

# Community Housing Cymru Written Response to the Climate Change, Environment and Rural Affairs Committee's consultation on Low Carbon Housing: The Challenge

## CHC's Response

### About Us

**Community Housing Cymru (CHC)** is the representative body for housing associations and community mutuals in Wales, which are all not-for profit organisations. Our members provide over 158,000 homes and related housing services across Wales. In 2016/17, our members directly employed 8,731 people and spent nearly £2bn (directly and indirectly) in the economy, with 84% of this spend retained in Wales. Our members work closely with local government, third sector organisations and the Welsh Government to provide a range of services in communities across Wales.

### Our objectives are to:

- Be the leading voice of the social housing sector.
- Promote the social housing sector in Wales.
- Promote the relief of financial hardship through the sector's provision of low cost social housing.
- Provide services, education, training, information, advice and support to members.
- Encourage and facilitate the provision, construction, improvement and management of low cost social housing by housing associations in Wales.

### Introduction

CHC welcomes the opportunity to respond to the committee's consultation on low carbon homes. Our members are significant stakeholders in the future of Wales' housing and are invested in reducing carbon emissions from the homes they develop.

In CHC's recently launched Housing Horizons Vision<sup>1</sup> we set an ambitious target for the sector. Based on discussion with hundreds of our members over the last year we laid out a long-term vision for housing associations in Wales. Part of this vision was a commitment that homes built by housing associations will be warm and affordable to run. Specifically, we're aiming for the following targets:

- By 2020, all new homes built by housing associations will be built to near-zero-carbon standard.
- By 2036, we want all our homes to meet this standard.

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<sup>1</sup> [https://chcymru.org.uk/uploads/events\\_attachments/Housing\\_Horizons\\_vision\\_-\\_print.pdf](https://chcymru.org.uk/uploads/events_attachments/Housing_Horizons_vision_-_print.pdf)

We acknowledge that these are lofty goals, but we feel that with the right leadership and operating environment, we can deliver for the people of Wales.

Our members' commitment to a low carbon future was noted, in our response to the predecessor committee's 'A Smarter Energy Future for Wales?' consultation and our position remains the same:

“Improving the energy efficiency of homes is one of the key levers to tackling fuel poverty. Energy efficiency lies at the heart of discussions about energy. A home which is highly energy efficient can provide the occupants of those buildings with a more comfortable experience, lower fuel bills, enable reductions in carbon emissions and help ensure increases in energy security for individuals, businesses and communities... The integration of renewable energy technologies when feasible into the built environment offers clear benefits and an additional improvement in the skills and expertise of the workforce operating in the sector in Wales.”

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

The housing association sector is ideally placed to help Wales achieve its low carbon delivery plan. Housing is a contributor to carbon emissions and our members are responsible for a significant element of Wales' housing stock (recent statistics show that housing associations are responsible for two thirds of Wales' 228,684 social housing units), so we are clear that our members are key partners in Wales' transition toward decarbonisation.<sup>2</sup>

The incentives for CHC's members to tackle carbon emissions are significant: the latest estimate is that there are 291,000 households living in fuel poverty, equivalent to 23% of households in Wales.<sup>3</sup> By improving the types of homes our members provide to tenants, fuel poverty amongst housing association tenants can be addressed and a significant burden on the income of many of those affected can be diminished. As well as helping Wales to achieve its carbon reduction targets, as set out in the Environment (Wales) Act, and under the Climate Change Act 2008 (N.B. the UK Government's Zero Carbon Buildings policy, designed to help meet the Climate Change Act, provides a useful definition of the core requirements for a building to qualify as zero carbon) the opportunity to contribute to a reduction of the financial pressures on many of our members' tenants, as they continue to deal with the imposition of welfare reform, is one the sector cannot miss.<sup>4</sup>

Further, research carried out by the charity Sustainable Homes into the relative financial performance of social housing units in relation to their energy efficiency rating found that as homes were ranked as more energy efficient, they turned out to be void for a shorter length of time – on average, 31% shorter for efficient band B properties compared to those in bands E and F.<sup>5</sup>

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<sup>2</sup> <http://gov.wales/statistics-and-research/social-housing-stock-rents/?lang=en>

<sup>3</sup> <http://gov.wales/topics/environmentcountryside/energy/fuelpoverty/?lang=en>

<sup>4</sup> <http://www.zerocarbonhub.org/zero-carbon-policy/zero-carbon-policy>

<sup>5</sup> <http://woodknowledge.wales/special-feature/pentre-solar>

In our Housing Horizons vision, CHC has set out an ambition for our members to develop 75,000 homes by 2036. Clearly, this gives us scope to contribute significantly to the reduction of carbon emissions from Wales' housing stock.

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

The Solcer project demonstrated, albeit on a very small scale, that near-zero carbon housing can be delivered at affordable rates, using locally sourced technology and materials. CHC members have started to make progress on putting the lessons learned into practice, with a number of successful applications to the Welsh Government's Innovative Housing Programme to fund highly energy efficient housing, utilising a range of available technology (see section on delivery at scale).

While there is a great deal of technology available to developers who are looking to build to near-zero levels and create communities which embrace energy efficiency, much of it presents new barriers, with which our members are currently grappling. The skills issue, touched upon elsewhere in this document, is a key area of focus, in this regard. The skills and knowledge required to install and maintain technology such as ground source heat pumps are often in short supply. Similarly, the behavioural issues mentioned elsewhere are sharply brought into focus when discussing the operation of technology which is new to our members' tenants. While both of these challenges can be overcome, through steady investment in skills on the one hand and the direction of resources to better educate tenants on the other, they remain, at present, areas of frustration for some housing associations and good reasons for a gradual and incremental approach to any new legislation in this area.

Our members also have some concerns about the unintended consequences of rushing into the use of apparently attractive new technology; there is much to learn, for example, about how we maintain air quality in homes built using highly technologically advanced materials. Again, the necessary piloting and learning is ongoing within our sector but we would advise gradual approaches to policy imposition.

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

Bringing existing stock to as close to zero carbon emissions as possible is going to be a far greater challenge for Welsh housing associations than that of building new homes to higher standards. Wales has, by some estimates, the oldest housing stock in Europe and much of this is in areas which suffer from extreme climactic conditions. Recognition of the significant variance of the challenges faced by our members in decarbonising their stock in any future government policy directives will be vital.

The Welsh Government's ambitious and forward thinking Innovative Homes Programme provides housing associations with excellent opportunities to pilot and learn from novel approaches in the development of new homes, but it does not fund the retrofit of existing properties (understandably, as one of the programme's key goals is to increase the number of homes in Wales). A similar approach from Welsh Government to providing funding and learning opportunities to the retrofitting of existing homes, which are not at the near-zero standard we hope to achieve, would be warmly welcomed by the sector.

As with new build, there are innovative approaches to retrofit available to the sector, such as Energiesprong and Beattie Passive's TeaCosy approach, which Welsh Government could fund pilots of, enabling the sector to minimise the risk in learning from these pilots.<sup>6</sup> As with the Innovative Housing Programme, monitoring and sharing learning would have to be at the heart of any such programme.

On the subject of shared learning on effective (and, more importantly, ineffective) methods of reducing carbon emissions from old stock, the sector can learn much from the forthcoming third round of the Arbed project. From what we have been told, in advance, the latest round of the programme will take a whole house approach, looking at each home in context, as an individual entity, not applying the same method to every building and considering issues such as local climactic conditions, such as wind driven rain, solar gain and risk of flooding. We also understand that Arbed 3 will consider the unintended consequences of retrofit, which is an area of clear interest and builds on the BRE's work on the unintended consequences of solid wall insulation.<sup>7</sup> The results of this programme will have a positive effect on our knowledge as to how to achieve decarbonisation targets. CHC will take an active role in disseminating learning from the programme. We welcome Welsh Government investment in their Warm Homes programme, which includes Arbed.

### **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;**

As noted, successful applications to the Innovative Housing Programme (IHP) will be built up over the coming months and will demonstrate whether and how low carbon, energy positive, affordable housing can be delivered at scale. Successful applicants are judged against the impact they will have on the Wellbeing of Future Generations act's indicators. It is important that the success of these projects in minimising carbon emissions and fuel poverty is effectively monitored and that learning is effectively shared. The housing association sector is well represented in the programme's governance mechanisms and CHC will disseminate learning from the process in conjunction with Welsh Government, as appropriate.

We feel that, in order to develop at the sort of scale necessary to meet the various targets outlined above, it will be necessary to create a great deal of future housing off-site. The benefits of off-site manufacture for developing sustainable, near-zero carbon homes include the fact that quality control is of a higher standard, so it is easier to create higher quality sealed homes in a factory than it is on-site, reducing heat loss from the finished product. Crucially it can also mean quicker production of homes and, if done at sufficient scale, could reduce costs.

CHC members are increasingly investing in off-site manufacture and the Innovative Housing Programme has provided great opportunities to learn more about this style of development, and not just by investing directly in buildings. A consortium of housing associations and the Wales Co-operative Centre, led by Coastal Housing, has received

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<sup>6</sup> <http://beattiepassiveprojects.com/woodstock/technical.php> ; <http://www.energiesprong.uk/>

<sup>7</sup> [http://www.bre.co.uk/filelibrary/pdf/projects/swi/UnintendedConsequencesRoutemap\\_v4.0\\_160316\\_final.pdf](http://www.bre.co.uk/filelibrary/pdf/projects/swi/UnintendedConsequencesRoutemap_v4.0_160316_final.pdf)

revenue funding to research the possibilities and benefits of expanding the use of offsite construction in South Wales and, though the work is in its very early stages now, we anticipate that the learning from this research will be of real value in driving forward the off-site agenda for the whole sector.

Various successful IHP applicants have received capital funding and are investing directly in off-site development. As an example, Valleys to Coast (V2C) were successful with a bid to develop 'Barnhaus' style accommodation in Plas Morlais, Bridgend, which will provide 4 homes built to high-energy performance standard, using frames manufactured off-site and straw bale insulation which V2C anticipate providing negative CO2 emissions. Similarly, Linc Cymru are working on a project, which was successful in achieving IHP grant, alongside F1 Modular, an off-site developer based in Powys. The project is an Extra Care facility in Aberdare, which will provide 40 homes and enable Linc Cymru to develop their learning (and that of the wider sector) as to the performance standards achievable using this form of development. A further example is the 16- house 'Homes as Power Stations' Active Home Pobl development in Neath Port Talbot, which will use locally developed timber frames and a factory insulated panel system ('Trisowarm'), as well as integrated solar PV roofs and solar collecting wall cladding. Power generated by these methods will be stored on-site using batteries and negates the need for a gas supply. Early signs indicate that the costs of this approach will be higher than a traditional development, but the purpose of the project is to demonstrate that it can be achieved, and that if rolled out at volume, can be made to work at affordable levels.

In short, we are optimistic that the development of new near-zero carbon homes can be achieved at scale by our members, but are awaiting the learning from the opening rounds of the Innovative Housing Programme to provide certainty as to the best methods to utilise.

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

### **Behaviour**

Members have noted various concerns about the impact of resident behaviour on adoption of new ways of operating near-zero carbon homes. Examples of the types of issues experienced include instances when tenants have turned off fans designed to maintain air quality in buildings, leading to mould growth. Housing associations are adapting to these behavioural issues, providing handover information to tenants, or in some cases designing out tenants' ability to access controls, but as with all aspects of providing near-zero carbon homes, this will take time to get right and requires adaptation from both landlords and tenants.

CHC has done much to promote behavioural economics in other aspects of housing over recent years, with particular focus on how nudges can be used to diminish unwanted behaviours, in housing management, and we feel that there is a clear application here for similar techniques, which we will explore.

## **Funding**

At an event held by CHC recently to discuss the issue of near-zero homes, we were informed that to develop to Passivhaus standard, a housing association could expect to pay an additional £15,000 on top of the costs for traditional build. As noted in the building regulation section, later, these costs would need to be met by some form of enhanced subsidy. Similarly, for the bigger task of retrofitting existing stock to be significantly more efficient, additional funding is likely to be required.

## **Skills**

CHC members have noted some concern as to a lack of appropriately skilled professionals working in the building industry in Wales. As a sector, we are extremely motivated to retain as much of our expenditure within Wales as possible – enhancing our local economies has benefits for residents and landlords alike and in 2016/17 we managed to retain 84p in every £1 spent in Wales. Our Housing Horizons vision is that we will increase this over the coming years to 95p and that by 2036 we will have supported up to 150,000 job and training opportunities. Inevitably many of these will fall within the construction field and we are thus keen that Welsh Government employment strategy takes note of the areas in which we are lacking and that the government works with the housing association sector to enable us to ensure the quantity and quality of appropriately skilled workers within the Welsh workforce.

## **Land Access**

Developers of near-zero carbon affordable homes faces the same issue as those of any other affordable homes and one of the consistent barriers to the sector's ability to do this at the pace needed to overcome the housing crisis is access to land at affordable rates. We have outlined some suggested approaches to enable the freeing up of developable land in our recent report, 'Planning for 20,000 Homes'.<sup>8</sup>

## **Planning**

Planning was noted, in consultation with our members, as being a key issue in stymying the move toward low-carbon homes and is an area we urge the inquiry to give significant consideration to. As an example of how planners might specifically stall low-carbon development, we have been told about homes, designed to be optimally positioned to generate maximum solar energy which have been ordered to be re-orientated for aesthetic reasons, reducing the effectiveness of their photo-voltaic panels.

Planning policy has to look at whether in the future it will be more important to society that energy generation will outweigh current approaches to aesthetic considerations. Ministerial guidance on this point needs to be clear. If we want to develop truly low carbon housing in Wales, we need to make a dramatic shift towards planners favouring low carbon design as a priority.

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<sup>8</sup> [https://chcymru.org.uk/uploads/events\\_attachments/Briefing\\_20000-Homes\\_ENG\\_Final-2.pdf](https://chcymru.org.uk/uploads/events_attachments/Briefing_20000-Homes_ENG_Final-2.pdf)

Away from low-carbon homes, specifically, planning is noted by our members as a point of significant concern, generally, in the development of affordable housing. Housing associations have, in some cases, struggled with opposition to developments based on stigma of social housing and social housing tenants, they have experienced problems with overzealous application of pre-commencement conditions and they have had developments delayed by hold-ups caused by utilities companies (with misalignment of Welsh Water's asset management plans with local development plans, in particular, causing significant delays). While we, as a sector, have some contribution to make to bring planners along on this decarbonisation journey with us, we are also clear that strong leadership from Welsh Government will continue to be required. Planning is an area which has been significantly negatively affected by the UK Government's austerity drive and is heavily under-resourced. Again, we have laid out our concerns and suggested remedies in the 'Planning for 20,000 Homes' report.

The recent decision, to deny planning permission to the solar farm at Rhoscoch in Anglesey which would have sustainably powered 15,000 homes, against planning officer recommendation, is an indication of the sort of delay to the decarbonisation agenda that can be thrown up by the planning system, in its current form.

## **Brexit**

Of growing concern to our members are the ramifications of Brexit. Concerns focus not just on the potential reduction in numbers of skilled workers, but also the potential for increase in the cost of materials. There is also a legislative loss, with the removal of EU control over UK legislation comes the removal of the EU's Energy Performance of Buildings Directive, which sets out targets for buildings across Europe. How the UK Government responds to replace this may lead to further delays in the sector's move to decarbonisation.<sup>9</sup>

### **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?**

CHC has not yet done any research as to how our members can work with Ofgem and the National Grid, but we welcome improved interaction with all utilities providers, given the importance of their roles in reducing fuel poverty and our move toward decarbonised stock and would be glad to discuss with them how our members can work toward these goals.

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

Broadly, CHC members have highlighted concerns about the availability of skilled professionals in all areas of construction, including installation and maintenance of the technologies needed to deliver near-zero carbon homes. They are concerned about the take-up of courses that would provide the skills needed to develop components, like integrated PV roofs.

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<sup>9</sup> <https://ec.europa.eu/energy/en/topics/energy-efficiency/buildings/nearly-zero-energy-buildings>

There are some reasons for optimism, though. As noted, the Innovative Housing Programme will lead to the development of new skills across a number of projects, which are likely to form the basis of our sector's response to decarbonisation. Additionally, some of our members are taking steps to reduce reliance on the diminished skilled workforce to enable them to build to near-zero standard, regardless. As an example, United Welsh are working on a 17 home development at the site of the former Cwm Ifor Primary School in Caerphilly. The homes are to be built using Beattie Passive's patented system, which delivers highly thermally efficient homes at low cost and using low-skilled workers (and, due to the off-site process employed, require no 'wet trades', at all), with training provided by Beattie Passive. If the sector continues to move toward off-site manufacture, there will inevitably be fewer skilled people needed on-site and more work available in factories creating panels, etc.

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

The Welsh Assembly's Smarter Energy Future for Wales document called for urgent revision of Building Regulations to ensure that all new houses are built to 'near zero' energy standards. CHC supports this aim, but our members have been clear that any changes to regulations should be implemented incrementally to allow the industry to adapt and respond to the challenges of building near-zero homes, such as potential skills shortages. Applying a blanket SAP rating as a target for all homes would be inappropriate and we would urge a nuanced approach, which takes account of the variety of factors (location, age of stock, material, etc.) which will affect a home's abilities to achieve significant carbon reduction.

One idea posed at a CHC consultation event, on the issue of regulation that allows for incremental improvement to buildings is that landlords (and indeed homeowners, as we feel that these standards should be applied across tenure) could be mandated to bring existing homes to standard at certain 'trigger points' (such as when homes change hands, when planning permission is sought for extensions or when a HA property becomes void). The implications of this for planned maintenance and procurement by HAs would need to be considered, but the benefit of such an approach would be that improvements could be made on a home by home basis and would thus be more likely to be successful, as this approach would necessitate consideration of that house's specific requirements in greater detail than as part of an ongoing programme of work across a larger area.

We are reassured that Welsh Government have stated that they do not intend to review Part L of the building regulations, which covers conservation of fuel and power, in isolation - we understand that Part F, which relates to ventilation, is going to be considered in the same review - and encourage future amends to regulation to maintain this holistic approach, expanding on it where feasible to look at carbon reduction in the round (considering transport and how that can work with housing to reduce carbon output, for example).

Members have also told us that changes to building regulations should not introduce prescriptive requirements in terms of the methods of achieving energy efficiency performance. Rather, increasing the performance requirement through the existing measurement process maintains flexibility in the means of achieving this, which allows

housing associations opportunity to innovate and find the most effective methods for their individual operational contexts. Current building regulations do not heavily prescribe the methods of achieving the required efficiency rating of a dwelling. The SAP rating of the property demonstrates compliance with the performance requirements of these regulations and WHQS.

Changes to regulations should also be matched with changes to funding, as appropriate. If our members are required to deliver more expensive products, we hope that this would be matched by an increase in grant or perhaps an extension of the approach taken by the Innovative Homes Programme, whereby innovative elements of successful bids are funded in addition to the existing grant (though we are not advocating that this be done on a competitive basis!).

On a similar note, consideration should be given to the issue of acceptable cost guidelines (ACG). In the cases in which the development of near-zero homes causes increased costs, there is the potential that, if ACG does not flex with the increased costs, investment in some communities may be made less financially viable for our members.

A further issue to consider is that of Section 106 homes handed over from private developers, which are unlikely to be built to required standards, unless the private sector is mandated to deliver near-zero homes. We would urge that the same incremental approach to improving standards is applied across all developers in Wales, to ensure that the full range of Wales' housing stock is of a standard fit for future generations.

Finally, CHC members have called for any new legislative performance requirements to reflect the differences in producing a new home, compared to bringing an existing home up to standard or creating new homes by converting existing buildings. Each of these three categories will provide different challenges for our members and it would not be appropriate to standardise regulation across all three, without considering these challenges.

### **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 key issues for our members in the development of communities which are more energy efficient come down to behaviour, as set out in the section on barriers.

We have heard examples of good practice from housing associations in addressing resident energy behaviour; for example, Cartrefi Conwy engaged a Knowledge Transfer Partnership with Bangor University to improve energy efficiency of existing housing stock and undertake a feasibility assessment for setting up community renewable energy schemes. Similarly, as part of their Powering Up Communities First project, Melin Homes have employed an Energy Officer whose role covers everything from helping tenants to save money by switching to a cheaper provider to the provision of technical expertise in managing energy saving technology in their homes. By addressing individual behaviours, communities can be developed, which are educated as to how to limit their carbon footprint. The Powering Up Communities First project has introduced a community energy forum for Melin tenants, as well as Green Energy Champions, who can act on a peer-to-peer basis to encourage better energy behaviours amongst other members of their communities.

An alternative approach to overcoming the barriers presented by tenant behaviour in response to new technology is to simplify, as much as possible. The Pentre Solar development in Pembrokeshire is designed to cut down as far as feasible on devices that tenants could misuse and enable simple approaches to temperature control.

On a broader community point, technology can be applied which offers community-focussed solutions to reducing carbon emissions, such as district heating systems. While these can cause issues (should one boiler fail, the whole system is affected), they offer the potential for significant carbon reductions.