Agenda – Climate Change, Environment and Rural Affairs Committee

Meeting Venue:
Committee Room 1 – Senedd
Meeting date: 8 March 2018
Meeting time: 09.30

For further information contact:
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1 Private Pre-meeting – video evidence for inquiry into 'Low Carbon Housing: the Challenge' (09.30–09.45)

2 Introductions, apologies, substitutions and declarations of interest

3 Inquiry into Low Carbon Housing: the Challenge – sixth evidence session (09.45 – 10.45) (Pages 1 – 9)

Mark Harris, Planning and Policy Officer, Homebuilders Federation Wales
Ifan Glyn, Director, Federation of Master Builders Cymru

Attached Documents: Consultation Response from Homebuilders Federation
Consultation Response from Federation of Master Builders Cymru

Break (10.45 – 11.00)

4 Inquiry into Low Carbon Housing: the Challenge - seventh evidence session (11.00 - 12.00) (Pages 10 - 13)

Donna Griffiths, Construction Industry Training Board Wales
Anthony Rees, Cyfle Building Skills
Owain Jones, Cyfle Building Skills

Attached Documents: Consultation response from CITB

5 Motion under Standing Order 17.42 to resolve to exclude the public from item 6 of this meeting.

6 Discussion of inquiry evidence (12.00 - 12.10)

Agenda Item 3

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Ymateb gan : Ffederasiwn Adeiladwyr Cartrefi Cymru
Evidence from : Home Builders Federation Wales

Low carbon housing: the challenge

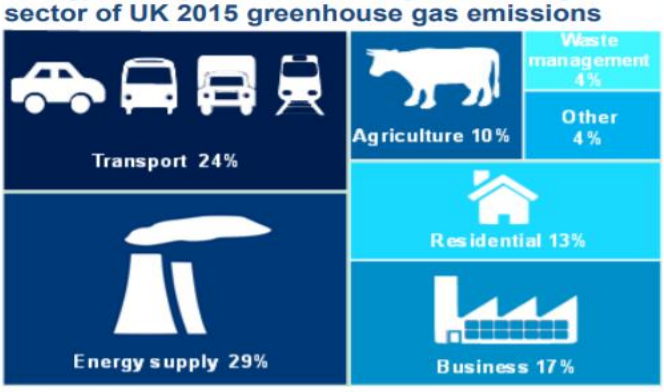
To assess the Welsh Government's progress in relation to low carbon housing and to consider what needs to be done to ensure the Welsh Government achieves its commitments to meet energy efficiency and emissions reductions targets. We will explore:

- *What role can housing can play in Wales' low carbon transition, including the potential positive impacts on greenhouse gas emissions?*

Although the HBF accepts that all housing can play a role in reducing carbon emissions we note that when you consider the statistics available, housing is only 13% of the UK carbon emission so the impact is likely to be minimal (see table below). Any such impact needs to be considered in terms of the benefits v's the risk that an increase in building standards in Wales could make Wales a less attractive environment in which to develop and thus lead to a reduction in the number of new private homes in Wales being built.

Department for Business, Energy & Industrial Strategy UK greenhouse gas emissions national statistics and Greenhouse gas emissions

Energy supply remains the largest emitting sector of UK 2015 greenhouse gas emissions



Other includes Public and Industrial Process sectors (the Land Use, Land Use Change and Forestry (LULUCF) sector is excluded from the sector statistics above as it acted as a net sink of emissions). Please note the percentages above do not sum to 100% due to rounding.

Energy supply and waste management sectors experienced the largest reductions in emissions from 2014 to 2015

	2014-2015 % change	1990-2015 % change
Energy supply	↓ 12%	↓ 48%
Waste management	↓ 7%	↓ 73%
Business	↓ 3%	↓ 26%
Other	↓ 1%	↓ 72%
Agriculture	↔ 0%	↓ 17%
LULUCF	↑ 1%	↓ 229%
Transport	↑ 2%	↓ 2%
Residential	↑ 4%	↓ 17%

LULUCF has a large percentage decrease from 1990-2015 as emissions in this sector have gone from being a net source in 1990 (5.7 $MtCO_2e$) to a net sink of emissions in 2015 (-7.4 $MtCO_2e$).

Further information: https://www.gov.uk/government/collections/final-uk-greenhouse-gas-emissions-national-statistics
Enquiries: ClimateChange.Statistics@beis.gov.uk
Responsible statistician: Amanda Penistone Tel: 0300 068 8090

- *The development and availability of technology needed for highly energy efficient housing;*

Although the HBF does not have any specific comment to make on this issue it does note that the ability to provide warrantees to home owners when new technology is provided needs to be considered. Further depending on the type of intervention, particularly if it includes nonstandard construction methods, the ability to raise a mortgage could be affected.

- *What changes are needed to ensure that existing housing stock is as energy efficient as it can be?*

The WG Household estimates 2017 indicate there are 1.34m households in Wales with the WG New House building stats indicating that 119,088 new homes were built from 2010-2016. If you consider these as the more modern energy efficient homes they are only 9% of the total number of homes. The HBF suggest that this highlights the importance of dealing with carbon emission from older homes, which are not only far less efficient but are also the main element of the housing stock in Wales. The occupiers of this older stock are also more likely to be the people suffering from fuel poverty. The poor performance of the existing housing stock in Wales is highlighted by the recent HBF report YOUVE GOT THE POWER WALES which shows that the cost saving on energy in a new home in Wales is £170 a year more than in England at £806.

- *Whether it is possible and feasible to deliver low carbon, energy positive, affordable housing at scale in Wales and, if so, how this can be achieved;*

The HBF does not believe that there is currently enough known about the available technology to deliver at scale including both the cost implications to builders and the customer reaction. The HBF is aware of the SOLCER house having visited it a number of times, we do not believe that housing the same as this could currently be delivered at scale, both due to planning restrictions, and customer reaction. By way of example the orientation of the SOLCER house is critical to obtaining maximum performance and if all sites where to have to be designed around a set orientation it is likely that less houses would be delivered on most sites. There may also be an issue around warrantees associated with this new technology.

- *What are the barriers to delivering transformative change in house building in Wales?*

Firstly HBF would ask why 'transformative change' is required. We currently build around half the number of new homes needed in Wales, will the 'transformative change' suggested increase this level of production? Or as suggested elsewhere in this submission result in less homes being built.

Building new homes is very challenging in many locations in Wales for a number of reason, but in terms of the homes delivered by the private house builders [latest WG statistics 'New House Building September 2017' show that 78% of new homes are delivered by the private sector] the main issues faced is around viability. This is a result of a combination of new homes costing more to build in Wales and sales values in many parts of Wales being much lower than across the border. Added too this the challenging ground conditions faced on many sites and in particular the number of allocated brown field regeneration sites in Development Plans which are often considered to be the most sustainable location for new housing. Any increase in build costs is only likely to lead to

greater viability issues, which could result in both a lower number of affordable homes and less private new homes being delivered.

- *What is the role of Ofgem and the national grid in enabling grid evolution to accommodate new types of housing, and what are the challenges presented by decentralised energy supply?*

No comment.

- *Whether Wales has the requisite skills to facilitate and enable change in the housing sector;*

The HBF would suggest it is currently difficulty to answer this question as until the types of technology to be used at scale are known then it is difficult to understand the skills required and available. However, presuming new skills will be required, as is often the case with new technology, there will be a lead in period of at least 3 years to allow for people to be upskilled either through college courses or apprenticeships. In terms of the South and North East of Wales the proximity to the border with England is a factor when it comes to the availability of skills, however if we are building differently in Wales then we will potentially no longer be able to rely on movement across the border to help fill any skills gap.

- *What changes are needed to Building Regulations in Wales to accelerate progress towards 'near zero' energy standards and beyond?*

The HBF have no specific suggestions as we believe that the evidence we have submitted in this response and previously to other consultations would suggest that changes are not currently required. However we do consider that Building Regulations is the most appropriate why to impose any changes that may be deemed appropriate. We do not support, as seen recently in some Local Development Plan Inquiries, attempts to impose local requirements through planning policies.

- *How communities can be planned and shaped to be more energy efficient and low carbon (including examples of good practice in Wales and further afield).*

The HBF believes that based on the national figures identified in the answer to the first question, as transport is 24% of the annual energy use nearly double that of new homes, the provision of energy efficient infrastructure is the key to shaping new communities to be more energy efficient. The location and orientation of development could also be a key factor depending on the technology used (see comments above regarding the SOLCER house).

The HBF has also attached their recent report 'You have the Power' which concludes that a purchaser of a new home in Wales saves around £806 a year in the cost of energy.

Mark Harris

Planning & Policy Advisor Wales

Cynulliad Cenedlaethol Cymru | National Assembly for Wales
Y Pwyllgor Newid Hinsawdd, Amgylchedd a Materion Gwledig | Climate Change, Environment and Rural Affairs Committee
Tai carbon isel: yr her | Low carbon housing: the challenge

Ymateb gan : Ffederasiwn y Meistr Adeiladu Cymru
Evidence from : Federation of Master Builders Cymru

Ynglyn a Ffederasiwn y Meistri Adeiladu

Ffederasiwn y Meistri Adeiladu (Federation of Master Builders [FMB]) yw'r gymdeithas fasnach fwyaf o fewn diwydiant adeiladu Prydain a Chymru. Cafodd yr FMB ei sefydlu yn 1941 i amddiffyn ac i hyrwyddo buddion cwmnïau adeiladu maint bach a chanolig.

Cwestiwn 1

Y cyfraniad y gall tai ei wneud wrth i Gymru bontio i economi rhad ar garbon, gan gynnwys yr effeithiau cadarnhaol posibl ar allyriadau nwyon tŷ gwydr

Mae ein tai yn gyfrifol am 24% o allyriadau nwyon tŷ gwydr o fewn y meysydd datganoledig, felly wrth reswm gallai gostwng allyriadau tai wneud gwahaniaeth sylweddol.

Cwestiwn 2

Datblygiad y dechnoleg sydd ei hangen ar gyfer tai sy'n defnyddio ynni'n effeithlon iawn, ac i ba raddau y mae'r dechnoleg honno ar gael

Mae adeiladwyr yn tueddu i godi ac adnewyddu tai yn unol a gofynion eu cwsmeriaid neu ofynion rheoliadau adeiladu. Dydym heb eto gael ein hysbysu gan aelod fod cwsmer neu reoliad wedi gofyn am dechnoleg penodol, ac nad yw'r dechnoleg ar gael.

Dylid canolbwyntio ar bwynt pen draw (lleihau allyriadau carbon) yn hytrach na'r modd (hynny yw, technolegau penodol) a pherfformiad gwirioneddol yn hytrach na modelau (e.e. trwy ddefnyddio data o fesuryddion smart).

Cwestiwn 3

Y newidiadau sydd eu hangen i sicrhau bod y stoc dai bresennol yn defnyddio ynni mor effeithlon ag y bo modd

Dylai perfformiad ynni tŷ fod yn un o feini prawf benthyca ar gyfer morgais gan fanciau a chymdeithadau adeiladu. Hynny yw, os yw tŷ'n rhatach i'w redeg, dylai hynny olygu fod gan y prynwr fwy o arian, felly fe ddylai allu fenthyg mwy ar delerau gwell.

Cwestiwn 4

A yw'n bosibl ac yn ymarferol darparu tai fforddiadwy ar raddfa fawr yng Nghymru a'r rheiny'n effeithlon iawn o ran carbon ac yn cynhyrchu mwy o ynni nag y maent yn ei ddefnyddio ac, os felly, sut y gellir cyflawni hyn

Fel Ffederasiwn sy'n gynrychioli adeiladwyr sy'n gweithredu yn bennaf o fewn y farchnad breifat, mae'r ateb yma'n canolbwyntio ar dai fforddiadwy sy'n cael eu darparu gan y sector breifat yn hytrach na gan Gymdeithasau Tai neu Lywodraethau Lleol.

Mae na sialensiau i ateb y galw am dai fforddiadwy fel ag y mae hi, heb grybwyll lefelau effeithlonrwydd y tai.

Os astudiwch chi helyntion y math a maint cwmnïau adeiladu tai dros y degawdau diwethaf, mi welwch chi batrwm amlwg. Gyda threuliad amser, mae nifer y tai sy'n cael eu hadeiladu gan gwmnïau bach wedi dirwyio'n sylweddol, ac erbyn hyn mae rhyw dri chwarter o dai newydd sy'n cael eu codi yng Nghymru yn cael eu hadeiladu gan rhyw hanner dwsin o gwmnïau mawr sy'n gwithredu ar lefel Prydeinig. Dim ond rhyw 15% sy'n cael eu hadeiladu gan gwmnïau maint bach a chanolig.

Pam fod hyn yn broblem yng nghyd-destun yr argyfwng o ddiffyg tai fforddiadwy? Yn syml, dyw'r cwmnïau mawr ddim yn adeiladu digon o dai i ateb y galw. Mae hi'n amlwg felly fod angen mwy o amrywiaeth o ran y nifer a'r math o gwmnïau sy'n adeiladu tai os yw'r cyflenwad am ateb y galw.

Mae yna rwystrau niferus i gwmnïau bach sydd yn awyddus i godi tai. Mae rhain yn cynnwys diffyg mynediad i gyllid priodol, diffyg gweithwyr sy'n ddigonol sgilgar, rheoliadau adeiladu gor-feichus, a system gynllunio aneffeithlon.

Os y bydd codi tai effeithlon yn gosod mwy o faich a chostau ar adeiladwyr bach, gallai hynny fod yn rhwystr ychwanegol i gwmnïau bach rhag codi tai, ac mae'r rhwystrau sy'n bodoli eisioes yn niferus.

Rhaid hefyd gwestiynu os yw lefelau sgiliau'n ddigonol o fewn y diwydiant i gyd-fynd a datblygiadau technolegol.

Cwestiwn 5

Y ffactorau sy'n rhwystr rhag cyflwyno newid trawsnewidiol ym maes adeiladu tai yng Nghymru

Wedi ateb uchod

Cwestiwn 6

Rôl Ofgem a'r grid cenedlaethol o ran galluogi'r grid i esblygu i ddarparu ar gyfer mathau newydd o dai, a'r heriau a gyflwynir wrth i ynni gael ei gyflenwi o ffynonellau wedi'u datganoli

Dim barn

Cwestiwn 7

A oes gan Gymru'r sgiliau angenrheidiol i hwyluso a galluogi newid yn y sector tai

Mae hyn yn ddibynnol ar y dulliau adeiladu. Pa mor anhebyg ydynt i ddulliau presennol?

Cwestiwn 8

Y newidiadau y mae angen eu gwneud i Reoliadau Adeiladu yng Nghymru er mwyn symud yn gyflymach tuag at safonau ynni lle y cynhyrchir bron ddim carbon, a thu hwnt i hynny

Mae hi'n holl-bwysig fod yna atodlen glir ac amserol os y bydd unrhyw newidiadau i Reoliadau Adeiladu yn digwydd i ganiatau i fusnesau a defnyddwyr i baratoi'n effeithlon ac i farchnadoedd deinamig amlygu eu hunain.

Cwestiwn 9

Sut y gellir cynllunio a siapio cymunedau i ddefnyddio ynni'n fwy effeithlon a chynhyrchu llai o garbon (gan gynnwys enghreifftiau o arfer da yng Nghymru a thu hwnt)

Dim barn

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Cynulliad Cenedlaethol Cymru | National Assembly for Wales
Y Pwyllgor Newid Hinsawdd, Amgylchedd a Materion Gwledig | Climate Change, Environment and Rural Affairs Committee
Tai carbon isel: yr her | Low carbon housing: the challenge

Ymateb gan : Bwrdd Hyfforddi'r Diwydiant Adeiladu 2018 (CITB Cymru Wales)
Evidence from : The Construction Industry Training Board 2018 (CITB Cymru Wales)

Recommendations

CITB has a significant body of labour market intelligence on the skills needed to deliver low carbon house building and retrofit at scale, which will be helpful in supporting the Climate Change, Environment and Rural Affairs Committee's inquiry into Low Carbon Housing: the Challenge. We have drawn extensively on this evidence base to form this response.

Having appropriately skilled, environmentally-aware practitioners in Wales's built environment workforce is crucial to ensure that Wales meets the 20,000 affordable homes target in a way which adheres to the principles of the Well-Being of Future Generations Act. In order to achieve this, Welsh Government should:

- Address energy-related skills and knowledge gaps in Wales's built environment workforce, in particular, those relating to energy performance, as identified through labour market intelligence.
- Integrate low carbon and sustainability modules into all vocational training and apprenticeships as supported in the Qualifications Wales Sector Review of Construction.
- Ensure that skills requirements on initiatives are sufficient to drive demand for training and guarantee that appropriate measures are specified and properly installed, particularly on older properties. This should be alongside a renewed commitment to the skills needed for building maintenance.
- Engage with CITB and industry at the earliest opportunity on the detail of the proposed energy efficiency programmes so that appropriate training and qualifications can be identified and up-scaled.
- Create trust and certainty to stimulate the domestic retrofit market, through long term policy commitments and by providing the public and employers with information and expert advice to enable growth in the energy efficiency market over a sustained period of time.
- In conjunction with industry, undertake an initial assessment of the skills requirements to meet the delivery objectives of the strategy, particularly around offsite manufacturing and new technology.
- Ensure that the milestones for the commitments to meet energy efficiency and emissions reductions targets reflect anticipated capacity in the workforce, particularly in relation to current skills shortages.

Low Carbon Homebuilding

1. CITB welcomes the Welsh Government's ambition to ensure that all new houses are built to 'near zero' energy standards, with emissions reductions and high energy efficiency integrated from the start. Successful implementation of these goals will require industry and training providers to embed core knowledge, including new technology, energy efficient design, and consumer interaction and building performance into all relevant vocational and professional pathways.

2. The low carbon economy provides big opportunities for growth and jobs in construction. The Welsh Government can play a key role in growing the wider private-financed energy efficiency market by establishing conditions of market growth and increased confidence through long-term policy commitments. This, in turn, gives confidence to employers to invest in the necessary training.

3. Often energy performance improvements installed in both new build and existing properties can fall short of expectations[1]. Errors in design and implementation have in many cases reduced the performance of new build properties and energy efficiency measures on existing properties. This can be combatted with the introduction of building maintenance modules within existing training.

4. Skills and knowledge gaps in the existing workforce, particularly relating to energy performance, need to be addressed, and the Climate Change, Environment and Rural Affairs Committee and the Regional Skills Partnerships are well placed to coordinate the response to this challenge. Our research shows that delivering low carbon buildings (new build and retrofit) at scale will require investment in skills and training, so that the construction industry can plug skills and knowledge gaps. The Construction Wales Innovation Centre (CWIC) and Supply Chain Sustainability School will have an important role to play in supporting the delivery of this training. By ensuring that tradespeople and professionals are trained to a level that will enable them to work efficiently and cost effectively, the Welsh Government can be confident that the workforce has the skills and knowledge to deliver his ambitious programmes.

5. The strategy should also take account of the special nature of Wales's building stock and the significant quantity of traditional buildings that require retrofitting measures to improve occupier comfort and reduce fuel poverty. In accordance with advice from heritage bodies, it is essential that buildings are in a good state of repair before energy efficiency improvements are made by retrofitting. Properties benefitting from investment schemes should be surveyed by a competent surveyor and sufficient provision allowed for in delivery budgets to repair any property prior to installation of any measures. Therefore, it is essential that surveyors have the necessary skills to ensure that buildings are not only sound but also ready to receive retrofitted energy efficiency products.

6. We recommend that the Committee and Welsh Government engages with CITB and industry at the earliest opportunity around the detail of proposed initiatives so that appropriate training and qualifications can be identified and up-scaled to support delivery.

Skills

7. The majority of skills required to enable growth in the green economy are not new. In Wales the skills that we need to meet the goal of 20,000 affordable homes will often also be those necessary to achieve near zero carbon emissions in building construction. However, there will be sectors in which completely new skills are needed, some in new combinations, and for which new qualifications will need to be developed. Also, zero carbon developments often require more effort in labour hours because of the complexity of the buildings and processes to build them. It takes longer to ensure that the required technical and quality standard is reached.

8. There needs to be stronger links between industry and the educational world in order to ensure that the highest-level skills can be transferred. This will require greater numbers of technical

[1] https://ec.europa.eu/energy/sites/ener/files/documents/20130619-energy_performance_certificates_in_buildings.pdf https://www.epbd-ca.eu/outcomes/2011-2015/CA3-BOOK-2016-A-web.pdf

specialists from industry being able to contribute to the Higher Education and particularly the Further Education sectors, in order to share best practice and expertise effectively.

9. Knowledge of the whole build process is often required of a low carbon construction. This includes an awareness of what other trades are doing to avoid conflicting actions that can damage work by other trades and/or cause delays therefore increasing costs. To increase awareness there needs to be less siloed training in traditional building, which includes elements of commonality.

10. There are professional skills gaps in the retrofit sector around ensuring that the energy efficient solutions implemented are appropriate for the building requiring retrofit improvements. These skills relate to energy assessment and building surveying.

11. Management skills including construction process sequencing are important to manage schemes cost effectively and find ways of offsetting the current additional cost of products. The internal works are where these skills can be particularly important as the number and range of trades is often higher than on more standard specification sites. There needs to be a focus on quality alongside safety.

12. There are many skills areas where there is insufficient provision for the existing workforce to meet the demand from employers. In particular there are shortages in the provision of air tightness, external wall insulation and associated impact awareness training for construction workers, and in the provision of an understanding of different technologies and their benefits.

13. To ensure skills and talent is in place to deliver near zero energy housing, we recommend the following:

    - Welsh Government and industry have active involvement in influencing and changing behaviour. This will encourage learners into careers within the low carbon economy and in homebuilding more generally.
    - Every skill set and qualification being developed with sustainability at its core and low carbon thinking and resource efficiency as a key component of training.
    - Through procurement encourage innovation in the delivery of construction projects in Wales to increase uptake of less labour-intensive modern methods of construction (e.g. lean and offsite construction).
    - Support the growth of offsite construction in Wales, with exploration into the skills necessary when bringing offsite materials onsite, for example with the use of Welsh timber.
    - Work to promote construction as a career option for school leavers in Wales by recognising construction as a STEM career in schools. We currently do this through a range of activities use GoConstruct as base resource.
    - Ensure a new focus on off-site construction and careers, which supports the development of sustainable construction.
    - Focus on the importance of building maintenance, particularly retrofitting, with targeted courses and modules.
    - Promote new ways of working, giving employers a more active role in training, including giving employers themselves training on new technologies so that best practice is shared more easily, and industry is more responsive to innovation.

Technology

14. There is not a lack of new technology in low carbon homebuilding; issues surround affordability, ease of use and training. In order to increase levels of innovation and energy efficiency in new builds there needs to be initiatives to ease the financial burden for early adopters and to increase the knowledge base of the workforce.

15. CITB Cymru Wales supports the promotion of Cardiff Universities' Solcer House as best practice in low carbon house building. Historically technologies such as photovoltaic panels have been retrospectively added to a building which increases cost and creates design complications. Integrating these panels during the initial build reduces expense and is more efficient. However, there needs to be more promotion and training around how to use these technologies.

Waste

16. To help the homebuilding sector reduce waste and promote the circular economy in Wales, construction managers, supervisors and workers on construction projects should be adequately trained and supported to work in a way that helps minimise environmental impacts of construction activities.

17. Construction companies are becoming champions of the circular economy and taking positive steps to significantly improve their resource efficiency but more can be done. Through initiatives and financial incentives from Welsh Government the construction industry can be encouraged to respond by training the workforce in associated environmental skills.

About CITB

CITB is the Industrial Training Board (ITB) for the construction industry in Great Britain (Scotland, England and Wales). CITB is working to ensure that construction employers have the right skills, in the right place, at the right time by investing funds and providing a wide range of industry-led skills and training solutions. It does this through employer engagement in training, providing labour market insights on future skills needs and developing standards and qualifications for the sector. For more details on CITB's work visit: www.citb.co.uk.

Our specific work to improve sustainability in the built environment includes:

- Supporting the Qualification Wales Sector Review of Construction with expert advice and evidence.
- Delivering the widely recognised Site Environment Awareness Training Scheme (SEATS) which help employers comply with environmental legislation
- Funding the Supply Chain Sustainability School to encourage uptake of sustainability learning through the supply chain.