SEG), who produced a report in 2011.²³
- 5.8 This report emphasises that the future national / regional Operational Programmes for SF related to R&D should have a clear orientation on:
- Promoting local-global connectedness
 - Enhancing cooperation between academia and industry focused on the support of clusters
 - Improving and developing capabilities and skills for research, innovation and entrepreneurship
 - Promoting the modernisation of universities and research and technology organisations, including upgrading and renewing research equipment
 - Including Research Infrastructures in regional development strategies
- 5.9 Recommendations from this report have recently been endorsed by MEPs during their examination of the EC's legislative proposals, leading to the amendment process.²⁴
- 5.10 These MEPs have highlighted that:

- **‘Building greater synergy and as much complementarity as possible between H2020 and the structural funds is urgently required’.**

- **‘It is essential that these programmes are complementary and that bridges are built in both directions, aligning the two programmes’.**

As such, they emphasise that SF have a role to play – both ‘upstream’ and ‘downstream’ (i.e. in the sense of the process of innovation from concept to market) – with regard to the H2020 objectives.

5.11 Upstream from H2020, the SF can be used for capacity building , and here two recommendations stand out, where SF could be used to:

- finance equipment, human resource development, the creation of clusters in priority areas of H2020, and small grants for preparations of proposals for H2020

- fund ERC, Marie Curie or collaborative projects that meet the criteria of excellence but which cannot be funded due to budgetary constraints. H2020 would therefore confer a ‘seal of excellence’ on positively evaluated projects.

5.12 Downstream from H2020 – there are two recommendations which could be used to help smooth the passage from conception to market. SF could:

- finance or co-finance the follow up to H2020 research projects

- be used to encourage access to knowledge or to facilitate deployment of resulting knowledge in terms of economic or societal use.

What this means for Wales

5.13 **The EC proposals on synergies between the two programmes, which may be further strengthened (by the EP) during the amendment process,** would allow Wales to integrate activity across the different EU funding streams in new ways.

5.14 It would become possible to use SF (where in Wales we have an advantage over most other parts of the UK) to build capacity in R&I in areas of value to Wales that **could then provide a stronger platform for launching bids into the competitive processes such as H2020 (including prestigious ERC) and Research Council bids,** and leverage in to Wales other sources of funding and investment.

5.15 There is a need to build greater capacity within HE itself, which could be achieved through a change in focus in the new SF programme, especially as it relates to **priorities for investment and performance indicators** (where a

more flexible approach consistent with the new ERDF regulations could include support for research itself as an output in Wales).²⁵

- 5.16 By this means we could address the much rehearsed challenge of building capacity in R&I (in both universities and businesses, working in partnership) **on a scale that can compete effectively. This is primarily a matter of investment.**²⁶ If we chose to move in this direction in relation to SF in Wales, **it will be essential for funding allocations to be big enough to make a difference on the scale of operation of competitors across the UK and Europe.**²⁷
- 5.17 In the current programming period, there has been limited progress in exploiting the opportunities that arise from linking SF to FP7. There are a few *ad hoc* examples in Wales to date.²⁸ In the new programming period, it will be both possible and desirable to create the conditions that enable interaction in a strategic way and **on a scale that makes a real impact to Wales.**
- 5.18 A question we also posed in our evidence to this Committee's Inquiry into the EC's proposals for the new SF programme was **whether we can manage to construct processes within the management of the new programme that will enable us to capitalise on these opportunities. This will lie within our own discretion in Wales.**
- 5.19 There are many examples where, given the right conditions, there could be a positive impact on participation by Wales in H2020. For example, SF in Wales could be used to attract more world leading researchers to Welsh HEIs and industry, which in turn could boost the success rate of ERC applications and the retention of these staff. The need to attract more research stars to Wales is a core theme in the *SfW*.²⁹
- 5.20 Transnational activity proposed under SF, will enable the opportunity to work with other regions to build research capacity in Wales e.g. by investing in cross border research infrastructures, and to further develop the potential for international research collaboration and partnership.
- 5.21 This Committee's report into the *Draft legislative proposals for EU structural funds 2014-20* (February 2012)³⁰ concluded that the next round of SF should be used to **support transformational, long-term economic and social change in Wales working towards a high value, knowledge-based economy.** It highlighted that **prioritising research and development, knowledge exchange and innovation and building synergies between EU SF and EU research funding (H2020) was pivotal to that shift in economic transformation.**
- 5.22 It is as yet unclear how the priorities for the new SF programme, recently approved by Cabinet and announced by the Deputy Minister, will achieve these recommendations.³¹

What the Welsh Government should prioritise in seeking to shape the UK Government's position in the Council of Ministers, and feed these views into the negotiations taking place in Brussels (including the European Parliament)

Budgetary Negotiations

- 6.1 The budget available to EU H2020 programme will need to be sufficient to secure Europe's global competitiveness and, together with strategically linked funds such as SF, the economic transformation of regions such as Wales. The budget negotiations leading to the agreement of the EU's Financial Perspective 2014-2020 could have a significant impact on the level of funding that Wales will receive.
- 6.2 Influencing the UK Government to ensure that the approach taken is in the best interests of the whole of the UK's economy as it participates in these negotiations will be a key priority. The UK Government, and others such as Netherlands, Finland and Sweden, want to reduce the H2020 budget from the €80bn proposed by the EC to around €50bn. The European Parliament, on the other hand, has proposed a budget of €100bn.
- 6.3 It is within the interests of the HE sector in Wales, and Wales as a whole, to **secure the maximum budgets for both H2020 and SF**, especially in view of the significance the combination of this funding, through HE, will have for delivering SfW and, in turn, transforming the Welsh economy.
- 6.4 In terms of H2020, it will be particularly important to **ensure that the budget for the Excellent Science pillar is retained** and as a minimum that it represents at least one third of the overall H2020 budget. Key areas for Welsh HE will be ERC and Marie Curie; there will be less opportunity to take advantage of the EIT funding.

Co-ordination between EU-funding Instruments

- 6.5 The EC proposals emphasise that each Member State shall prepare a Partnership Contract which will set out 'an integrated approach to territorial development supported by the Common Strategic Framework (CSF) Funds **setting out – the mechanisms at national and regional level that ensure co-ordination between the CSF and other Union and national funding instruments**'.³²
- 6.6 For the reasons given under above (Paragraphs 5), the integration of EU funding streams will be an important focus for Wales in its negotiations with

the UK, and Brussels, especially in relation to the development of the Wales specific element of the UK's Partnership Contract, where **the EC will require that there are specific references to the links between H2020 and SF.**

Consider how the science strategy for Wales and other relevant Welsh Government policies are aimed at maximising the opportunities to organisations in Wales from participation in the future EU research and innovation funding.

- 7.1 The Welsh Government's current focus on key drivers for economic change, including the HE strategy and research excellence, economic priority areas, emerging work on selected industrial sectors, and on anchor companies, and work in progress on developing an Innovation strategy for Wales, are timely and opportune in relation to specifically promoting participation with H2020, and the strategically linked SF programme.
- 7.2 A call for evidence by the Welsh Government on *Innovation Wales* is now out, and it will be important that the emerging strategy is consistent with the principles outlined in this evidence. And that it addresses the Commission's expectations in respect of Smart Specialisation, which is likely to be an ex ante condition for receiving SF.³³
- 7.3 In our evidence to the Enterprise & Business Committee's Inquiry into the draft legislative proposals for EU Structural Funds for 2014-2020, and in our response to the Welsh Government's *Reflection Exercise* (Annex 1) we argued that **the challenge to us collectively is how to bring these policy elements together to best exploit the emerging European funding possibilities, and how best to draw the right people together to ensure that *Innovation Wales* is as productive as it can be, and plays to existing strengths – such as those highlighted in *SfW*.**
- 7.4 We have already emphasised (section 5, above), **the need for synergies between SF and H2020 to enhance the opportunities for organisations in Wales to participate in the future EU research and innovation funding; success will largely depend on our ability to create the right conditions in Wales.**
- 7.5 Working together, the Welsh Government, HE, and industry can help to build up further, and exploit the critical mass of excellence required to engage with H2020, which will in turn contribute to recovery and growth in the Welsh economy. **However, this is a process that will itself need significant investment.**³⁴

- 7.6 One important source for this investment, as we have argued above, is SF. SfW emphasises that SF ‘must only be used in a transformational way, including leverage of other, competitively awarded funds focusing on both the creative and physical capital that will require investment’. It is generally recognised that **this area needs to be developed further - in partnership with the HE sector**. It will be important that there is a clear strategy for promoting synergies in Wales; rather than it being only tackled at a project-based level.
- 7.7 SfW makes an important commitment to **enhancing fundamental research**, and it is investment in this area that will help to underpin the highest quality of research required to succeed in what will be a highly competitive process. It will be important for the proposed new ‘Star’ researchers and their teams, and for the proposed new National Research Networks, to contribute strongly towards H2020 aims, and there should in practice be no difficulty over this given the alignment of SfW Grand Challenge priorities with those of H2020.
- 7.8 SfW also emphasises the importance of **developing collaboration between universities and business**. H2020 aims to support the whole innovation cycle from fundamental research to market and provides new opportunities for HE and business to work together **within the context of a new Innovation Strategy for Wales**.

NOTES

¹ *Europe 2020. A European Strategy for Smart Sustainable and Inclusive Growth*: http://europa.eu/press_room/pdf/complet_en_barroso_007_-_europe_2020_-_en_version.pdf

² *For Our Future. 21st Century Higher Education Strategy and Plan for Wales*. See: <http://wales.gov.uk/docs/dcells/publications/091125hedocen.pdf>

³ *Science for Wales. A strategic agenda for science and innovation in Wales*: <http://wales.gov.uk/docs/det/publications/120306scienceen.pdf>

⁴ European Commission, *FP7 Welsh Participants*, released 28 February 2012

⁵ *State of the Innovation Union 2011*: http://ec.europa.eu/research/innovation-union/pdf/state-of-the-union/2011/state_of_the_innovation_union_2011_brochure_en.pdf#view=fit&pagedmode=none

⁶ *Economic Renewal: a new direction*. See: <http://wales.gov.uk/docs/det/report/100705anewdirectionen.pdf>

⁷ *Research Fortnight* 18 April 2012, p.19

⁸ *Research Fortnight* 18 April 2012, p.19

⁹ *For Our Future. 21st Century Higher Education Strategy and Plan for Wales*. See: <http://wales.gov.uk/docs/dcells/publications/091125hedocen.pdf>

¹⁰ UKRO - *Horizon 2020: First Exchange of Views in Parliament*, 27 Jan 2012

¹¹ *Working Document on Specific Programme Implementing Horizon 2020 – The Framework Programme for Research and Innovation (2014-2020)*:
<http://www.europarl.europa.eu/sides/getDoc.do?type=COMPARL&reference=PE-488.047&format=PDF&language=EN&secondRef=01>

¹² *Research Fortnight*, 14 December 2011, p.19

¹³ SfW, p.11

¹⁴ *Proposed Regulations (Common Provisions)*:
http://ec.europa.eu/regional_policy/sources/docoffic/official/regulation/pdf/2014/proposals/regulation/general/general_proposal_en.pdf

¹⁵ *Proposed Regulations (Common Provisions)*, p.137, ANNEX IV

¹⁶ *Proposed Regulations (Common Provisions)*: p.4

¹⁷ *Elements for a Common Strategic Framework*:
http://ec.europa.eu/regional_policy/sources/docoffic/working/strategic_framework/csf_part1_en.pdf

¹⁸ *Proposed Regulations (Common Provisions)*: Art 55 (8) states that on condition that an expenditure item is not funded twice under the Structural Funds or any other EU instrument, a single operation is allowed to receive support from both the ERDF and ESF or the ERDF and Horizon2020.

¹⁹ *Proposed Regulations (Common Provisions): Article 9: Thematic objectives*, p.35

²⁰ *Proposed Regulations (Specific Provisions concerning the ERDF)* p11, para 1a:
http://ec.europa.eu/regional_policy/sources/docoffic/official/regulation/pdf/2014/proposals/regulation/erdf/erdf_proposal_en.pdf

²¹ ERDF Regs, p.11-12: The Investment Priorities under this theme are a) Enhancing R&I infrastructure and capacities to develop R&I excellence and promoting centres of competence, in particular those of European interest; b) Promoting business R&I investment, product and service development, technology transfer, social innovation and public service applications, demand stimulation, networking, clusters and open innovation through smart specialisation; c) Supporting technological and applied research, pilot lines, early product validation actions, advanced manufacturing capabilities and first production in Key Enabling Technologies and diffusion of general purpose technologies.

²² *Proposed Regulations on the ESF, Article 3*, p13, para 2c:
http://ec.europa.eu/regional_policy/sources/docoffic/official/regulation/pdf/2014/proposals/regulation/esf/esf_proposal_en.pdf

²³ See: http://ec.europa.eu/research/regions/pdf/synergies_expert_group_report.pdf

²⁴ *Working Document on Specific Programme Implementing Horizon 2020 – The Framework Programme for Research and Innovation (2014-2020)*:
<http://www.europarl.europa.eu/sides/getDoc.do?type=COMPARL&reference=PE-488.047&format=PDF&language=EN&secondRef=01>

²⁵ The draft ERDF regulations include: 'area of newly built or equipped research infrastructure facilities' (in square meters) and 'number of research jobs created in assisted entities' (ERDF Annex). There needs to be flexibility in the interpretation of these indicators (by WEFO) so HEIs are not required to only include enterprise/ commercialisation activity

²⁶ In our evidence to the Enterprise and Business Committee's (January 2012) Inquiry into the EC's proposals for the new Structural Funds programme, and our response to the Welsh Government's *Reflection Exercise*, we emphasised that despite committing all that we can, we nevertheless spend less per research member of staff in our universities than every English region except the East Midlands, and with the highest region, the East of England (around Cambridge) spending fifty per cent more than Wales.

²⁷ In our evidence to the Enterprise and Business Committee's recent Inquiry into the EC's proposals for the new Structural Funds programme, we noted that Saxony, for example, already focuses both its national and EU funding on improving innovation, investing around 40% of its ERDF alone in strengthening innovation, science and research. This has had such a transformational effect that part of Saxony does not now qualify for the next round of Convergence funding

²⁸ For example, Professor Tim Claypole of Swansea University (a winner of an EU RegioStars award in 2009) presented at two EU seminars on how a Convergence project on printing technologies progressed into a successful FP7 consortium. He will be presenting to a REGI-ITRE Joint *Public Hearing on synergies between EU cohesion policy and Horizon 2020*, at the European Parliament, 29 May 2012

²⁹ The proposed funding for the ERC will increase by some 77% over what has been available through FP7

³⁰ See: <http://www.senedd.assemblywales.org/documents/s5513/February%202012%20-%20Draft%20Legislative%20Proposals%20for%20EU%20Structural%20Funds%202014-2020%20Report.pdf>

³¹ *Principles and Priorities for 2014-2020 EU programmes in Wales*: <http://wales.gov.uk/docs/wefo/news/120508eufundingpriorities.pdf>

³² *Proposed Regulations (Common Provisions): Article 13* p.37&38

³³ *Proposed Regulations (Common Provisions)*, p.137, ANNEX IV

³⁴ See for example: http://195.88.100.72/resource/files/2009/06/12/connected_university_report_NESTA.pdf

HEFCW is pleased to share with the Welsh Government its views on the strategic direction for the future Structural Funding programmes in Wales, by way of responding to this *Reflection Exercise*, having already participated in related event workshops.

Our focus here is essentially on two of the key themes highlighted in the *Reflection Exercise* document, 'Priorities for Investment' and 'Strategic/ Local Delivery', as we feel these will have significant implications for the shaping of the other themes provided in that document.

The European Commission proposes that this next round of funding should be used to produce transformational and long-term change to address the causes of economic difficulty rather than its symptoms. The Commission also proposes that this activity should be set within a Research & Innovation (R&I) strategy which concentrates resources on a limited set of priorities and outlines measures to stimulate private investment.

This is timely and opportune for Wales, given the Welsh Government's current focus on key drivers for economic change, including the higher education strategy, economic priority areas, emerging work on the various industrial sectors and work in progress on developing an R&I strategy for Wales.

In our evidence to the Enterprise and Business Committee's Inquiry into the draft legislative proposals for EU Structural Funds for 2014-2020, we argued that the challenge to us collectively is how to bring these policy elements together to best exploit the emerging European funding possibilities, and how best to draw the right people together to ensure that this strategy is as productive as it can be, and plays to existing strengths – such as those that will be highlighted in the forthcoming *Science Policy for Wales*.

The EC proposals would allow us to integrate activity across the different EU funding streams in new ways. It would become possible to use Structural Funds (where in Wales we have an advantage over most other parts of the UK) to build capacity in research and innovation in areas of value to Wales that could then provide a stronger platform for launching bids into the competitively awarded Framework Programme (to be called Horizon 2020 in the next round), and leverage in to Wales other sources of funding and investment.

By this means we could address the much rehearsed challenge of building capacity in research and innovation (in both universities and businesses, working in partnership) on a scale that can compete effectively. This would have wide-ranging

and long term benefits to the economy and society of Wales as a whole. It is partly a matter of structure and organisation (which is already rigorously being addressed in higher education), and partly of investment where, despite committing all that we can, we nevertheless spend less per research member of staff in our universities than every English region except the East Midlands, and with the highest region, the East of England (around Cambridge) spending fifty per cent more.

The issue of synergies between the Framework Programme and Structural Funding has been on the political agenda at European level for several years of course, and has been addressed and analysed by different bodies, including the Commission's 'Synergies Expert Group' (SEG), who produced a report in June 2011 (see: http://ec.europa.eu/research/regions/pdf/synergies_expert_group_report.pdf).

This emphasises that the future national / regional Operational Programmes for Structural Funding related to research and development should have a clear orientation on:

- Promoting local-global connectedness
- Enhancing cooperation between academia and industry focused on the support of clusters
- Improving and developing capabilities and skills for research, innovation and entrepreneurship
- Promoting the modernisation of universities and research and technology organisations, including upgrading and renewing research equipment
- Including Research Infrastructures in regional development strategies

The report also highlights that in order to promote greater synergies between education and research/ innovation programmes, the Commission's Lifelong Learning Programme (to become 'Education Europe' from 2014) as well as the European Social Fund (ESF) should become more 'innovation-orientated' and support more strongly skills for innovation, entrepreneurship, cooperation between universities and economic sectors.

National Endowment for Science, Technology and the Arts (NESTA) has identified a key role for 'the connected university' in driving recovery and growth in the UK economy. It highlights that 'the impacts generated through building up and exploiting a critical mass of excellence is evident. But this exchange can take time and be difficult and costly – and most importantly it needs the building of communities which include businesses, academics and policymakers working together and developing long-term relationships, spaces where networks are encouraged to grow' (see: http://195.88.100.72/resource/files/2009/06/12/connected_university_report_NESTA.pdf).

The question we posed in our evidence to the committee was whether we can manage to construct our management arrangements in ways that enable us to capitalise on the opportunities that linkage of the sort described above could offer. This issue will lie within our own discretion in Wales, and it is a testament to the foresight of the Welsh Government that we can contribute to the thinking on these processes at an early stage, through this *Reflection Exercise*, and subsequently we hope, through other channels, as the architecture for the programmes in Wales is put into place.

Finally, if we choose to move in this direction, it will be essential for funding allocations to be big enough to make a difference on the scale of operation of competitors across the UK and Europe. Saxony, for example, already focuses both its national and EU funding on improving innovation, investing around 40% of its ERDF alone in strengthening innovation, science and research. This has had such a transformational effect that part of Saxony does not now qualify for the next round of Convergence funding.

In case it is helpful, we enclose a copy of HEFCW's evidence to the Enterprise and Business Committee, where we provide more information in support of this response.

We will be glad to provide further detail if you wish.

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