Enterprise and Business Committee

Meeting Venue:
Committee Room 2 - Senedd

Meeting date:
4 June 2014

Meeting time:
09.00

Cynulliad Cenedlaethol Cymru
National Assembly for Wales

For further information please contact:
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Agenda

Pre-meeting in private (09:00-09.10)

Formal public meeting (09.10)

1 Introductions, apologies and substitutions

2 Follow-up Inquiry into Science, Technology, Engineering and Mathematics (STEM) Skills (session 4) (09.10-09.55) (Pages 1 - 30)

Witnesses:

Professor Richard B. Davies, Vice-Chancellor, Swansea University, Higher Education Wales
Wendy Sadler, Schools Liaison Officer, School of Physics and Astronomy, Cardiff University
Professor Andy Evans, Institute Director, Department of Mathematics and Physics, Aberystwyth University

Break (09.55-10.05)

3 Follow-up Inquiry into Science, Technology, Engineering and Mathematics (STEM) Skills (session 5) (10.05-10.45)

Witness:

Richard Spear, CEO, Careers Wales

Break (10.45-10.55)

4 Follow-up Inquiry into Science, Technology, Engineering and Mathematics (STEM) Skills (session 6) (10.55-11.40) (Pages 31 - 38)

Witnesses:

Dr Greg Walker, Deputy Chief Executive, CollegesWales

Mr Barry Liles, Principal, Coleg Sir Gâr

5 Follow-up Inquiry into Science, Technology, Engineering and Mathematics (STEM) Skills (session 7) (11.40-12.10)

Witness:

Dr Tom Crick, Senior Lecturer in Computing Science, Cardiff Metropolitan University

6 Papers to note (Pages 39 - 46)

Attached Documents: Minutes of Previous Meeting EBC(4)-14-14(p.3) - Letter from the Minister for Economy, Science and Transport (additional information on enterprise zones) EBC(4)-14-14(p.4) - Chwarae Teg (additional information)

De-brief in private (12.10-12.30)

Agenda Item 2

Document is Restricted

NAfW Enterprise and Business Committee - Follow-up Inquiry into Science, Technology, Engineering and Mathematics (STEM) Skills

The Institute of Mathematics, Physics and Computer Science at Aberystwyth University welcomes the opportunity to respond to the NAfW Enterprise and Business Committee Follow-up Inquiry into Science, Technology, Engineering and Mathematics (STEM) Skills. Mathematics, Physics and Computer Science are key STEM subjects that underpin the knowledge-based economy. Maximum benefit to the economy and society in Wales requires support for maintaining excellence in teaching and research and forging closer links between education and employers.

- ***What impact has the Welsh Government's strategy Science for Wales and Delivery Plan had on science, technology, engineering and mathematics (STEM) skills in Wales?***

At HE level, the most visible and welcome impact of the Science for Wales strategy is the establishment of the Sêr Cymru initiative and the National Research Networks. They have taken some time to be established, with much background negotiation, but their presence is now beginning to be felt. The networks have been built on existing partnerships and are aligned with strategic areas that resonate internationally. The networks are currently (2014 calls) supporting collaborative research teams of postgraduate students and research fellows aligned with the networks' priority themes.

It is perhaps too soon to see the benefit of these initiatives in terms of increased grant income and their implementation may be too late to have a major impact on REF2014. REF is subject-based and there is not always a direct match between REF units of assessment and the Welsh-funded networks in comparison with other regions and nations (e.g. in Physics and Chemistry in Scotland and England). There are some emerging areas of science and technology, not prominent in the NRNs, that are receiving priority elsewhere (e.g. RCUK, H2020) and where there exists expertise in Wales. These include Quantum Technology, Space Technology and Photonics – we hope that the growth and expansion of the Sêr Cymru and NRN initiatives is supported to include important new areas as they emerge.

While the new investment in these initiatives are welcome, we are concerned of a long term and increasing funding gap between Wales and the rest of the UK in HE funding, especially in STEM subjects. Some of the challenges faced by science HE departments in Wales include lower subject premiums for UG students (HEFCE circular: *Non-mainstream allocations to support very high-cost STEM subjects: Recalculation of allocations using most recent data* (2013)) and lower capital investment (e.g. £400M capital investment for STEM in English Universities announced in 2013). However, Wales is increasing its share of competitive research funding and competing well internationally (Learned Society of Wales report: *Recognising the Quality of Research at Universities in Wales* (2013)). This inevitably leads to comparatively lower overall resources to support HE STEM students in Wales that will have a long-term effect on the economy if not addressed.

- ***What progress has been made in addressing the issues identified in the Enterprise and Learning Committee's 2011 inquiry into the STEM agenda, including:***
    - ***The adequacy of provision of STEM skills in schools, further education colleges, higher education and work-based learning (including apprenticeships);***

Universities and professional bodies recognize the importance of strong links within the education sector (schools, FE and HE) and between educators and employers. Universities have resources that are of value to schools and colleges; e.g. lectures from experts in topical areas, role models (especially UG and PG students), access to laboratory facilities, summer university, training for teachers and work experience for students. At Aberystwyth we have, for example, hosted a training workshop for Welsh medium teachers in Mathematics and Physics. Awareness of funding opportunities could be improved and further initiatives should focus on engaging and rewarding individuals on both sides for taking initiatives, and should provide adequate travel and teaching cover funding for the partners.

- ***Value for money from the additional funding to support and promote STEM skills and whether the current supply of STEM skills is meeting the needs of the Welsh labour market;***

Our interaction with Welsh industry indicates a desire to interact more closely with the HE sector to ensure that we produce graduates that have the necessary skills. There are opportunities with summer placements, undergraduate projects and industry involvement in course delivery and skills training. Funding is helpful in initiating and sustaining dialogue, for example Knowledge Exchange projects, networking events, Open Innovation initiatives, and support of skills training e.g. HE-STEM funding for a Mathematics help desk for students and for engaging with the photonics industry via the UPSKILL project. The key factors are matching the right people on both sides and the development of relationships - these should be the focus of future initiatives.

- ***The supply of education professionals able to teach STEM subjects and the impact of Initial Teacher Training Grants and the Graduate Teacher Programme on recruiting STEM teachers and education professionals;***

Support for teacher training is welcome; these are popular career choices for our graduates and essential for the success of the disciplines and the economy. It is important that the best students are encouraged into careers as teachers. At Aberystwyth, we have almost doubled the number of graduates in Mathematics and Physics since 2009; a higher percentage of graduates enter further study than for the subjects nationally or in comparison with other disciplines at Aberystwyth, and we have one of the highest current rates of good honours degree classifications within the university.

- ***The effectiveness of education and business links between education institutions and STEM employers.***

Government initiatives such as Knowledge Transfer Networks, Access to Masters, Academic Expertise for Business, etc. are an essential mediator of improved interaction, but there is often a duplication of effort and lack of communication. For example, numerous projects have compiled lists of expertise and facilities in recent years. It would perhaps be more effective if the drive were more from employers than universities, perhaps coordinated more strongly by industry-focused and led consortia such as the sector fora.

- ***Whether any progress has been made on addressing negative perceptions and gender stereotypes of STEM and promoting good practice to encourage women to acquire STEM skills and to follow STEM related careers.***

The university and the professional bodies recognize the disproportionate numbers of women studying some STEM subjects (e.g. the IOP has raised concern of physics at post 16 level) and in particular their lack of prominence in senior positions in academia and in industry. Aberystwyth University is carefully considering how to implement the recommendations of the House of Commons Science and Technology report *"Women in scientific careers"* (2014) and the CaSE *"Improving Diversity in STEM"* report launched by the Chancellor in May 2014. Both reports clearly identify the barriers experienced by women seeking to acquire scientific skills and progress their careers in STEM subjects. There is variation across disciplines and between countries with many cultural barriers to be removed. Key strategies include supporting role models and to provide a more flexible career path. At Aberystwyth, a range of positive actions have been identified to support the recruitment of female students into STEM, and to support their development from undergraduate onwards. The university's application for Athena SWAN Bronze award has support from all STEM departments and work has started on a detailed three-year action plan to support women in STEM. There was enthusiastic engagement by STEM departments in a series of International Women's Day events held in March 2014. We have appointed new lecturers in Physics and Computer Science, hosted lectures by successful graduates and have provided Welsh representation at the IOP's Diversity and Inclusion committee. The university's Centre for Widening Participation and Social Inclusion co-ordinates STEM awareness, supporting for example, initiatives led by our undergraduate students to encourage the take up of STEM subjects by girls.

- ***What progress has been made on learning STEM skills through Welsh medium education and training?***

Yn ganolog i ddatblygiad diweddar Cyfrwng Cymraeg yn y Prifysgolion mae cyd-weithio gyda'r Coleg Cymraeg Cenedlaethol. Yn Aberystwyth, mae hwn yn adeiladu ar y ddarpariaeth oedd eisoes ar gael mewn pynciau STEM megis Mathemateg a Ffiseg. Mae cefnogaeth y Coleg (e.e. ariannu swyddi a phrosiectau a sefydlu Paneli Pwnc) wedi helpu i greu strwythur cadarn ar gyfer cynllunio hir dymor (e.e. *Cynllun Datblygu Mathemateg a Ffiseg* gan Banel Gwyddorau Mathemategol a Ffisegol y CCC).

Credwn ei fod yn hollol bwysig bod cyfleodd ar gael ar draws y wlad i astudio pynciau STEM drwy'r Gymraeg. Bydd hyn yn sicrhau ein bod yn cynhyrchu graddedigion sy'n medru trafod pwnc ei harbenigaeth yn y ddwy iaith ac yn defnyddio'r Gymraeg yn naturiol mewn meysydd gwyddonol a technolegol. Mae manteision cyflogadwyedd dwyieithrwydd yn y sector preifat yn ogystal â'r sector cyhoeddus. Mae'n bwysig bod ein graddedigion gorau sy'n dymuno dysgu yn y sector addysg gynradd ac uwchradd yn gyfforddus yn defnyddio terminoleg gywir yn eu pynciau yn ogystal â bod yn arbenigwyr yn eu meysydd. Bydd hyn yn sicrhau bod dim cyswllt annaturiol rhwng dewis pynciau a gallu ieithyddol yn yr ysgolion.

Drwy gefnogaeth y Brifysgol a'r CCC, mae cynnydd sylweddol wedi bod yn y ddarpariaeth Mathemateg a Ffiseg a'r nifer sy'n dewis astudio'r pynciau drwy'r Gymraeg. Drwy'r ddarpariaeth, mae ein myfyrwyr yn gymwys i dderbyn Ysgoloriaethau Cymhelliant CCC (£500 y flwyddyn). Rydym wedi estyn y cydweithio i gynnwys Prifysgolion eraill (swyddi CCC newydd yng Nghaerdydd ac Abertawe) ac mewn Cyfrifiadureg o fewn ein hathrofa. Mae tri darlithydd CCC yn dysgu'r pynciau STEM yma yn Aberystwyth. Mae'r pwyslais wedi bod ar gynnig y pynciau yn ddwyieithog ac i gynyddu'r nifer o fodiwlau sydd ar gael. Mae twf cyson yn y nifer sy'n dewis modiwlau cyfrwng Cymraeg ers eu dechrau tua 2007 – eleni mae 56 o fyfyrwyr Mathemateg, Ffiseg a Chyfrifiadureg yn dewis astudio rhan o'u cwrs gradd yn y Gymraeg.

Science, Technology, Engineering & Mathematics Skills (STEM)

A response to the Enterprise & Business Committee's Inquiry into STEM

May 2014

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Introduction

1. ColegauCymru welcomes the opportunity to respond to the Enterprise and Business Committee's follow up inquiry into Science, Technology, Engineering and Maths (STEM). ColegauCymru represents the 15[1] further education (FE) colleges and FE institutions in Wales.[2] In 2011/12, there were 214,850 individual students attending college and 229,615 enrolments.[3]

2. Colleges are major providers of general education provision in Wales, helping to produce some of the best learner outcomes. Colleges are the predominant providers of funded vocational and technical education in Wales, delivering about 85% of the total provision.

3. Colleges have played their part in facilitating progress in achieving the aims of *Science for Wales* and its associated Delivery Plan. Though these two documents, particularly the Delivery Plan, were focussed on STEM skills and research at the university level, colleges have played an increasing role in ensuring that they are producing the supply chain of STEM skills into the workplace and into higher education. Colleges work closely with employers in technological and scientific fields - alongside the relevant Sector Skills Councils - to ensure that the skills possessed by learners match the needs of the business or organisation.

4. To promote the increased take-up of vocational subjects in STEM areas, the key importance of STEM subjects needs to be continually promoted, particularly in schools. It is crucial that a high status vocational learning route encompassing STEM subjects, apprenticeships and higher technical qualifications including a degree is as well understood by learners, teachers, lecturers and parents as the GCSE-A level-degree route. Current research has shown that young people are not aware of the choices available to them at 14.[4]

5. This response will highlight (i) the crucial role played by colleges in the provision of STEM skills, and (ii) colleges' work to raise the profile of vocational skills (including STEM skills) through the promotion of national and international skills competitions. We also address some of the particular points raised by the committee in some of the terms of reference of the inquiry in the final section of

[1] The 15 include 10 FE corporations including St David's Catholic College; the two FE institutions - WEA Cymru and YMCA Community College; and The College Merthyr Tydfil, Coleg Sir Gâr and Coleg Ceredigion which are part of university groupings.
[2] In this paper the terms 'FE college' and 'college' are used to cover FE colleges and FE institutions.
[3] *Further Education, Work-Based Learning and Community Learning in Wales 2011/12 SDR 48/2013,* Welsh Government (March 2013).
[4] For example, *New Directions: Chrysalis Research* (2011), a survey of 1,620 15-19 years and 1,693 parents.

the paper before outlining some of the recent achievements of colleges and their learners in relation to STEM (in the Annex to this paper).

Colleges are key in the supply of STEM skills

6. Colleges are a pivot in the supply chain of STEM skills in Wales. Colleges equip their learners with these crucial skills in a variety of contexts. The way in which this supply chain operates can be classified via five main routes. These are:

- Through colleges **work with partner schools in the areas of vocational education**, particularly as part of the 14-19 Agenda. Through these links, learners in schools get an important taster of vocational skills, giving them a chance to consider a broader range of routes into employment or to a higher level of study.

- Via learners' study for **general education qualifications such as A-levels in STEM areas** at colleges. Colleges in Wales are major and high quality providers of general education provision in Wales, including in areas such as Neath Port Talbot, Llanelli, Merthyr Tydfil, Blaenau Gwent, parts of Wrexham and south Gwynedd that have tertiary provision. Colleges are successful in ensuring that their students gain the opportunity to progress to further study in higher education, including at the most prestigious UK universities.[5] Progression to higher education by college leavers has increased in recent years (by 35% from 2007 to 2010), and this includes notable increases in progression into STEM study at higher education, particularly in South West Wales.[6]

- Through mainstream **full-time and part time-*provision of vocational and technical qualifications*** in STEM subjects up to level 3 (such as BTECs, National Vocational Qualifications, and other qualifications). These can be broken down into the following STEM related areas by the volume of completed learning activities at colleges (at all ages) in the 2012/13 academic year (with learning activity 'completion rates' shown in brackets):

[5] See the successes of colleges in getting learners into the UK's most prestigious universities: http://www.walesonline.co.uk/news/wales-news/welsh-colleges-set-new-standard-7173663
[6] See South West Wales Regional Learning Partnership / Coleg Sir Gâr Report 'FE to HE Progression', March 2012, p.5.

Science and Mathematics	13,745	*(89%)*
Engineering and Manufacturing Technologies	16,540	*(92%)*
Construction, Planning and Built Environment	12,930	*(92%)*
Information and Communication Technology	22,860	*(93%)*[7]

- Through ***work-based learning*** **(including apprenticeships) conducted by colleges in STEM areas**, often with a STEM vocational education qualification at the heart of the programme of learning. Colleges are major providers of work-based learning in Wales.

- Through **Higher Vocational Education *at level 4 and above*** (i.e. at high level skills), through Higher National Diplomas, Higher National Certificates, Foundation degrees, BTEC Advanced Professional Diplomas, and other qualifications. Higher Apprenticeships are a growth area here since funding for them from the Welsh Government was made available in 2012.

Encouraging the take up of STEM skills through participation in skills competitions

7. An effective way to encourage learners to take up the study of vocational qualifications in STEM areas is through learners' participation in skills competitions - though the skills recognised at these events include but go beyond STEM areas. Colleges in Wales, working with partners, have played a key role in inspiring students and work-based learners to take their skills to the highest level. Learners who do well in skills competitions are used as key role models for future cohorts of students.

8. Barry Liles, Principal of Coleg Sir Gâr, is the designated Skills Champion for Wales and is Chair of the Skills Network for Wales. This Network co-ordinates the work of education and training providers and employer organisations in relation to skills competitions, helping to boost the profile of vocational skills across the nation. The various levels of competitions include:

    - **Skills Competition Wales** consisting of around 30 local skills competitions, funded by the Welsh Government and run by the Skills Network. This helps build up the supply chain of competitors for the national and international competitions.

[7] See Table 2a in the Statistics for Wales publication 'Learner Outcomes Measures for FE, Work-Based Learning and Adult Community Learning: 2012/13 (SDR 57/2014), published 3 Apr 2014.

- **The Skills Show**, held annually, is UK's biggest skills and careers event which was last held from 14-16 November 2013 at the NEC, Birmingham, drawing in 100,000 visitors. The Skills Show hosts WorldSkills UK Competition Finals across 70 vocational sectors. During the event over 700 of the UK's most talented apprentices, employees and learners – including 59 from Wales – competed to be named the 'best in the UK' in their chosen vocational skill.

- **WorldSkills** itself, which takes place every two years. It brings together young people under the age of 25 from across the world to compete for medals as 'the best of the best' in their chosen skill. It is considered the international 'Olympics' for vocational skills. Team UK at the last WorldSkills in 2011 was made up of 43 competitors aged 18-25. The youngest member of Team UK was David Bowen, an 18 year old web design student at Coleg Sir Gâr - David won a Medallion for Excellence in web design. The next WorldSkills takes place in Brazil in 2015.

9. To take this forward further the Skills Network and Coleg Sir Gâr, on behalf of the college sector, are leading a new **Inspiring Skills Excellence** project (funded by the Welsh Government). Over a three year period the project will provide the supportive infrastructure to ensure delivery of improved medal winning success at national and international skills competitions for competitors from Wales. The project will achieve this by:

    - targeting sectors of economic interest to Wales, supporting the skills required to increase GDP;
    - providing specialised, high quality coaching and development of competitors;
    - raising the skills and knowledge of training provider staff in order for them to deliver a pool of competitors displaying world-class skills talent, and;
    - engaging with and supporting the employers of competitors, demonstrating the benefits of competition engagement whilst showcasing Welsh industry to the world.

10. The project will ensure that Wales will be in a position to develop a greater number of competitors for selection to Team UK for EuroSkills 2016 and the next-but-one WorldSkills in Abu Dhabi 2017.

Specific issues raised in the follow up inquiry

11. The committee has raised particular points in relation to the implementation of *Science for Wales* and its Delivery Plan. These points include:

- **Value for money for public investment:** ColegauCymru considers that value for money is generally being achieved in relation to the public investment provided for STEM vocational skills programmes in colleges and work-based learning. Colleges are efficient deliverers of STEM programmes: success and completion rates at colleges are high even in those areas, such as STEM, which are considered by some learners to (rightly or wrongly) be more 'challenging'. It will be important in the new Welsh Government funding regime, which is based on 'learning programmes' rather than qualifications, that the additional costs of putting on STEM provision is reflected in the tariff given to colleges for a STEM learning programme.

- **Education and Business links:** Colleges thrive on their close connections with business of all shapes and sizes. These range from major companies such as GE, Airbus and British Airways, at one end of the scale, to the 10,000 SMEs that colleges relate to at a local level (figures based on a 2011 ColegauCymru members' survey). Ensuring the relevance of vocational STEM programmes is crucial and colleges work not only with the relevant sector skills councils but directly with employers to ensure that this is achieved.

- **Women and STEM related careers**: As Statistics for Wales data in the published bulletins is not broken down by sex, accurate data on gender imbalances in the take up of STEM subjects in colleges or work-based learning is not easily available. There is some anecdotal evidence that somewhat more women are taking up the study of STEM subjects in colleges. Colleges actively participate in projects and schemes such as 'Girls into Engineering' run by the Education Engineering Scheme Wales - STEM Cymru that seeks to address this imbalance. However we acknowledge that much more work needs to be done to increase the take up in STEM subjects by girls at school and women in colleges.

- **Supply of education professionals:** There is a continuing need to attract education professions to teach STEM subjects. At a recent conference in the University of South Wales, it was pointed out that STEM graduates often gravitate towards banking and finance rather than into engineering or into teaching, While there have been campaigns in the past to attract specialists

into teaching in schools, no similar campaigns have taken place to attract them into further education.

- **Welsh Medium / Bilingual STEM study:** Colleges are committed to increasing the take up of all subject areas through the medium of Welsh. The college sector's National Strategy for Bilingualism (adopted in 2011 and forming an element of the wider Welsh Medium Education Strategy) has made improving opportunities for bilingual study a priority. As with other sectors, the availability of teachers/lecturers (or potential teachers/lecturers) with both STEM and professional Welsh language skills remains a key issue.

ANNEX: College and learners' recent successes in STEM related areas

Queen's Anniversary Prize 2013 – Coleg Cambria
Coleg Cambria won the highest form of national recognition open to a UK academic or vocational institution - a Queen's Anniversary Prize. Awarded for its vocational and engineering training in aircraft production and maintenance for Airbus and UK aerospace, the college was only one of three colleges across the UK to be recognised.

Knowledge Transfer Partnerships Wales Award 2013 - Grŵp Llandrillo Menai
In 2013 Grŵp Llandrillo Menai won the Knowledge Transfer Partnerships (KPT) Wales Award becoming the only further education institution in the UK to make the UK finals. Knowledge Transfer Partnerships (KTPs) is a UK-wide programme, which brings together a business, a UK university or college partner, and a recently qualified graduate (associate) to develop a business opportunity. The KTP Wales Award Trophy was awarded to Grŵp Llandrillo Menai and G.L. Jones Playgrounds Limited for implementing a new product design process from concept to manufacture.

The Skills Show 2013 – Awards and Commendations (in STEM-related skills)

- **Gold Medallists:**
  Bethanie Palmer & Andrew Dennis (Coleg Sir Gâr)
  Luke Elsmore and Alex Scott (Industrial Automation & Control Ltd. Newport & Coleg Meirion Dwyfor - Grŵp Llandrillo Menai)
  Christopher Woodley (University of Wales Trinity Saint David - Swansea)

- **Silver Medallists:**
  Keiren Jones (Nationwide Crash Repair Centre)
  Nicholas Ralph (Coleg Gwent)

- **Bronze Medallists:**
  Joe Richardson (Bridgend College)
  Sapphire Watts (University of Wales Trinity Saint David - Swansea)

- **Highly Commended:**
  Gethin Rhys Johnson (Coleg Sir Gâr)
  Jediah Kristian (Coleg Llandrillo - Grŵp Llandrillo Menai)

Enterprise and Business Committee

Meeting Venue:	**Committee Room 3 – Senedd**
Meeting date:	**Wednesday, 14 May 2014**
Meeting time:	**09.15 – 12.03**

Cynulliad Cenedlaethol Cymru
National Assembly for Wales

This meeting can be viewed on Senedd TV at:
http://www.senedd.tv/archiveplayer.jsf?v=en_400000_14_05_2014&t=0&l=en

Concise Minutes:

Assembly Members:	**William Graham AM (Chair)** **Mick Antoniw AM** **Dafydd Elis-Thomas AM** **Rhun ap Iorwerth AM** **Julie James AM** **Sandy Mewies AM** **Eluned Parrott AM** **Joyce Watson AM**
Witnesses:	**Alice Gray, Chwarae Teg** **Donna Griffiths, CITB** **Professor Niels Jacob, WIMCS** **Joy Kent, Chwarae Teg** **Emma Richards, Chwarae Teg** **Jane Richmond, The National Botanic Garden of Wales** **Dr Anita Shaw, Techniquest**
Committee Staff:	**Claire Morris (Second Clerk)** **Olga Lewis (Deputy Clerk)** **Sian Hughes (Researcher)**

TRANSCRIPT

View the meeting transcript.

1 Introductions, apologies and substitutions

1.1 Apologies were received from David Rees AM, Byron Davies AM and Keith Davies AM. Sandy Mewies AM substituted for Keith Davies AM.

2 Follow-up Inquiry into Science, Technology, Engineering and Mathematics (STEM) Skills (session 1)

2.1. The Committee took evidence from Dr Anita Shaw, Deputy CEO, Techniquest, Prof. Niels Jacob, Head of the Mathematics Department, Swansea University, Wales Institute of Mathematical and Computational Sciences (WIMCS) and Jane Richmond, Head of Learning and Intepretation, The National Botanic Garden of Wales.

3 Follow-up Inquiry into Science, Technology, Engineering and Mathematics (STEM) Skills (session 2)

3.1. The Committee took evidence from Joy Kent, Chief Executive, Chwarae Teg, Emma Richards, Project Development Manager – Education, Chwarae Teg and Alice Gray, STEM Ambassador.

3.2 Chwarae Teg would explore whether any research had been undertaken which demonstrated that returning mothers were being forced out of employment or sacked as a consequence of not being able to meet their work obligations against their parenting obligations.

4 Follow-up Inquiry into Science, Technology, Engineering and Mathematics (STEM) Skills (session 3)

4.1 The Committee took evidence from Donna Griffiths, Skills Strategy Manager Wales, CITB

5 Papers to note

5.1 The Committee noted the following documents:

EBC(4)-13-14 (p.5) – Letter from the Minister for Economy, Science and Transport regarding Car Parking Charges Research
EBC(4)-13-14 (p.6) – Letter from the Minister for Economy, Science and Transport regarding travel patterns in South East Wales

Edwina Hart MBE CStJ AC / AM
Gweinidog yr Economi, Gwyddoniaeth a Thrafnidiaeth
Minister for Economy, Science and Transport

Llywodraeth Cymru
Welsh Government

Eich cyf/Your ref
Ein cyf/Our ref

William Graham AM
Chair
Enterprise and Business Committee

19 May 2014

Dear William

At the Enterprise and Business Committee meeting on 20 March I agreed to provide you with information regarding Enterprise Zones and Cardiff Airport. The attached annexes contain the data you required.

Bae Caerdydd • Cardiff Bay
Caerdydd • Cardiff
CF99 1NA

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Llinell Ymholiadau Cymraeg 0845 010 4400
Correspondence.edwina.Hart@Wales.gsi.gov.uk

ANNEX 1 – ADDITIONAL INFORMATION ON ENTERPRISE ZONES

The progress of providing superfast broadband to enterprise zones under the Superfast Cymru programme

Good progress is being made across all of the Enterprise Zones which fall within the Superfast Cymru footprint with many exchange areas already accepting orders of some cabinets with more expected to go live this year.

The Cardiff Enterprise Zone falls outside of the Superfast Cymru footprint. We are working with colleagues in Cardiff County Council who are offering connectivity vouchers for up to £3k for businesses to allow them to benefit from a range of high speed communications technologies.

How the provision of superfast broadband will be addressed (and the broadband technologies to be used) in the areas unsuitable for the Superfast Cymru programme.

We have conducted a review to identify locations not covered by either commercial or Superfast Cymru roll-outs. The review process has now been completed. We will now consider the findings as part of our work to identify how high-speed broadband may be provided to those premises that, for a variety of reasons, are not covered by either the commercial or Superfast Cymru roll-out. As part of this process we are planning to hold a public consultation on our findings in May or early June, with action being taken thereafter. Details of the consultation will appear on the Welsh Government website.

The longitudinal long-term survey – number of businesses on Enterprise Zones

247 businesses were interviewed in the first wave of the survey. We identified 620 businesses in the Enterprise Zones.

Business rate support applications

A total of 72 applications for BRS were approved in 2012/13 and 2013/14 respectively.

These are broken down by zone as follows:

- Anglesey – 5
- Central Cardiff - 2
- Deeside – 31
- Ebbw Vale – 8
- Haven Waterway – 24
- Snowdonia – 0
- St Athan – Cardiff Airport – 2

The total applications approved commit £4,562,000 to businesses within the Enterprise Zones over the life of the scheme. The third round of Business Rate Scheme is currently open for applications until 3 June. This round was extended for a period of 10 weeks to allow for further applications from companies within the Zones. Business Rates Scheme surgeries were held in Deeside and Cardiff to target business uptake. A further update on the success of this scheme will be provided in the months ahead after applications have been considered.

An analysis and a breakdown of how individual Enterprise Zones are performing in terms of jobs created, assisted and safeguarded and other relevant KPIs

I agreed at the EB Committee on 20 March to ask Enterprise Zone Board Chairs to consider this action as this was a decision for the Chairs of Enterprise Zone Boards. I have asked the Board Chairs to explore the Key Performance Indicators and where they feel these can be broken down further by Zone.

ANNEX 2 – ADDITIONAL INFORMATION ON CARDIFF AIRPORT

Regional Air Connectivity Fund and new guidance on State aid

The Regional Air Connectivity Fund was originally established by the Department for Transport in June 2013 to support regional air links to London and provided the opportunity for airports outside the south east of the UK to improve connectivity and stimulate further economic growth in their regions.

The fund supports PSO flights (public sector obligation) to London that comply with the relevant EU regulations on PSOs.

The announcement in the 2014 Budget by the Chancellor extended the amount of funding to be set aside to support new air routes from regional airports to destinations within the EU. This funding doubles to £20million per year, and will be extended by a further three years to the end of March 2019.

The Department for Transport are currently working with the Treasury and the European Commission to determine how the funding process will operate in practice, and will develop guidance for airports, Devolved Administrations and local authorities seeking to make applications for supporting air routes. This information is expected during the summer months. It is anticipated that the fund now includes applications for start-up aid for new routes from UK regional airports handling fewer than 5 million passengers per annum that meet the new EU State aid guidelines.

State aid in the context of projected passenger growth at Cardiff Airport

The new EU Guidelines on State Aid Support for Airports highlights the type and percentage of funding support which may be available to airports depending on their passenger numbers. The Welsh Government will be considering which, if any of these, avenues of support are applicable to aviation in Wales including Cardiff Airport.

Welsh Government official travel through Cardiff Airport

There are a range of factors that need to be considered when arranging trade missions overseas, not least of which is value for money. Wherever practical and where the requirements for value for money are met, trade missions will travel via Cardiff Airport.

Runway use at St Athan Airfield

The airfield at St Athan is open seven days per week, on 48 hours notice until 1 July 2014 and thereafter, seven days a week between 09:00 hrs and 17:00 hrs. Any operation outside of these hours, is by negotiation.

Enterprise and Business Committee inquiry follow-up work:

Chwarae Teg would explore whether any research had been undertaken which demonstrated that returning mothers were being forced out of employment or sacked as a consequence of not being able to meet their work obligations against their parenting obligations

While there does not seem to be any research specifically looking at whether women returners have been forced out of work or sacked, a number of small pieces of research and surveys around maternity and pregnancy discrimination more widely have been conducted over the past few years. These give a flavour of issues being encountered by women and some anecdotal evidence which shows some negative attitudes towards them, e.g. needing more flexibility in order to balance work and care. These are summarised and signposted below.

A larger piece of research on maternity and pregnancy discrimination has been commissioned and will be carried out by the EHRC. A publication date is not available yet but it is likely to be early 2015. The press release form November 2013 announcing the research is available here: http://www.equalityhumanrights.com/news/2013/november/commission-tackles-pregnancy-discrimination/

Chwarae Teg research

While not a focus of our research for 'A Woman's Place', experiences of returning to work following maternity leave were discussed during the in-depth interviews. The experiences below were not experienced by a large enough number to include in the full report but provide some useful anecdotal evidence that is relevant to this topic. Interviewees who discussed returning to work highlighted 2 main types of experience:

1. Some women had felt that their employer had made their return to work easier than it might have been. This was usually through keep-in-touch days and discussing expectations and preferences for women's employment after maternity leave. A number of women talked of their employers helping them to negotiate a flexible work pattern or working part-time; *'I sat down with them and discussed what I could do when I went back. I went back to my old position. They created special hours just for me because I had difficulties with childcare';*

2. Other women felt that they were losing out on opportunities as a result of having been off work, or going back to work on reduced hours.

The experiences that women had on returning to work seem to depend on two main factors:

1. The degree to which their manager was seen as family-friendly and helpful. However, in some cases, it seemed that the women's experiences were dependent on the 'good character' of their manager rather than clear procedures and arrangements for women returning to work
2. The size and scale of the operation. Larger employers with established HR functions tended to have clearer procedures and processes around maternity leave and women returning to work, which was seen to make the return to work easier.

We also gathered some anecdotal evidence of how maternity leave affected employment:

- 1 woman told us how she felt disadvantaged on returning from maternity leave as a proportion of her pay over the previous year was linked to performance, which she lost relating to the time she had been away.

Other recent research into maternity and pregnancy discrimination

- Unison
  - Conducted a survey in 2013 that showed 1 in 4 women feel discriminated against.
  - The survey found that women feel pressurised into returning to work before they are ready and some employers targeting women returners for redundancy selection.
- Mumsnet
  - Conducted a survey in 2013 which showed that of women who return to work after starting a family 60% felt less employable since having their child and 75% said it was harder to progress in their career.
  - Other findings were that on returning to work 25% said their line manager was not supportive and of this group 46% said they were made to feel guilty for leaving on time to collect their child/ children and 26% said they felt their job was under threat.
  - Asked about what employers could do to be more family friendly the single most popular workplace policy was flexible working (28%) followed by emergency childcare provision (15%) and job shares (9%)
- Slater and Gordon

    - 2013 survey found that 1 in 4 mums who have returned to work believe they have been subjected to discrimination, either before or after the birth of their child.
    - Two thirds said things have been 'difficult' for them since they returned from maternity leave. Common complaints were being overlooked for promotion and being forced to watch more junior employees progress faster up the career ladder.
    - The most common attitudes mums faced were other worker's frustration at their part time hours, not being included socially or in business-related matters and a general perception that their role is just a job now rather than a career.
    - In fact, one in four has been made to feel they're no longer required in their current workplace and the same number has even had pressure on them to leave their position or reduce their role.
- Fawcett Society – Alliance against pregnancy discrimination in the workplace
    - Have produced a fact sheet which includes some anecdotal evidence about maternity discrimination, in particular women being made redundant as a result of taking maternity leave.
- TUC
    - Recently conducted a survey which closed on the 16th May as part of a wider project on discrimination against pregnant women and women on maternity leave.

Older research reports

- Fawcett Society – "Not having it all"
    - In 2009, the Fawcett Society published this report which looked at the cost of maternity leave on mothers.
    - The report considered the impact on the gender pay gap and the move of many mothers into part-time, insecure posts which are below their skill level in order to balance care.
    - The report argues that for many mothers moving into these roles is not a choice but the only way they can balance work and care.