

Agenda – Economy, Infrastructure and Skills Committee

Meeting Venue:

Committee Room 2 – Senedd

Meeting date: 17 October 2018

Meeting time: 09.30

For further information contact:

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Private pre-meeting (9.30–09:40)

- 1 Introductions, apologies, substitutions and declarations of interest**

- 2 Motion under Standing Order 17.42 to resolve to exclude the public from item 3 and 4**

- 3 Forward Work Programme – Spring options**

(09:40–09:55)

(Pages 1 – 5)

Attached Documents:

EIS(5)–23–18(P1) Forward Work Programme spring options



4 Draft letter(s)

(09:55–10.00)

(Pages 6 – 11)

Attached Documents:

EIS(5)–23–18(P2) Letter from Chair to the Chair of the Finance Committee:
MIM funding for major infrastructure projects

EIS(5)–23–18(P3) Letter from Chair to Welsh Trunk Road Agency: The State of
Roads

5 Scrutiny of Leader of the House and Chief Whip

(10.00–11.00)

(Pages 12 – 37)

Julie James AM, Leader of the House & Chief Whip

Richard Sewell, Deputy Director, ICT Infrastructure Division

Adam Butcher, Senior Engagement & Policy Manager

Attached Documents:

EIS(5)–23–18(P4) Research brief

EIS(5)–23–18(P5) Evidence paper from the LoHCW

6 Scrutiny of Chief Scientific Advisor

(11.00–12.00)

(Pages 38 – 55)

Professor Peter Halligan, Chief Scientific Advisor

Chris Hale, Head of the Welsh Government Office for Science

Dr Delyth Morgan, Head of Research Programme Development

Attached Documents:

EIS(5)–23–18(P6) Research brief

EIS(5)–23–18(P7) Evidence paper from the Chief Scientific Advisor

7 Paper(s) to note

(12.00–12.05)

(Pages 56 – 73)

Attached Documents:

EIS(5)–23–18(P8) Letter from CLA Chair to the Cab Sec E&T – Regulations made under Trade Bill report

EIS(5)–23–18(P9) Welsh Government response – Apprenticeship Levy One Year On

EIS(5)–23–18(P10) Mobile UK business rates further information

Private debrief (12.05–12.15)

Agenda Item 3

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Agenda Item 4

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Agenda Item 5

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Written Evidence – Economy, Infrastructure and Skills Committee

The Mobile Action Plan for Wales was launched in October 2017. The plan was developed following consultation with local authorities, the mobile industry and colleagues from across the Welsh Government.

The Action Plan focuses on nine key areas where the Welsh Government can use the levers at its disposal to support creating the right environment to further improve connectivity in Wales. However, it is important to recognise both the opportunities and limitations of what the Mobile Action Plan for Wales can deliver.

Coverage in Wales

Wales has particular characteristics in terms of topography and population density which pose challenges for mobile operators when deploying mobile infrastructure. The challenges are reflected in the Ofcom Connected Nations update report 2018 which provides a snapshot of mobile coverage for Wales and the other home nations.

Coverage has improved over recent years but the report shows that coverage in Wales is not as extensive as in the other home nations. Indoor call coverage is available in 80 per cent of premises of Wales compared to 92 per cent across the UK. Across the UK, 86 per cent of the landmass is covered for data services (3G and 4G) from all four mobile operators compared to 70 per cent in Wales. Notspot areas where there is no data coverage account for 5 per cent of the Welsh landmass compared to only one per cent across the UK.

Telecommunications Policy

Telecommunications policy is not devolved to Wales, the key levers for improving mobile coverage reside with DCMS and Ofcom. Using the levers available to them in a way that can benefit Wales, particularly rural and very rural areas, will have the biggest impact on improving mobile coverage. The Welsh Government has engaged with both the UK Government and Ofcom to highlight how the powers available at a UK level could improve connectivity in Wales.

Coverage Obligations

Introducing coverage obligations attached to spectrum auctions is a key lever at Ofcom's disposal to leverage improved mobile coverage in Wales. Ofcom carried out a consultation earlier in the year on their proposals to introduce obligations for the auction of 700Mhz spectrum. The properties of this spectrum are well suited to deliver mobile coverage in rural and very rural areas. As such, it is vital in improving mobile coverage in Wales.

In response to the consultation the Welsh Government felt that the proposals reflect its view that better coverage is needed where people live, where they work, where they spend their spare time and while they are on the move. Geographic coverage obligations, as proposed in the consultation, would help meet those needs and recognise the need to prioritise premises where there is currently no coverage.

The Welsh Government welcomed the recognition that coverage in Wales still falls behind other nations. However, Ofcom proposed geographic coverage obligations that were lower in Wales (83 per cent of landmass) than in either England or Northern Ireland (92 per cent of landmass). Our response highlighted the inequity and unacceptability of this proposal and highlighted that setting a lower target for Wales will simply perpetuate the current inequality of coverage.

The Welsh Government's response to the consultation also suggested a fundamental change to the basis of the auction to precipitate greater coverage uplift across the UK and establish equity of coverage. This would require geographic coverage obligations to be provided at no cost to the Mobile Network Operators (MNOs) to allow more investment to deliver to a greater proportion of the landmass than is currently anticipated. The auction could then be undertaken not on the basis of the amount that the MNOs are prepared to pay for the spectrum but on the amount of coverage they are prepared to invest in.

Ofcom intend to publish the outcome to the consultation shortly.

Regional Roaming

It is clear that a one size fits all approach to regulation of the mobile industry, as is currently the case, does not serve the needs of rural Wales. The Welsh Government has a track record of encouraging Ofcom to take a geographically differentiated approach to regulation, which disproportionately supports harder to reach areas, where regulation is designed to meet local and regional needs. A key element of this is domestic roaming. This would allow customers to roam across operators in much the same way as foreign tourists can do using non British SIM cards. This would not have an impact on complete notspots but would improve connectivity in partial notspot areas where coverage is not available from all four operators. Indeed in their recent paper 'Further options for improving mobile coverage: Advice to Government' Ofcom advocate exactly this approach. Their assessment shows that regional roaming could improve coverage by 2-3 percentage points for the holders of the 700 MHz coverage obligations and by 5-10 percentage for the other operators.

Mobile Action Plan for Wales

As highlighted above, telecommunications policy is not devolved to Wales and therefore the Mobile Action Plan focuses on nine key areas where the Welsh Government can use the levers at its disposal to create the right environment to further improve connectivity in Wales.

The plan purposely did not set out in detail the eventual solutions but instead provided a roadmap for improving mobile phone coverage in Wales. Neither was it anticipated that there would be a quick fix. The plan concentrates on tackling the barriers to good mobile connectivity particularly in rural and very rural areas by working with the mobile industry, local authorities and Ofcom.

Ongoing engagement with industry and other key stakeholders has continued. A meeting was held in June in Llandrindod Wells attended by nineteen local and

national park authorities, three of the four mobile network operators and their industry body, Mobile UK to discuss the role that local authorities could play in improving mobile connectivity. A further meeting is planned for later in the Autumn to discuss further proposals.

Planning

As set out in the action plan, research was commissioned to inform changes to permitted development rights for telecommunications equipment to improve mobile connectivity. This research was completed in December last year and published in January 2018. The research was commissioned to investigate if permitted development rights as they currently apply to mobile telecommunications infrastructure are fit for purpose and are able to help deliver the Welsh Government's aspirations for improvements to telecommunications coverage across Wales.

Following the completion of the research, proposed changes to telecommunications permitted developments rights formed part of a wider consultation on the Town and Country Planning (General Permitted Development) (Wales) Order (GPDO), and this is due to close on 28 September. The consultation includes the following telecommunications proposals :

- Changes to mast heights allowed under permitted development;
- Changes to mast widths allowed under permitted development;
- Changes to the definition of a small cell antennae and small cell systems;
- Changes to permitted development rights in relation to antennas, small antennas and small cell systems;
- Extended permitted development rights in relation to emergency use of mobile telecommunications equipment.

Once the consultation has been completed the responses will be considered and, if merited, new planning rules introduced. It is proposed that any amendments to Part 24 (Telecommunications) of the GPDO will be split in to two phases, with changes to mast height, mast width and the emergency use of mobile telecommunications forming part of an amendment order coming in to force in spring next year. Further amendments to Part 24, including changes relating to antenna, are proposed to be introduced later next year.

In addition to the consultation on permitted development rights, a consultation was conducted earlier in the year on changes to Planning Policy Wales (PPW). The consultation sought opinions on a range of changes to the document, including to the mobile telecommunications section to update it to recognise the economic benefits of having good, reliable and fast communication networks. The proposals encouraged planning authorities and network operators to work collaboratively to identify areas of limited connectivity and ways the planning system can help to address this. The consultation also sought to clarify the situation regarding mobile phone developments and health. The consultation only drew one response from the mobile industry.

The responses are currently being analysed, with a view to publishing the new version of Planning Policy Wales in December this year.

The action plan also identified a need for mobile network operators to work with the Welsh Government to revise and, if appropriate, consolidate the code of best practice and Technical Advice Note (TAN19) on mobile network infrastructure development. This element is dependent on the changes to both permitted development rights and Planning Policy Wales and so cannot be progressed until these have been agreed.

In addition to the above, work is also progressing on the preparation of the National Development Framework (NDF). The National Development Framework will be a 20 year national spatial plan for Wales, which will sit alongside PPW. The purpose of the NDF is to support the delivery of Prosperity for All by developing a clear long term spatial direction for Government policy, action and investment and for others who the Government works with.

The NDF will achieve this by identifying key growth areas, the type and location of infrastructure we need, by coordinating the delivery of housing, employment and connectivity infrastructure, and by directing key partners to help deliver the national spatial vision.

The NDF will recognise the importance of digital infrastructure to Wales's future prosperity and well being. It will support the delivery of digital infrastructure to help achieve the Welsh Governments objectives to improve broadband and mobile phone coverage across Wales.

A consultation on the Issues, Options and Preferred Option took place between April and July this year and the responses are currently being assessed. A draft NDF is due to be issued in 2019 and the final document published in September 2020.

Public Assets

In support of open data and transparent government, work is ongoing across departments within Welsh Government to develop a Digital National Asset Register (DNAR), which could be used to provide information to mobile operators. The current intention is that the register will be hosted on the existing Space Cymru Portal.

The longer term aspiration remains to include all public sector land and building assets in Wales on a DNAR as we continue to encourage public sector partners to fully utilise the e-PIMS (electronic property information mapping system). Via the work of the National Assets Working Group the Welsh Government continues to champion best practice collaborative asset management and to maximise the value from our own land and buildings resources.

Thinking creatively about the question of assets, their location, and who else could use them, offers the best opportunity to maintain and improve service delivery with reduced resources.

In order to drive forward initiatives and good practice collaborative asset management activity across the Welsh public sector, the government funded the Welsh Public Sector Collaborative Estate pilot in the Cwm Taf area.

A report was published in September 2017 confirming that there are significant opportunities if public services work together and take a strategic approach to property and property management across geographical and organisational boundaries. It highlighted opportunities to integrate services; improve customer experience; create wider efficiencies; rationalise the estate and improve the quality of public service assets by investing more in fewer, shared physical assets.

To add impetus to the work of NAWG the Welsh Government has made funding available to support the property collaboration agenda, with an initial emphasis on improved asset mapping. This forms part of the new 'Asset Collaboration Programme in Wales (ACPW)' and the NAWG needs to ensure that this new programme will prioritise initiatives that support asset collaboration across Wales. It is hoped that this funding programme will help to accelerate the progress in establishing a publicly accessible Digital National Assets Register in Wales.

Having a clear picture of all public sector assets in Wales provides an important dimension to maximising positive outcomes for people and communities whilst also delivering value for money.

As part of engagement with local authorities, the use of their assets has been discussed and could form part of activity to tackle specific notspots. For example, officials have held discussions with representatives from Newport Council regarding their efforts to map their public assets in support of their ongoing LoRaWAN project across the region.

Non- Domestic Rates

Welsh Government undertook a call for evidence exercise earlier in 2018 into non-domestic rates. It sought from the mobile industry clear evidence on the measurable improvements in mobile coverage of introducing a reduction on non-domestic rates for new mobile masts. Officials have now assessed the evidence received. Although the mobile industry made coherent arguments for the introduction of non-domestic rates relief on new masts, they did not provide detailed evidence to underpin a compelling case for the introduction of a rates relief scheme. Similarly they did not provide information on the business case mechanics, thresholds or measures that they use to determine whether to deploy a site, nor the precise way in which rates relief could therefore trigger an investment decision. Without this information, introducing a scheme for rates relief on new mobile masts in Wales could not be supported.

The respondents to the call for evidence did, however, provide a number of valuable insights and useful ideas. These are currently being assessed by officials as to whether they could form the basis of a more focused rates relief scheme. In particular, whether a relief scheme could be combined with other interventions in order to tackle specific notspots. Work to develop a proposal is underway and more information will be available later in the Autumn.

Regulation

As highlighted above, officials continue to have discussions with colleagues in Ofcom regarding the regulatory approach in Wales. Welsh Government has been pressing for a geographically differentiated approach to regulation in Wales. These discussions have focused on geographic coverage obligations for upcoming auction of 700Mhz spectrum and regional roaming.

Innovation and emerging technologies

The topography and population density in Wales throws up specific challenges for mobile coverage. Extending coverage as far as possible is likely to require innovative solutions particularly in rural areas. Mobile connectivity and new 5G technology also have the potential to underpin innovative technical solutions for both businesses and the public sector in Wales.

The Mobile Action Plan highlighted the importance of developing and testing new technologies in Wales. The plan highlighted work already underway in Teifi Valley and on Llanbedr airfield. Since the action plan was published work has continued the support the development of new technologies.

Officials continue to have discussions with officials at Newport Council regarding the ongoing rollout of their LoRaWAN project to social housing within the county. Officials are working to establish contact with local manufacturers of small cell technology to support technology already in use by contracted partners via colleagues in Welsh Government Innovation Team.

Officials have engaged with the 5G Innovation Centre (5GIC) at the University of Surrey which brings together leading academic expertise and key industry partners in a shared vision. The 5GIC helps to define and develop the 5G infrastructure that will underpin communication infrastructure of the future. The Welsh Government has also commissioned Innovation Point to identify and develop up to three strategic 5G projects capable of delivery.

Officials are also engaging with Ofcom to encourage closer collaboration, along with other countries to further understand the potential applications of 5G and how they could work here in the UK.

There are numerous examples across Wales where the Welsh Government is supporting the development, introduction and testing of new mobile technologies, as follows:

- Officials Worked with Menter Mon and Gwynedd Council teams to develop and deliver an Internet of Things playground in Glynllifon Country Park to be launched on 12 October.
- Arranging workshops and a business breakfast on internet of things in the Haven Enterprise Zone in early October, in collaboration with Valero, RWENPower, & Pembrokeshire college.

- Engaged with tourism stakeholders along the “Wales way” in order to identify any mobile notspots and mobile capacity issues

Infill solutions

A business case is being developed for publicly funded mobile infrastructure in areas that have no mobile connectivity. It is envisaged that this will be combined with other interventions in defined areas of Wales to improve mobile connectivity. The viability of this type of intervention, the costs, ownership and funding models will be assessed in the business case. Work to identify potential candidate sites is underway. Officials have met with their counterparts in the Scottish Government to discuss the public sector infill project in Scotland and to learn the lessons from their roll-out. In their paper ‘Further options for improving mobile coverage: Advice to Government’ Ofcom advocate a public infill approach as likely to be an effective tool for covering total not spots.

Transport

An option to improve mobile connectivity was included as a future contract addition as part of the procurement of the Wales and Borders rail services contract. This was designed to be in line with the Mobile Action Plan ambitions to improve 4G mobile connectivity across Wales. Work is currently underway to explore how this facility can be used to enhance mobile connectivity across the whole Wales railway network.

Officials are also following the project on the trans Pennine route in England where a trial is taking place to put high bandwidth broadband on trains using 5G type technology. If successful, the findings of that project could be used to improve mobile connectivity on routes in Wales and exploit the opportunities that 5G has to offer.

Emergency Services Mobile Communications Project

The emergency services mobile communications programme (ESMCP) will provide the next generation communication system for the three emergency services (police, fire and rescue, and ambulance) and other identified public safety users. The contract to deliver the infrastructure supporting the Emergency Services Network was awarded to EE. However, in some areas, including some very rural areas in Wales, the UK Government will fund the construction of additional masts in order to infill coverage along some routes.

Public funded mobile masts will be future proofed by deploying larger mast bases and robust towers capable of supporting multiple operators. This will allow multiple mobile operators to install their transmission equipment to provide coverage in remote areas where building a mast is not commercially viable. There are 63 such masts planned for Wales. Officials continue to engage with the programme to understand the likely impact on mobile services across Wales.

A recent UK Government review into the Emergency Services Mobile Communications Programme (ESMCP) is complete and the programme will now be proceeding on the basis of incremental adoption.

Major events and special projects

Officials are working closely with colleagues within the Major Events team to facilitate discussions with organisations and individuals with responsibility for events and special projects across Wales. As outlined in the action plan officials have compiled a list of key events in Wales. Discussions with event organisers are focussing on determining the requirements of mobile coverage within the immediate events area and surrounding communities, that see spikes in population and high footfall during event dates. Discussions have focussed on the mobile coverage barriers faced by event organisers and the steps needed to rectify poor connectivity for attendees.

Discussions are ongoing with organisers of the Hay Festival, Festival #6, the National Eisteddfod, "Sweetspot" (organisers of the Tour of Britain and the new Wales 360 mountain bike event), Velethon Wales, The Wales Way walking route and the Newport Marathon.

Agenda Item 6

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Economy, Infrastructure and Skills Committee

Professor Peter Halligan – Chief Scientific Adviser for Wales (CSAW) Welsh Government

Purpose

1. The CSAW Prof Peter Halligan took up his post in March 2018. This paper provides the EIS Committee with background material and a brief progress update ahead of the planned scrutiny session on Wednesday 17 October 2018. This includes a description of his cross-portfolio role and supporting office (recently agreed with Cabinet), brief updates on previous/ongoing CSAW-related programmes, and future plans to use the role as part of a wider outward-facing promotion of science (science diplomacy) designed to enhance Wales competitive image, challenge potential negative associations, foster greater international collaboration and recognition of Wales's science and research profile.

Introduction

2. The importance of growing a knowledge-based economy built upon science, skills and innovation is widely regarded as essential for global competitiveness. It is a key element of most governments' strategies, intent on sustainable economic and social improvement. The volume of scientific information and evidence, however, has grown exponentially and many governments have appointed science advisers to help inform policy and decision making, believing an accurate, unbiased synthesis of relevant science evidence is one of the most valuable contributions a research community can offer to democratic decision-makers. Public attitude surveys confirm strong support for the use of scientific advice as part of government policy making.

3. Different models of science advice reflect different political cultures. In the UK, the position of **Chief Scientific Adviser (CSA)** is well established, with similar roles adopted by several countries, such as Australia; Canada; Cuba; the Czech Republic; India, Ireland; Malaysia and New Zealand. The UK science advice to government system is well-regarded, with each government department having a Chief Scientific Adviser and the Government Chief Scientific Adviser (GCSA) reporting directly to the UK Prime Minister. In 2006, Scotland appointed its first Chief Scientific Adviser, with Ireland following in 2007. In 2010, First Minister Carwyn Jones appointed Professor John Harries as the first CSAW (2010-13). In March 2018, Professor Halligan began as the new Chief Scientific Adviser for Wales (CSAW) succeeding Professor Julie Williams, who stepped down in the Autumn of 2017 to take up a leadership role in the newly-created Dementia Research Institute.

4. At its most reductionist level, science advice is the exercise of harnessing and synthesising scientific knowledge, with policy being the set of principles that guide actions in order to achieve a particular outcome. While science advice is valuable and essential, it remains one of several factors for policy makers and one of several considerations for decision makers.

5. With a view to learning from best practice and establishing relevant links, Prof Halligan has engaged extensively since taking up his role in March with the research, business and policy community both inside and outside Wales, and in particular has developed productive links with counterparts in Canada; Scotland; Ireland; Quebec and Europe together with the recently-appointed UK GCSA, senior members of the Department for Business, Energy and Industrial Strategy (BEIS); UK Research and Innovation (UKRI); research organisations (HEFCW, Universities Wales, National Physical Laboratory); Universities and businesses (Airbus, IQE).

6. Supported by the officials in the new **Welsh Government Office for Science (WGOS)**, the key elements of the role of the CSAW include:

- ensuring that government policies and decisions makers are informed by the best scientific evidence in support of public decision-making;
- championing the role of science in Government and promoting Wales intellectual, innovative and cultural achievements nationally and internationally;
- representing and acting as an advocate for Welsh science in Wales, Whitehall and Europe;
- Inspiring the next generation of scientists and encouraging diversity in STEM;
- Managing Sêr Cymru programme delivery and departmental research budgets

7. In providing advice on cross-cutting policy problems, the CSAW secures evidence from all sciences including the natural and physical sciences; mathematics; engineering; technology; social science and the humanities. The arts, humanities and social sciences are vital for a thriving economy, vibrant culture and cohesive society. They help deliver the skills which are crucial to the services sector, which makes up 80 per cent of the UK economy and over 70 per cent of the Welsh economy.

8. From discussions with counterparts in the UK Government, Canada, Scotland, Ireland, Quebec and other European countries, structured advice can sometimes require a formal report, involving lengthy consultation and input from advisory panels or academies. However, informal methods typically play a role in the everyday business of policymaking and many CSAs find that much of their time is spent contributing or offering advice informally at the earliest (and opportune) stages of policy development.

9. The current areas of CSAW responsibility, recently agreed with Cabinet, can be summarised under five pillars:

- ◆ **Science Advice for Policy**
- ◆ **Promotion & Communications**
- ◆ **Programme Management & Delivery;**
- ◆ **Science Capability & Skills**
- ◆ **Analytics on Research funding & performance**

Science Advice for Policy

10. Providing scientific advice to the 'First Minister, Cabinet and administration' is a key element of the CSAW role – designed to ensure government policies and decisions are informed by scientific evidence and strategic long-term thinking. This means leading and co-ordinating scientific efforts within Welsh Government and engagement with the wider scientific community in Wales and beyond.

11. To support this broad advisory role, effective advisory systems, in and outside government, are required, including accessing existing networks of leading scientists and contacts in different fields, across the UK and internationally. Professor Halligan has already met his Scottish and Irish counterparts, the new Canadian CSA and several European CSAs. The CSAW also meets regularly with the UK GCSA and attends (where possible) weekly CSA network meetings of UK Departmental and Agency CSAs, where collective expertise and good practice is shared. Such meetings are a vehicle to highlight and promote Wales' research excellence and explore synergies and opportunities in the wider UK.

12. Refreshing the previous Science Advisory Council for Wales, the CSAW has convened a new independent 'Wales Science and Innovation Advisory Council' (WSIAC). In addition to being co-chair for this group of distinguished members of the UK Science, Business and Innovation community, he also chairs the internal Science

Strategy Network (SSN), designed to tap into the reservoir of multidisciplinary, cross-portfolio staff and facilitate scientists making links across Welsh Government.

Promotion and Communications

13. The profile of a country's research, intellectual vitality and innovation is one of its most valuable soft power assets. It shows intrinsic quality and future innovation potential for engagement and inward investment from the wider world. A country's reputation strongly correlates with people's willingness to visit, work, study, invest and buy products and services from it. Strong reputation leads to higher levels of expectation but also graduate interest, staff affinity, philanthropy and employee advocacy.

14. While small in scale, the Welsh research base is both productive and efficient. It is one of Wales' few indigenous engines capable of returning innovation competitiveness and generating future inward investment. Wales produces a disproportionately high share of the world's published academic articles and highly-cited articles but awareness and recognition of research and innovation is not sufficiently well known.

15. To remedy this, communication will form a key part of the CSAW's work, with plans being worked up to develop new materials, events and opportunities to better market Wales science and broader research contribution. It will be important to project a consistent, holistic brand, including highlighting Wales' current and historical intellectual vitality - its research and innovation achievements, alongside existing tourism and business promotion. This aligns with the first recommendation from the Reid Review of Government Funded Research and Innovation in Wales (Reid 2018) – to set up a Welsh Research and Innovation London Office (WRILO), to increase Wales profile in the UK Capital; pursue funding opportunities; draw in talent and investment and represent the Welsh Government.

16. 'Science diplomacy' refers both to the role scientific research activities can play in fostering positive international relations and to the use of diplomacy to support international science. Growing Wales Science diplomacy will be an important tool for generating awareness and recognition essential for growing future international strategic collaboration. This includes activities where science can help facilitate and foster more international collaboration and promotion of national interests. With global grand challenges, such as climate change, ageing populations and infectious diseases - strategic international scientific engagement and collaboration is critical. The CSAW has already had meetings with scientists from the Canadian Province of Quebec; the Basque Region and Ireland and presented on behalf of Wales at leading EU Science advisory conferences in Bulgaria and Estonia. Wales already has a strong record of collaboration across Europe through EU, pan-European and other multilateral and bilateral initiatives. It is important that we seek agreement to continue to collaborate with European partners on major science, research and technology initiatives, after BrExit. Wales currently has the highest international collaboration share of UK countries with co-authors from outside Wales.

Programme Management & Delivery

The Sêr Cymru Programme

17. Building a strong and successful scientific community was one of the Welsh Government's core aims when it launched *Science for Wales* 6 years ago. A key driver behind this strategy was the addressing a recognised investment gap with other parts of the UK and the need to grow research capacity in Wales to support the wider economic and national development of Wales.

18. With this in mind, Professor John Harries, the first CSAW, established a number of programmes under the 'Sêr Cymru' ('Stars Wales') brand to help begin create a globally-

competitive science and technology research base in Wales. Launched in late 2012, the first phase of Sêr Cymru was directed at attracting a small number of the brightest and best scientific researchers and their teams from across the world to Wales but also at supporting indigenous talent by developing three national research networks in each of three 'Grand Challenge' areas: *Life Sciences and Health*; *Low Carbon, Energy, and Environment*; and *Advanced Engineering and Materials* capable of funding large scale doctoral training schemes. The initiative paved the way for the Welsh Government and universities to work together to support research chairs in each of these 'Grand Challenge' areas. To boost capacity further, all the research-active Welsh universities have also been investing heavily in infrastructure, such as new buildings and equipment.

19. A second programme phase of Sêr Cymru (II) followed in 2015, again focusing on capacity-building but this time securing promising early-stage researchers involving significant EU structural and Horizon 2020 funding. With more than £30m coming from the European Commission, through Horizon 2020 and Structural Funds, Wales is the first country to have used both these European Funding sources in a synergistic manner to support research.

20. An report has been produced annually, detailing the progress of this programme over the past 5 years and Professor Julie Williams (as previous CSAW) had the opportunity in October 2016 to update this committee on Sêr Cymru I & II.

21. The first phase of the Sêr Cymru programme draws to a close this year and, while too early to draw definitive conclusions, as elements are still operating, a recent commissioned independent report (to be published late in November) found that, overall, the two strands of Sêr Cymru I had performed well - exceeding original output targets and securing close to £75m of net additional research income.

22. To date, the Sêr Cymru I and II programme elements have successfully supported 3 National Research Networks, 12 Research Chairs, 9 Rising stars (future research team leaders), 115 research fellowships (including those supporting researchers returning to academia following a career break) and more than 340 PhD students and postdoctoral researchers.

23. The programme has attracted considerable international and UK interest. The influence of Sêr Cymru can be seen in the recent UK funding calls, openly based on this programme: Universities UK International (UUKi) Rutherford Fund Strategic Partner Grants and the UK Research and Innovation Future Leaders Fellowships (FLF). Given the experience in seeking new talent internationally, it is encouraging that Wales had secured, to date, 14 per cent of the 100 Rutherford Fellowships, more than twice the national share predicated by national population of 4.8 per cent.

24. Since the launch of *Science for Wales back in 2012*, the UK and Wales have experienced significant changes, in the both economic and higher education / research policy landscape. In addition , Wales now benefits from having a much more robust evidence base charting our international performance, including the *International Comparative Performance of the Welsh Research Base* (Elsevier, 2013 & 2016), *The Case for Growing STEMM Research in Wales* – (Halligan & Bright, 2016) and the last Research Excellence Framework outcomes. Although the primary driver behind Welsh Government policy remains: 'the building of a strong and dynamic science base that supports the economic and national development of Wales' the *Science for Wales* strategy has now been overtaken by UK developments, Welsh Government reviews and a series of Welsh government legislation and policies including the *Well-being of Future Generations Act 2015*, *Prosperity for All (2017)* and the *Economic Action Plan (EAP, Nov. 2017)*, rather than which has been overtaken by the developments. To inform and reflect this, the final *Science for Wales 2017* report provided a review of progress over the

previous 5 years as well as highlighting the changing science landscape in both Wales, and the UK, in the prodromal period before BrExit.

25. To build on the success and of the positive brand of the programme, the CSAW is currently working on plans to progress a new phase of this programme, '**Sêr Cymru III**', which will ramp up, as the financial costs of the earlier phases ramp down, maintaining affordability and retaining the brand at a time of straitened budgets. The aim here is to extend the previous programmes in collaboration with interested stakeholders, seeking a 'shared partnership' so that new R&I programme elements continue to harness public, academic and private sector collaborative working, as effectively as possible.

26. In line with this new programme, a new Sêr Cymru Research Chair has just been awarded to Aberystwyth University in the field of Bovine TB, funded by £2m from WEFO and £0.6m match-funding from the university. A further £1.1m has been guaranteed by the Chief Veterinary Officer for Wales, evidencing her support for this important area of research, combatting the huge and costly problem that Bovine TB represents for parts of Wales. This is a good demonstration of how inter-divisional collaboration can be facilitated through funding mechanisms such as Sêr Cymru.

27. In addition to new UK funding policy initiatives (such as the UK Industrial Strategy and UKRI) existing and forthcoming influences likely to impact science and research policy in Wales, include **Ellen Hazelkorn's** 2016 Post-compulsory education review, the Welsh Government's *Economic Action Plan (EAP)* and the more recent Graeme **Reid**, review, alluded to above.

28. Hazelkorn recommendations for the establishment of a future **Tertiary Education and Research Commission for Wales (TERCW)** are being taken forward, where responsibility for higher and further education, work-based learning and Welsh Government funded research and innovation will be brought together. The plan is for Research and Innovation Wales (RIW) to be incorporated as a statutory committee and the reference point in TERCW where it can engage with Research England and UK Research and Innovation (UKRI). The establishment of RIW is actively designed to promote the exploitation of research and innovation knowledge, by driving integration of the links between pure and applied research, innovation, skills and education, industry, business, public bodies and local authorities and other key stakeholders.

29. In 2017, the *EAP* confirmed the ambition to secure a more competitive and fair economy, by growing productivity to help generate income that could deliver high quality public services and well-being for Wales. To help create a prosperous and fair society, the *EAP* identified the 'engine' of this prosperity as growing research, innovation and development of the right skills base. Innovation, in particular, involves the development of new or improved products, processes or thinking, which can lead to an improved quality of life.

30 In his review Reid (2018) noted that while '*the research and innovation ecosystem in Wales is strong and includes strikingly successful examples of university-business collaboration and research impact*' ...'*the research base does not have the scale needed to deliver its full potential to the people of Wales.*' Reid also noted that European Structural Funds have played an important role in Wales, in addressing the shortfall in both UK research and innovation funding in Wales, by comparison with other UK regions. Since 2000, the investment of EU funds has helped mitigate the decline in Wales' economic performance. Investment in research and development has more than doubled since 2000, from £351m to £716m, driven by increased private sector investment and keeping pace with UK averages. Universities in Wales have received a significant amount of funding from European Structural Funds and this continues to provide vital

investment and funding for projects and infrastructure that contribute towards economic and social growth in Wales.

31. Reid's review also noted that the '*long-standing structural weaknesses in the research and innovation ecosystem*' in Wales had been masked by the availability of EU structural funds and their withdrawal could render Wales at a disadvantage to other parts of the UK in securing access to the new large, competitive funding increases, announced by UK Research and Innovation (UKRI). As such, Welsh universities could be disproportionately disadvantaged by the loss of the Structural Funding, given the longstanding high levels of historical dependency.

32. Finally, Reid pointed out that the growing UKRI budget now presents major opportunities for Welsh businesses and universities to win sizeable amounts of additional funding. This can help ensure Wales increases its competitiveness in the research and innovation sector given that Brexit will bring a major shift away from EU WEFO funding towards this UKRI competitive-awarded funding. In his review, however, Reid suggests that unless the current low levels of un-hypothecated funding, relative to the rest of the UK are addressed, Wales will not have a research and innovation ecosystem fit for competition. Reid indicates that the degree to which this weakness is addressed will have a major influence on Welsh performance, in the increasingly competitive UK-wide landscape for funding from UKRI, businesses and research charities.

Science Capability & Skills

33. **STEM in Education** - *Science for Wales* called for a more engaging and relevant science curriculum and for more robust and respected science qualifications, both of which are being implemented and are bedding-in through 2018 and beyond. Pioneer schools and practitioners are working with Welsh Government on the new curriculum, including new science and maths areas. It is understood that the results of their collaborative work will be published in the new year for further scrutiny. Pupils took the new GCSE science qualifications this year, with reassuring results. More young people taking up the option of studying science, especially the three single sciences is to be warmly welcomed.

34. Historically, about two thirds of the cohort took GCSE Science qualifications, with one third taking a range of vocational alternatives, often Level 2 BTEC - which precluded further science study at A Level. The Cabinet Secretary for Education has clearly indicated she expects that by 2021 every pupil will sit a science GCSE. Already, in this summer's results, nearly all Year 11 students sat at least one of our new GCSE science qualifications – the first time these have been formally taken by candidates. Entries for individual sciences (chiefly pupils taking triple science) rose pleasingly: Biology up 12 per cent; Chemistry up 11 per cent and Physics up 10 per cent. The A*-C pass remained stable at 9 in 10 achieving those grades but, reassuringly, more students took individual sciences (within a 50 per cent increase in pupils taking some combination of GCSE sciences). A higher proportion gained the top A* - A grades and, at A Level, Biology, Chemistry and Physics A*-C grades also went up this summer.

35. **The National Science Academy (NSA)** - First set up in 2010, the NSA has supported outreach activities, through grants to organisations engaging children, young people, teachers, parents and guardians, aiming to increase our future workforce of scientists and engineers.

36. In 2015 the NSA undertook a high-level strategic review of its previous two rounds of funding. The strategic priorities were subsequently defined to:

- Favour projects proposed for funding which target children aged 7-14 and their parents/guardians (the ages when they are considering and deciding whether to

study science subjects, with parents and guardians forming a very significant influence on such choice).

- Favour projects breaking down barriers to studying STEM subjects, especially subjects where girls are underrepresented.
- Provide long-term stability/certainty for programmes seen to be performing best to maximise continued delivery.

37. Since April 2015 NSA funded over 20 STEM enrichment projects – an investment of over £2.7m. It is forecast to deliver 870 STEM enrichment events for over 186,000 pupils/students (most aged 11-14 years) together with 462 CPD (continuous professional development) events for over 2,800 teachers.

38. Recently, the NSA secured funding from WEFO to run an innovative £8.2 m STEM enrichment proposal. It will be led by NSA, in partnership with Cardiff, Swansea, Aberystwyth and Bangor Universities and the Institute of Physics. It seeks to establish and increase 'Science Capital' capacity, through a targeted suite of intensive STEM enrichment interventions (such as interactive 'hands-on' experiments; STEM related inquiry-based activities; roadshows; STEM-related career awareness; demonstrations, STEM-related virtual and augmented reality technologies; exhibits; etc.). The proposal will target cohorts of participants, aged 11-14 years (over 5,000 pupils), sourced from up to 30 schools in the West Wales and Valleys, over a three year period. It is forecast to deliver over 140,000 hours of activities. We particularly want to encourage the taking of GCSE triple sciences (Physics, Chemistry, Biology) by more pupils than at present.

39. The overall scheme will be underpinned a ground-breaking longitudinal cohort evaluation, featuring a critical and unique impact evaluation, assessing how effective the STEM enrichment interventions are, related to pupil uptake of GCSE science subjects (from a mandatory single science through to a maximum choice of triple science subjects).

40. **Women in Science** - The Women in STEM Board, which is Ministerial-chaired, was set up to monitor and oversee implementation of the recommendations of the 2016 '*Talented Women for a Successful Wales*' report. Several members agreed to establish a separate Task and Finish Group to focus on several of the external-facing recommendations from the report, such as promoting and developing work on cross-sector outreach, engagement and mentoring networks across Wales.

41. Science-related business and research are crucial to Wales' success. Women are underrepresented in this workforce and Wales cannot afford to lose half of its potential scientists and technologists. This under-representation of women in STEM is a UK long-standing and a more global phenomenon – representing a waste of knowledge and talent.

42. Many of the NSA's funded programmes have been directed in whole or part to stimulating girls' interest in science and particular STEM subjects. NSA funding has also enabled professional learning (communicating research) training for over 57 researchers - 41 of them being women, to provide valuable female role models.

43. Finally, the CSAW acts as **Head of Profession** for **Science and Technical staff**. Maintaining a strong cadre of scientists and engineers in government is essential to managing and using science and engineering effectively. This carries a remit to ensure the scientific skills and training of staff and officials in agencies, such as Natural Resources Wales (NRW). The CSAW also undertakes some development activities and dissemination events and communications, from the UK-wide Government Science & Engineering or GSE network.

Analytics on Wales' Research Funding & Performance

44. A key function of WGOS is to provide access to relevant research intelligence on Wales performance, by benchmarking research and innovation performance and comparing this with high quality external competitor regions and nations. This information can be used to inform strategic information-based decisions, that will allow Welsh Government to identify national strengths and providing a basis for facilitating engagement across the UK and beyond. In identifying such trends WGOS plan to help improve outcomes and demonstrate operationally efficient performance which in turn can inform success stories that can be used to promote Wales as a place on the way to an even more prosperous future. Comparisons with with similar regions and nations assist with new and strengthened collaborations.

45. The UK Charter for Science and Society calls for public policy and debate to be enhanced by more extensive and purposeful engagement with all sectors of society, with the views of the public being considered, alongside evidence from scientists and engineers. The WGOS is currently planning a study to assess the awareness, understanding and attitudes towards science and research amongst the general public in Wales. The proposed study, 'Science in Wales Barometer: Public Views on the Value of Science', will be the first of its kind in Wales. It will be specifically designed to understand the public's attitudes, understanding of and engagement with, science and science-related matters.

Agenda Item 7

Ken Skates AM
Cabinet Secretary for Economy and Transport

8 October 2018

Dear Ken

Scrutiny of regulations made under the Trade Bill

Thank you again for providing evidence on 12 February to both the Constitutional and Legislative Affairs Committee and the External Affairs and Additional Legislation Committee in relation to the UK Government's Trade Bill. Your evidence assisted us in developing our [report](#) on the Welsh Government's Legislative Consent Memorandum on the Trade Bill.

In that report, we confirmed our intention to report separately on the scrutiny of regulations made under the Trade Bill. We have been monitoring the Trade Bill's progress through the UK Parliament and, ahead of committee stage in the House of Lords, we have now finalised that separate report.

I am pleased to enclose our Report on the Scrutiny of regulations made under the Trade Bill. The report has been laid in the Assembly this afternoon.

I have written separately to George Hollingbery MP, the Minister for Trade Policy, the Rt Hon Alun Cairns MP, Secretary of State for Wales, and the Rt Hon David Lidington MP, Chancellor of the Duchy of Lancaster and Minister of State.

This letter is copied to the Rt Hon Carwyn Jones AM, First Minister of Wales, Julie James AM, the Leader of the House and Chief Whip, Mark Drakeford AM, the Cabinet Secretary for Finance, David Rees AM, the Chair of the External Affairs and Additional Legislation Committee, and Russell George AM, Chair of the Economy, Infrastructure and Skills Committee.



Yours sincerely

A handwritten signature in black ink that reads "Mick Antoniw". The signature is written in a cursive style with a horizontal line underneath the name.

Mick Antoniw AM

Chair

Croesewir gohebiaeth yn Gymraeg neu Saesneg.
We welcome correspondence in Welsh or English.



Written Response by the Welsh Government to the report produced by the Economy, Infrastructure and Skills Committee entitled “Apprenticeship Levy: One Year On”

Skill Policy Overview

In February 2017, the Welsh Government published its ‘Apprenticeships Skills Policy’¹. The policy is aimed at aligning apprenticeships to the needs of the Welsh economy so that the skills system is responsive to industry changes, as well as investing in areas that will provide improved economic and social returns.

During September 2017, the Welsh Government published its National Strategy, ‘Prosperity for All’², it forms the backbone of all policy development in Wales. The strategy identifies skills as one of the priorities furthermore the other priorities also rely on the skills agenda - early years, housing, social care, mental health and employability.

In December 2017, to support delivery of ‘Prosperity for All’, the Welsh Government also published its Economic Action Plan for Wales³. It contains key actions in relation to skills, including: aligning economic regions to those used for other footprints including Regional Skills Partnerships; and introducing a strategic planning system for education and skills delivery across post-16 education.

The Employability Plan, published on 20 March, sets out how the Welsh Government will support those furthest from the labour market, the economically inactive and those at risk of redundancy, into work⁴. ‘Working Wales’, the new employability programme from the Welsh Government, is being rolled out and it aims to simplify employability support for unemployed and economically inactive individuals.

Detailed responses to the report’s recommendations are set out below:

Recommendation 1: The Committee calls on the Welsh Government to keep the membership of the new Welsh Apprenticeship Advisory Board under review and ensure there are suitable pathways for all employers to influence the work of this Board. To this end, the Board should work transparently and ensure its papers and findings are published and disseminated in a timely and appropriate manner.

Response: Accept

The Wales Apprenticeship Advisory Board (WAAB) was established in March 2018. It is an independent employer-led board that will provide advice and recommendations to the Wales Employment and Skills Board (WESB) and Welsh Ministers on matters relating to apprenticeships frameworks in Wales. The Board will

¹ <http://gov.wales/topics/educationandskills/skillsandtraining/apprenticeships/apprenticeships-skills-policy-plan/?lang=en>

² <http://gov.wales/about/programme-for-government/?lang=en>

³ <http://gov.wales/docs/det/publications/171213-economic-action-plan-en.pdf>

⁴ <http://gov.wales/topics/educationandskills/skillsandtraining/employability-plan-for-wales/?lang=en>

publish its key findings on a regular basis, including independent research on the new approach to Apprenticeship Standards in England in 2019; and consulting on plans to update the architecture for apprenticeships through an apprenticeship matrix. WAAB will operate initially for a period of 18 months, and its future role and membership will be reviewed in autumn 2019.

Financial Implications: None.

Recommendation 2. The Committee calls on the Welsh Government to build on the momentum created by the Levy and encourage greater engagement between employers and young people. Engagement should seek to promote inclusivity and diversity across frameworks, including through the new Inclusive Apprenticeships Working Group, which should publish its action plan and share it with this Committee within 12 months of its first meeting.

Response: Accept

We are building an inclusive apprenticeship programme that encourages engagement across protected groups. To this end we have engaged via NTFW, an Equality and Diversity Champion, whose role includes working to promote equality for women in the workplace and assisting providers in challenging gender stereotyping in certain industry sectors. The Champion has mapped equality and diversity good practice across the apprenticeship provider network. Apprenticeship providers have undertaken self assessments to determine both strengths and improvement areas and they have produced a work plan identifying strategies, activities, training and resources required to drive improvements.

Welsh Government have procured a comprehensive Equality toolkit to support the apprenticeship providers and employers and this includes specific modules on gender identity, stereotyping and unconscious bias. Over the last few years we have driven forward actions to increase the number of disabled people and other protected groups undertaking an apprenticeship. Working with Remploy and the apprenticeship provider network, we aim to create a new brokerage service to match those who are participating with the Working Health programme into apprenticeship opportunities. We have also published a comprehensive equality toolkit to support our apprenticeship providers, including specific modules on gender identity, stereotyping and unconscious bias.

Work has commenced on the new Disability Action Plan for Apprenticeships. This has been developed in partnership with disabled people's organisations and other sector representatives to identify actions that will break down the barriers to disabled people accessing apprenticeships. The Plan will focus on practical actions to ensure that support packages are available for individuals, employers and our apprenticeship providers. It will also look at how we can make reasonable adjustments in order to make apprenticeships more flexible.

We aim to launch the Action Plan on December 3rd which is International Day of Persons with Disabilities. The launch will take place at a workshop which we are holding in conjunction with the Equalities and Human Rights Commission for

employers. The event entitled “Increasing Diversity in Apprenticeships – the untapped talent pool” aims to sell the benefits of having a diverse workforce and dispel any preconceptions that may exist.

Financial Implications: None. Any additional costs will be drawn from existing programme budgets.

Recommendation 3. The Committee calls on the Welsh Government to work with the UK Government and other devolved nations to simplify the administrative process for employers and find commonality between the UK and devolved nations’ approaches.

Response: Accept in Principle

Existing formal arrangements include the National Occupational Standards (NOS) Governance Group, which meets monthly. The NOS Governance Group is working with the IfA to ensure that NOS remain freely available to those employers and awarding bodies working in England wishing to use NOS to underpin their products. Members include devolved nation officials and representatives from Skills Development Scotland. Remit includes maintaining UK-wide occupational standards and seeking greater alignment between the three Celtic nations and England of Standards which underpin Apprenticeship Frameworks in order to minimise confusion and cross-border disparities for employers and learners.

A Four Nation Group of senior officials has met intermittently since 2016, to discuss common professional and technical education issues. Its initial central purpose was to prepare the ground for meetings between Skills Ministers from all four countries of the UK. Remit includes providing a forum for identification and discussion of important UK-wide strategic issues where an informed and co-operative approach on Professional and Technical Education would support the best interests of learners, employers and local communities across the four nations. This is attended by the SHELL Group Director.

A Four Nation Apprenticeship Group of apprenticeship policy officials meet on a termly basis to take stock of current developments and share approaches on policy, including systems for developing apprenticeships, approaches to integrating engagement programmes and engaging young people. The group last met in Belfast in May. The next meeting is planned for this November in Cardiff.

Financial Implications: None.

Recommendation 4. The Committee calls on the Welsh Government to consider the recommendations made in “The Great Training Robbery”, and act on those that are applicable to the Welsh context

Response: Accept

“The Great Training Robbery” report recommends that an emphasis is placed on quality above quantity, which is very much our approach in Wales. Whilst we have a target figure of a minimum of 100,000 apprenticeships by 2021 our policy is focused on ensuring that the right opportunities are being created in the right areas (both in terms of framework levels and geographically) so that individuals, businesses and the economy can flourish. To drive the development and delivery of apprenticeships at higher levels we are increasingly investing in technical areas and priority sectors to address skill shortages needs and gaps. Whilst we note that the recommendation is not to place a focus on numbers, for information purposes, there have been over 24,000 apprenticeship programme starts achieved during 2016/17 and a provisional 16,000 in the first half of 2017/18 which puts us well on the way to our target.

Other areas that were pinpointed in the report do not apply to Wales such as the voucher system and employer co-investment in training costs.

Financial Implications: None. Any additional costs will be drawn from existing programme budgets.

Recommendation 5. The Committee calls on the Welsh Government to issue high-level information on what support for workplace learning is available to employers in Wales, including apprenticeship and wider workplace training, and to disseminate that information through the WAAB and employers’ representative bodies or organisation.

Response: Accept

We are already providing high level information on apprenticeships via the Skills Gateway for Business (SGfB) to support workforce development. The SGfB is an established access point for businesses of all sizes to obtain information and guidance on skills and employment support and provides a platform for both skills development and business support services in one place. It promotes the importance of training, skills development and employability support providing the user with self-help sections and signposting facilities, positioning itself as the place for businesses to seek solutions to their needs.

The SGfB contains a wide range of information on Welsh Government and European Social Fund funded skills support and employability programmes (including Apprenticeships) which are categorised to enable clear signposting and identification of the appropriate provision that would meet business requirements.

<https://businesswales.gov.wales/skillsgateway/>

The SGfB includes an interactive skills self-assessment which gives an overview of the business’s immediate skills needs and creates a bespoke report with links to programmes of support. This is supported by a telephone helpline which offers a call back option and further signposting to available appropriate funded support. A face to face advisor support service can be accessed via the helpline or through self-referral which can also support the business with their skills and training requirements.

The SGfB performs an effective one stop shop solution for skills, training and workforce development. It contains content on skills, training and employability issues such as access to on line skills course and a dedicated Labour Market Information section.

The Apprenticeship Levy Communication Toolkit is available on the SGfB platform: https://businesswales.gov.wales/skillsgateway/sites/skillsgateway/files/documents/Apprenticeships%20Toolkit%20for%20Employers_0.pdf

As the WAAB becomes firmly established we will work with the Board to ensure that information on consultation and other activity is openly available. The Board will publish its key findings on a regular basis, including independent research on the new approach to Apprenticeship Standards in England in 2019; and consulting on plans to update the architecture for apprenticeships through an apprenticeship matrix.

Financial Implications: None. Any additional costs will be drawn from existing programme budgets.

Recommendation 6. The Welsh Government should be clear on the impact its focus on higher level apprenticeships will have on lower level apprenticeships. Where possible, the impact should be mitigated and the number of lower level apprenticeships reduced at a pace that is in line with the provision of alternative training arrangements.

Response: Accept in Principle

We have a responsibility to break the cycle of low-skills, low-pay and improve people's life chances. For many people – particularly those with low qualifications – low-paid work is not providing a stepping stone to a higher-paid job, and instead people are becoming trapped in low paid employment. Our central focus is on progression into higher level training. The disadvantaged have the most to gain from learning new skills that lead to career opportunities and the apprenticeship programme provides both through:

- the actions we have taken to ensure that lower level apprenticeships are not an end point but the start of the journey;
- publishing a comprehensive equality toolkit to support providers and employers which includes specific modules on gender identity, stereotyping and unconscious bias;
- working to increase the number of disabled people undertaking an apprenticeship, for example, Remploy matching those who are participating in the Work Choice programme into apprenticeships; and
- developing an action plan with interested groups to support people with disabilities (to be published this autumn).

We have systems and processes in place to monitor and evaluate the impact of the Foundation Apprenticeship (level 2) restrictions that were put into place in 2016. In July 2018, a symposium was held in collaboration with the Wales Centre for Public Policy (WCPP) to identify and consider potential solutions to job progression in low

paid and foundational economy sectors. WCPP is in the process of preparing a report and the symposium and producing recommendations based on this. We are continuing to review Foundation Apprenticeship provision, specifically in relation to the low paid sectors, and are analysing the most appropriate way to continue to support such sectors.

Financial Implications: Financial implications will be considered depending on the recommendations from the WCPP Report.

Recommendation 7. The Committee calls on the Welsh Government to ensure that provision is made for people to access apprenticeships that will enable them to meet the challenges that will be posed by automation as part of the fourth industrial revolution.

Response: Accept

In Wales we are prioritising apprenticeship investment into expanding Higher Apprenticeships in STEM and technical subject at levels 4 and 5 (HNC/D equivalent), to create the next new generation of professionals to drive innovative practices, create new products, and raise productivity levels. Higher Apprenticeships are helping to plug the technical skills gap and boost productivity through creating new routes for young people into middle-skill technical jobs (where the greatest skills shortages remain) or where we fall down against competitor nations. Expanding Higher Apprenticeship delivery responds to the Diamond Review⁵ recommendation for a better range of work-focused short-cycle higher education qualifications. In 2016/17, 11,130 apprentices were undertaking a Higher Apprenticeship – accounting for 24 per cent of the total number of apprentices in learning.

From this September, Digital/ICT Degree Apprenticeships (at level 6) will be available and shortly after, we will offer Degree Apprenticeships in Engineering. We will continue the work we have started with employers (in key sectors) to integrate Apprenticeships into their workforce plans, in order to support those already in work and those new to the labour market. The Regional Skills Partnerships are considering regional skills requirements from major infrastructure and investment projects, a number of which have a strong foundation in STEM subject areas.

Digital Literacy Skills is included in the Essential Skills element of all apprenticeship frameworks.

Financial Implications: A budget has been agreed with HEFCW. Initial estimates for the delivery of degree apprenticeships stand at around £20m, for the first three years of its operation.

Recommendation 8. The Welsh Government should keep under review the percentage of young people entering a workforce to undertake an apprenticeship, and how many apprenticeships are being used to up-skill existing staff.

⁵ <https://beta.gov.wales/review-higher-education-funding-and-student-finance-arrangements-final-report>

Response: Accept

We are currently evaluating the numbers of new entrants and the numbers of learners who are being up-skilled. We do not presently have a target for new entrants but we do have a programme in place to encourage increased new entrants. We have the SME incentive to attract apprenticeships in the 16-19 age group. Details can be found at:

https://businesswales.gov.wales/skillsgateway/sites/skillsgateway/files/documents/aprenticeship_small_business_employer_incentive_programme.pdf

Financial Implications: None. Any additional costs will be drawn from existing programme budgets.

Recommendation 9. The Committee calls on the Welsh Government to reconsider its assumption that working in foundational sectors equates to a cap on skills and attainment. The Committee calls for clarity from the Welsh Government on the training and support available in place of Level 2 apprenticeships, and how the qualifications available to employees in the foundational sectors prepare them for higher-level learning.

Response: Accept

We are working closely with the employability and skills division. As mentioned in response to Recommendation 6, a symposium was held in July in collaboration with the Wales Centre for Public Policy (WCPP) to identify and consider potential solutions to job progression in low paid and foundational economy sectors. WCPP is in the process of preparing a report and the symposium and producing recommendations based on this.

There is a requirement to communicate what we mean by Foundational Economy Programme. The Foundational Economy, in its entirety, is extremely far reaching and our intention is not to cover such a broad area.

We have undertaken some initial scoping to consider options for providing Foundation Apprenticeships at level 2 in non priority areas moving forward, as the policy direction of prioritising higher level skills will leave a substantial gap in this area. Our aim is to increase the life chances of individuals by offering a route to progress from level 2 to level 3 and beyond. Apprenticeships at level 2 should be regarded as a stepping stone not a final destination. They should be viewed as a way to provide a viable method for moving into more fulfilling and better paid job opportunities although it may be that this sits outside of apprenticeships depending on the specific sectors.

Financial Implications: None. Any additional costs will be drawn from existing programme budgets.

Recommendation 10. The Committee calls on the Welsh Government to task WAAB with exploring how employers and training providers can work together to improve value for money outcomes that represent good quality and best fit for the employer, whilst protecting the portability of qualifications

Response: Accept

The Wales Apprenticeship Advisory Board (WAAB) has been tasked with providing views on the merits, drawbacks, potential opportunities and constraints of the new approach to Apprenticeship Standards in England. This will be informed by commissioning independent research to seek views of employers and other stakeholders of early experiences of the system in England. In addition, when considering the future architecture of apprenticeships in Wales, portability of qualifications will be a key consideration.

Financial Implications: None.

Recommendation 11. The Committee notes the Welsh Government’s response to our previous recommendation in *Apprenticeships in Wales*, February 2018, in which the Welsh Government agreed in principle with the call for concessionary bus or rail cards for apprentices, dependent on the outcome of its consultation on “discounted bus travel for young persons in Wales”. As that consultation summary of responses notes “very strong support for including those in recognised apprentice schemes (85%)”, the Committee reiterates its recommendation for concessionary bus or rail cards for apprentices

Response: Accept in Principle

The Cabinet Secretary for Economy and Transport is currently reviewing responses to his consultation into improving the Welsh Government’s discounted bus travel scheme for younger persons, “MyTravelPass”. He hopes to announce his decisions shortly.

The rail concessionary fares scheme has been designed to complement the bus scheme, providing rail travel on four branch lines where bus provision is relatively limited, with its primary purpose being to provide access to services and promote well-being. There are some restrictions on the use of the current scheme (e.g. it operates only for part of the year on two of the four lines) to ensure that it does not place undue pressure on already busy services. As such, any expansion of the scheme is linked to the Cabinet Secretary’s decision on “MyTravelPass”.

Financial Implications: Financial implications will be considered as part of the Cabinet Secretary’s decision.

Recommendation 12. The Committee calls on the Welsh Government to work with public services to find innovative ways to support apprenticeships and other workplace learning for an increasing number of roles.

Response: Accept

Local Authority Development - We have established a good working relationship with Welsh Local Government Association (WLGA) and have agreed a number of positive actions to support the sector. A guide for Local Authorities on Apprenticeships was published in September 2018. The document outlines our policy direction, information on the apprenticeship levy, help and support available to authorities. It also includes a list of available frameworks applicable to the functions within the councils in order for them to consider how apprenticeships can best help support or meet with workforce planning needs. We are maintaining a watching brief on developments in England and have maintained good links with officials within Department for Education, who are experiencing similar issues to us. We will continue to work closely with the WLGA and HR Managers at the Local Authorities to support this sector.

Schools Development - As with Local Authorities, we have produced a guide on apprenticeships specifically aimed at schools that was published in September 2018. We have consulted with the National Association of Head Teachers (NAHT) and Schools policy division within the Welsh Government, on the content of the document. The guide aims to raise schools awareness of apprenticeships, the levy and the frameworks currently available to them. Support work will be on-going with this sector.

NHS - Welsh Apprenticeship Advisory Board recently approved three frameworks – Allied Health Professions Support – Level 4, Psychological Therapies (Therapies) – Levels 4/5 and Healthcare Science Associate – Level 4. In response to demand, we have already developed and published Level 3 Health Informatics and are working on a progression to Level 4. In addition, we are working with the Dental Services Office and General Dental Council to develop new qualifications and a more robust framework for Dental Nursing. Bangor University is currently developing this. Work is also underway to develop higher level apprenticeships (Levels 4/5) that will provide enhanced career progression opportunities.

A new Employer Toolkit was published in August 2018. The toolkit outlines the apprenticeship programme we have here in Wales and is aimed at all employers. https://businesswales.gov.wales/skillsgateway/sites/skillsgateway/files/documents/Apprenticeships%20Toolkit%20for%20Employers_0.pdf

Financial Implications: None.

Recommendation 13. The Committee calls on the Welsh Government and Home Office to increase its efforts to resolve the issue of funding for police apprenticeships in Wales, ensuring that the Police forces are kept fully up to date with progress on the negotiations.

Response: Accept in Principle

During 2018/2019, the Police Forces across England and Wales are introducing new and broader workforce training initiatives via apprenticeships at level 4-7, to improve

the training regime for uniformed recruits. The total set up cost is estimated at £1.1 million for the police forces in Wales. Following extensive discussions, the Home Office has agreed to fund the costs of levels 4–7 training (£600k). The Welsh Government has confirmed that there will be a contribution for start-up costs (£400k) which is to be invested in activities such as trainer capacity, materials, and a range of other related expenditure. However, this is a one-off arrangement for 2018/19 and will not be repeated in future years. Therefore, this can only be viewed as a short-term measure and further negotiations will be necessary.

Financial Implications: Additional negotiations will be necessary to determine ongoing costs.



Mobile UK

Mobile UK is the trade association for the UK's mobile network operators - EE, O2, Three and Vodafone. As mobile increasingly becomes the device of choice for running daily life both at home and at work, customers seek improvements to coverage, more capacity and greater capabilities. Our goal is to realise the power of mobile to improve the lives of our customers and the prosperity of the UK as a whole.

Our role is to identify the barriers to progress, seek solutions and work with all relevant parties to bring about change, be they Government, regulators, industry, consumers or citizens more generally.

Introduction

1. Mobile UK welcomes the opportunity to submit a response to the Welsh Government's call for evidence for assessing the potential impact of a Business Rates reduction on mobile infrastructure investment in Wales.
2. Mobile UK strongly supports a targeted use of business rates relief to stimulate investment in regions of Wales where there is currently little or no coverage. The rationale for a public policy intervention is that there are public benefits to be gained from wider geographic coverage that cannot be captured, and thus delivered, through the normal competitive process. This is set out in more detail below.
3. Having high quality mobile infrastructure and connectivity is widely recognised to be crucial to the future economic and social prosperity of a nation or region. 94% of adults now use a mobile device.
4. Consumption of mobile services, particularly data, is rising very rapidly and yet industry revenues have flattened over the last few years at just over £15bn per annum (*Ofcom*). The operators are investing £2bn per annum but in an environment of flat revenues, it is very hard to make a return and competition for investment capital both globally and nationally is intense.
5. Much of the investment goes towards optimising the network so that the increased (mostly) data traffic can be accommodated using existing spectrum allocations, and, as far as is possible, network infrastructure.

6. Today's mobile networks are very complex, deploying as they do multiple generations of technologies, multiple frequency bands and new techniques to maximise the user experience: more subscribers getting faster data speeds and a greater volume of data. The ability to optimise networks to their best advantage is a source of competitive advantage and the focus of spending is in locations where the demand for network resource is greatest.
7. Even where the network is optimised, many sites that mobile operators currently deploy are loss making (Across the UK perhaps around 50% and in Wales, in the remoter regions, heavily loss making), in that the cost of building and operating is not covered by the extra revenue gained, both directly by the extra customers covered and indirectly as a result of operators being able to demonstrate the most comprehensive coverage in a competitive market. The extent of coverage is one of the most important factors considered by customers at the point of sale, even if the customer never intends to visit some of the places covered.
8. But loss making coverage increases operational costs, which in turn is reflected in consumer price, another key sensitivity and so mobile operators must always make a very careful judgement on the competitive advantage of extra coverage v the disadvantage of extra running costs. In the intense competition for capital, these factors weigh heavily.
9. As a result, it is highly likely that the hardest to reach places will need some form of public policy intervention if coverage is to be extended.

Public benefit

10. As explained above, there will be regions of Wales where investment by individual operators will be heavily loss making and the losses will be greater than any marketing advantage that might accrue from having a large mobile footprint. The result is that no coverage is provided, to the disadvantage of the region concerned.
11. This disadvantage might manifest itself in a number of ways: businesses do not locate there, or business move away for lack of coverage, thus reducing the local tax base. Public services which could be better (and more cheaply) served through mobile access (e.g. job opportunities, housing, and parking) are not universally available. Public service delivery that relies on mobile connectivity (e.g. district nurses equipped with labour saving smartphones/tablets) are not optimised either.
12. In terms of GDP, Capital Economics¹ calculated the the economic boost to the UK from 4G would be £12 billion per annum (on a per capital basis, greater than £500 million per annum for Wales. This leaves plenty of headroom with which to, at the very least, trial rates reductions to stimulate capital investment and to grow or maintain the local tax base in regions that are currently lacking in coverage.

¹ Improving connectivity – stimulating the economy, November 2014

Q1. Do you believe that a reduction in non-domestic rates applicable to new mobile site infrastructure would lead to an increase in the number of mobile sites that you would deploy to extend coverage in Wales [in rural areas] beyond current / planned levels?

Mobile UK believes that a reduction in business rates will have a positive impact on improving coverage by changing the viability of marginal sites. In many parts of rural Wales, it is very challenging to deliver a mobile signal. There are large areas of National Park and AONBs and much of the population is very dispersed. This is borne out in the data published each year in Ofcom's Connected Nations report.

80% of premises in Wales have indoor telephone call coverage from all four mobile networks. While this is up from 69% in the prior year, it compares poorly with 91% of premises in England. 73% of premises in Wales have indoor coverage for mobile data services from all four operators. Again, this is a considerable improvement on the prior year but still compares poorly with England, where 87% of premises have coverage from all four operators.²

According to Ofcom's Connected Nations Report, 52% of the geographic landmass of Wales has data coverage (3G or 4G) from all four operators. 39% of the area has coverage from one or more operators and 9% has no data coverage from any operator (1,800 sq kilometres). Much of this area is likely to be extremely challenging to get coverage to, bearing in mind the requirements for power, backhaul, and access. However, a 25 metre tower can deliver an outdoor mobile signal across approximately 76 square kilometres³ and so there is plenty potential for a modest number of masts to be incentivised by a business rates reduction, assuming that a reduction would be used to deal with areas where there is currently no coverage.

2. Please explain the answer given in (1) – giving a persuasive rationale for why you believe such a reduction will drive an increase in site numbers (if you believe that to be the case).

The average annualised cost of ownership of a mast in a rural location is set out below:⁴

Land rent	7,506
Business rates	3,753
Legal/agents	1,300
Maintenance	5,200
Radio opex	691
Power - capex	2,550
Power - opex	2,550

² Ofcom – Connected Nations, 2017

³ Mobile Operator Association submission to 'HOW THE PLANNING SYSTEM IN ENGLAND CAN SUPPORT MOBILE CONNECTIVITY', 2015.

⁴ The Economic impact of the proposed Electronic Communications Code reforms, Deloitte 2015.

Transmission - capex	2,500
Transmission - opex	5,200
Site infrastructure	11,500
Cost of capital	12,750
Total annualised cost of ownership	55,500
Opex only	26,200

Business rates represent 7%, on average, of the annualised total cost of ownership (and 14% of the operating costs), currently. That said, with the reforms to the Electronic Communications Code, the site 'rents' (on which business rates are calculated) are predicted to fall and so rates as a proportion of running costs are likely to fall.

Stimulating investment in rural areas is all about reducing the overall costs of ownership by eliminating or lowering costs wherever it is practically possible. Business rates is an obvious and significant candidate. There may in fact be no 'loss' of revenue (if indeed there is any), as the asset may not have been built without the stimulus and any notional loss would be offset by shoring up or improving the tax base from other businesses that can now locate there because of better connectivity (or don't leave for lack of it).

3. If you do believe that a reduction in non-domestic rates would lead to an increase in the sites you would roll-out, please give specific, quantified details of how such a rate reduction would impact your investment decision – for example, what 'gating' processes are used to determine whether a specific site will be deployed and what specific measures (and their thresholds) are assessed during those processes (for example, expected population coverage by the site / expected revenue from the site / time to breakeven for the site / etc.)?

As was mentioned above, 39% of the landmass has coverage from one or more operators and 9% has no coverage. Under a business rates stimulus regime, a likely scenario is that an operator, when deciding to extend its footprint will be steered towards taking advantage of the incentive by covering an area that presently has no coverage, rather than covering an area that already has service from at least one operator. Even though a current 'not spot' is likely to be challenging, this could be offset by the market advantage of less competition in that area and the tax incentive. From a national economic perspective, it is probably more important that areas with currently no signal are prioritised over increasing competition in areas that do have service, albeit not from all four operators.

The business rates reduction is a very cost effective way of achieving this.

4. What will be the likely impact on mobile site numbers that extend existing coverage if no rate / low rate sites are implemented? Please provide specific site numbers and / or details of geographies that could be delivered and / or increases in geographic coverage percentage in Wales, along with associated timeframes.

Mobile UK does not have access to this information. Please see our response to Q1 for an estimate of the remaining geographic area to be covered.

5. What will be the impact on rural businesses and communities of any such increase in site numbers, and why, therefore, should a rate reduction for mobile sites be prioritised?

Please refer to comments in the introduction titled 'public benefit'.

6. Is there any further evidence you would like to submit, for example how wider network coverage provided as a result of business rates relief could be used to support future technology, such as 5G capabilities and the associated wider economic and social benefits?

The incentive should not just apply to masts, but to all mobile equipment in the eligible area, such as any wireless backhaul sites and equipment housing (for example, under 5G, it is expected that operators will install more processing power at the network edge (mobile edge computing - MEC). Currently, most processing is done at the network core (content delivery, location updates, switching etc.). A MEC architecture will reduce latency in the network – a key feature of 5G.

Mobile UK would like to draw the Welsh Government's attention to the Institute of Engineering and Technology's report for policy makers on 5G, in which it emphasises the importance of having the right regulatory and tax regime in place to stimulate investment⁵.

A business rates reduction would be a meaningful way of preparing the ground for 5G, which will be an overlay and complementary to 4G. Such a policy would be in line with the rates holidays afforded to new fixed fibre and would thus recognise that mobile is every bit as important to the economy as fixed infrastructure (for example 70% of voice calls are now initiated on a mobile -Ofcom).

7. How do you believe that sites suitable for rate-reduction should be identified / categorised? For example, whether the system should be related to specific geographies / locations and / or other specific thresholds (such as site height or power / transmission availability, for example, or to degrees of coverage).

The incentive should be given to operators providing new coverage where there is presently none.

⁵ <https://www.theiet.org/sectors/information-communications/resources/5gnetworks.cfm>