



Low Carbon Housing:  
The Challenge. Call for  
Evidence Response

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CLILC • WLGA

# INTRODUCTION

1. The Welsh Local Government Association (WLGA) represents the 22 local authorities in Wales. The three national park authorities and the three fire and rescue authorities are associate members.
2. It seeks to provide representation to local authorities within an emerging policy framework that satisfies priorities of our members and delivers a broad range of services that add value to Welsh Local Government and the communities they serve.
3. WLGA welcomes the opportunity to respond to the Call for Evidence in respect of Low Carbon Housing: The Challenge.
4. In addressing the issues surrounding the progression of low carbon housing the links to the requirements and duties of the Environment (Wales) Act (Carbon Budgets and Sustainable Management of Natural Resources), the Wellbeing of Future Generations (Wales) Act (the Well-being Goals, the Sustainable Development Principle and the 5 Ways of Working) and the challenge presented to the public sector, by the Cabinet Secretary for Environment and Rural Affairs, to be carbon neutral by 2030 must be acknowledged.
5. In developing low carbon housing, it should not just be lowering carbon emissions but also contributing towards the alleviation of fuel poverty and improving the social, economic, environmental and cultural well-being of Wales.

**Question 1: What role can housing play in Wales' low carbon transition, including the potential positive impacts on greenhouse gas emissions?**

6. The role that housing can play in Wales' low carbon transition must recognise how the public sector, the private sector and Registered Social Landlords (RSL) all have a part to play in delivery.

7. Whereas the building of new energy efficient, low carbon housing will contribute to the low emissions strategy it must be recognised that much of the current housing stock will not have been built to the same standards and will still be in use in 2050 and beyond.
8. The drive for low-carbon housing will contribute to the Environment Act goal of reducing emissions of greenhouse gases by at least 80% by 2050. Initial interim targets could be more challenging than a linear progression to 80% i.e. setting robust, relevant, understandable and achievable targets to prompt **early** action to reduce emissions, budget on budget, towards the target of achieving or exceeding 80% by 2050. Front loading the targets in the carbon budgets 2016 -2020 →2026-2030 would demonstrate commitment and provide the impetus to stimulate action. However, this approach would need to be properly resourced if it is to be effective.
9. Planning has a major role in determining requirements for low carbon and energy efficiency in new developments (reference Energiewend in Germany where low carbon and sustainability measures must be included in the design and build, with energy efficiency, photovoltaic panels and wind turbines located within communities). Within Energiewend, community energy plays a far greater part than in the UK where the power stations are the major energy producer.
10. The roll out of the Wales Quality Housing Standard, enveloping schemes of external refurbishment, boiler replacement programmes and installation of loft insulation (e.g. via ECO, ARBED and NEST) can all help to ensure that the existing social housing stock is as energy efficient as can be. Ensuring building fabric is correct is important as this gives longer term carbon benefits.

**Question 2: The development and availability of technology needed for highly energy efficient housing.**

11. Research and development of battery storage, could have a significant impact upon the future development of wind turbines and photovoltaic panels to meet community needs. Consideration of the possible wider application of hydrogen fuel technology could also be explored.
12. From an economic perspective training and increasing local capacity to implement and install low carbon, energy efficient measures into housing in Wales must be developed.
13. In addition, measures to improve supply chain development within Wales with local contractors/suppliers/products would contribute to the local economy whilst also reducing the transport costs and associated carbon emissions. Sustainable sourcing of materials at a local level is also important. In the development and build of a Passivhaus project in Swansea, many barriers were overcome in the process of procuring the specialist materials required for the passivhaus construction and ensuring the workforce very quickly acquired skills needed to build the properties to this non-conventional specification.
14. There should be support and encouragement for Communal energy projects. The use of renewable technology including solar PV, Ground Source Heat Pumps for off gas areas with the intention of providing for local energy needs can help to ensure that rural communities are not disadvantaged or subject to higher costs/tariffs, and to bring Standard Assessment Procedure (SAP) ratings up to acceptable levels. SAP ratings are a measure of energy efficiency.

**Question 3 – What changes are needed to ensure that existing housing stock is as energy efficient as it can be?**

15. It is essential that energy efficiency measures and requirements are assessed by independent surveyors to ensure that the efficiency measures being introduced into housing stock are applicable and appropriate. This would reduce the risk of

'biased' and inappropriate measures being proposed.

16. Social housing stock needs to continue to be brought in line with the WQHS e.g. enveloping and boiler replacement programmes, along with consideration of solar installation/battery storage.
17. The rollout of SMART meters will help to contribute to better energy efficiencies but there should be one standard product for all suppliers/tariffs to ensure compatibility when switching suppliers.
18. There is a need to facilitate research into, and development of, new standards for all public sector and RSL new build properties to ensure all new properties are of the highest efficiency standards.
19. The introduction of new technology is only effective when the user has a full understanding of how the technology works, what can be achieved and why it is important to implement. Housing staff can work with tenants to ensure that they are aware of their energy use, initiate behaviour change including the use of SMART meters, and ensure that tenants are aware of high tariffs associated with prepayment meters.

**Question 4: 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;**

20. There needs to be a determination to deliver social, economic, environmental and cultural well-being through these energy efficiency measures. They will contribute to the Sustainable Management of Natural Resources and the achievement of carbon budget targets. The actions can also contribute towards the achievement of wider Well-being Goals.

21. There needs to be an acknowledgement and a willingness to learn lessons from projects in Wales, the UK and elsewhere in the world. Lessons can be learnt through cost comparison exercises, benchmarking against buildings constructed to a high energy efficiency standard (e.g. Passivhaus standard).
22. The Innovative Housing Programme projects in Wales could be a good source of understanding of what works well and where improvements need to be made.
23. There needs to be a commitment to provide adequate resources, including use of 'spend to save' initiatives. The principles underlying the 'Green Deal' were right even if the programme was poorly delivered.
24. Ministers need to be strong in their determination to deliver. It is essential that they are not unduly influenced by developers and contractors into accepting building standards which do not provide the required returns of energy efficiency and carbon emissions standards.

**Question 5: What are the barriers to delivering transformative change in house building in Wales?**

25. There are several barriers to delivering transformative change:
26. There is perhaps an unwillingness of developers to embrace changes necessary to improve standards but which may not provide them with a return of sufficient magnitude.
27. There are claims that higher specifications mean higher costs per unit leading to fewer units being built.
28. It is essential that the training and development of the current and up-coming work force in new skills and technology is progressed to meet the demand to prevent skills shortages from becoming a barrier (which could be exacerbated if there are restrictions on the movement of labour post-Brexit).

29. There is currently a perverse incentive in relation to construction in that new build is not subject to VAT whereas VAT is applicable to the upgrading of older properties. This can influence decisions over whether to retrofit or to demolish and start again.
30. The development of Community energy projects can be hampered by prohibitive connection fees to join the National Grid. If more Community energy groups could be established to meet the needs of their communities, for example by utilising battery storage, this may avoid the need to connect to the national grid.
31. Communication and awareness raising programmes to educate tenants and householders to think differently about the way they use energy and to understand how to use new technology also have a role to play.

**Question 6: 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?**

32. The current centralised production and distribution of energy needs to be reviewed to address the aging infrastructure and its capability to respond to the modern requirements. A national grid will continue to have an important role to play for the foreseeable future and it is equally important that widespread development of community energy schemes does not undermine the viability of the grid.
33. Ofgem could usefully explore alternative models of generation and distribution such as Energiewend in Germany.

**Question 7: Whether Wales has the requisite skills to facilitate and enable change in the housing sector;**

34. The Welsh School of Architecture (WSA) is engaged in a project to monitor the Passivhaus scheme in Swansea, and model in any additional renewables will

further improve the specification. WSA as part of the part of Low Carbon Built Environment (LCBE) project, will undertake post occupancy monitoring of the housing to include the performance of building, the systems and the occupants. The WSA will also undertake post design modelling to investigate how the housing could be improved further to enhance the low carbon aspect. This will provide feedback on the whole process of changing the traditional approach to housing to a low carbon approach. Results will be widely disseminated in both academic and non-academic journals and events to help to encourage wider uptake of low carbon technologies and to promote Wales as a leader in affordable low carbon new build housing.

35. In 2015 the Construction Industry Training Board (CITB) announced an investment of £6.5m to establish an innovative construction training facility in Wales. A consortium led by the University of Wales Trinity St David was formed with pan-Wales organisations comprising four further education colleges plus the Building Research Establishment (BRE) and Tidal Lagoon Swansea Bay. This innovative partnership is working together to develop consistent, seamless provision throughout Wales of specialist and bespoke construction-related training from Levels 1-7.
36. The partnership has established the Construction Wales Innovation Centre (CWIC), a hub and spoke model. The CWIC aims to make a significant contribution to economic growth and job creation by responding to the current demand for skills in the construction industry and allied industries, as well as those arising from several large construction projects planned for Wales including the Metro, new nuclear builds and energy projects.

**Question 8: What changes are needed to Building Regulations in Wales to accelerate progress towards 'near zero' energy standards and beyond?**

37. Part L – Some improvements to the terminology used are needed. It should be defining standards rather than using terminology like 'worst acceptable standard' as this gives the impression that that standard 'will do'

38. TAN12 – details sustainable communities, community heating etc yet WG have scrapped the Code for Sustainable Homes. There needs to be clarity on direction of travel.
39. Consideration needs to be given as to how we can meet Local Development Plan housing targets while driving up standards across the sector.
40. How might we ensure that affordable housing delivered through Section 106 agreements is low carbon, energy efficient, this will affect viability and deliver less units.

**Question 9: 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).**

41. Zero Carbon Zone (ZCZ) pilots can be used as examples of how communities can function at near to or zero carbon levels, to inform roll out of technologies and functionality across Wales.
42. To date such schemes have not been particularly well communicated or sufficiently resourced, so often they are not successful or continue slowly in the background. They need to be driven if the outcomes are to be realised.
43. Changes to building regulations and planning policy could be considered, working with developers in all sectors to ensure they are deliverable
44. New council, RSL development and regeneration projects could lead the way.
45. It is important to can demonstrate how a mixed tenure approach can be viable in terms of payback / market sales where a higher specification has been used.

**For further information please contact:**

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