

BSI response to the Senedd Climate Change, Environment, and Infrastructure Committee: Decarbonisation of housing – decarbonising the private housing sector

1. Introduction

BSI is the National Standards Body for the whole of the UK. We are responsible independently for preparing British Standards and for coordinating the input of UK experts to European and international standards committees.

BSI represents the UK view on standards in Europe via the European Standards Organizations CEN and CENELEC and internationally via ISO and IEC. BSI is a member of ETSI (The European Telecommunications Standards Institute) and provides support to DCMS through their membership of ITU (the International Telecommunication Union).

In its role as the UK's National Standards Body, BSI provides the infrastructure for over 13,000 experts, who are the voice of UK economic and social interests, to be influential in the international standards organisations. BSI has a public interest responsibility to develop and maintain the standards infrastructure to support UK emerging industries at home and internationally.

We are pleased to contribute to the Welsh Senedd's Climate Change, Environment, and Infrastructure Committee's consultation – Decarbonisation of housing: decarbonising the private housing sector. **BSI stands ready to support the Committee Members in the progress of this inquiry, and support the Welsh Government, using standards to help make a significant contribution to decarbonization and sustainability in Wales.**

2. The Built Environment and Carbon Emissions

The built environment currently accounts for at least 40% of the total carbon emissions and huge changes are needed from the sector to drastically reduce the environmental impact on the planet. This will require all new buildings to be net zero carbon by 2030 and all existing ones by 2050.ⁱ

There are significant key challenges in decarbonizing the built environment, which will require the need for retrofitting within respective housing sectors. In Wales, there are additional issues due to the ageing housing stock that will cause potential financial and practical issues for the Welsh Government, to meet net zero goals and improve energy efficiency across the Welsh housing sectors.

We are aware of the work undertaken by the Welsh Government at present to consult to decarbonize homes and the 'Welsh Housing Quality Standard 2023'. As outlined in the consultation there is a 'need to start decarbonizing the Welsh housing stock at scale.'ⁱⁱ

To achieve this, there are key challenges that need to be considered in Wales to achieve net zero and decarbonize housing.

They include:



- Continued decarbonization of the electricity grid
- Phasing out of fossil fuels in new homes
- Future-proofing all new homes for low-carbon heating (e.g. heat pumps, heat storage)
- A move away from gas cooking
- Retrofitting existing homes to make them low-carbon and climate-resilient

Focussing on some of these key issues in Wales: -

Decarbonizing the electricity grid

- There is a major shift from gas to electricity as the main source of heating, as electricity becomes much cleaner and renewable energy capacity grows. Regulations in Wales will have to respond, through future-proofing homes for future generations when gas has ceased to be used. Wales is a net energy exporter, and the fifth largest exporter of electricity in 2019,ⁱⁱⁱ and has a role to play in contributing to decarbonization within Wales and the export market.

Retrofitting

- With the decarbonization of heat, there is a need to focus on the quality, safety and energy efficiency of the Welsh housing stock, and the specific issues that exist. For example, Wales has one of the oldest housing stocks in Europe^{iv} and many houses in Wales are solid-wall and driving rain affects some retrofit solutions with no cavity walls and a potential for the build-up of moisture. As such there needs to be decisions made about what houses need external insulation and which may need to be rebuilt - as many old houses may not be fit-for-purpose.
- Furthermore, with the increased use of electricity within the home, Welsh Government has previously identified the risk of fire within older properties.^v BSI believes that it has standards such as PAS 2035/2030 that can assist the Welsh Government in its roll out of its Optimised Retrofit Programme.^{vi}

3. BSI's work on Net Zero

As the National Standards Body for all the UK and our commitment to assisting the Welsh Government, BSI has developed a significant suite of standards and initiatives towards net zero.

Standards provide knowledge, guidance, best practice, consistent and credible methodologies, and assessment techniques that can be used by organisations to implement and develop emissions lowering protocols and accelerate the transition to net zero.

BSI has extensive experience in sustainability and energy standardization and maintains an extensive portfolio of climate-related standards including for greenhouse gas management, climate change mitigation and adaptation, and investment in climate positive activities. We also maintain a broad portfolio of standards to support energy efficiency, safety, grid stability and the security of energy supply. **All of these could be beneficial to the Welsh Government to achieve its policy goals.**

Our standards support the delivery of government policies and help industry meet regulatory requirements. BSI's strategic, innovation-driven, standardization programmes help drive market transformation and sustainable growth. Working across the energy sector, we deploy flexible standards development mechanisms to create best practice, keeping pace with fast-changing technology and commercial innovations.

BSI has published dedicated guidance^{vii} for organisations on net zero and is working on developing this into pathways for large businesses and SMEs to help them understand how standards will support their transition plans and accelerate their net zero ambitions.



BSI standards and standards programmes are supporting the deployment of energy smart appliances, the hydrogen economy, the Faraday battery challenge, smart cities, and electric and autonomous vehicles. We are supporting the Integrity Council for Voluntary Carbon Markets (ICVCM) develop the Core Carbon Principles and the associated assessment methodologies. Further information on our Energy Services Appliances Programme^{viii} and the Faraday Battery Challenge^{ix} are available on our website.

4. Standards to assist Welsh Government on decarbonization and retrofitting

BSI's PAS 2035/2030 on retrofitting dwellings^x is a key document in a framework of new and existing standards on how to conduct effective energy retrofits of existing buildings. **We draw this standard to the attention of the members of the Climate Change, Environment and Infrastructure Committee as BSI believes it will make a significant contribution to the decarbonization of Welsh homes.**

Welsh Homes are typically much less energy efficient than newly constructed buildings, increasing costs for home occupiers and business alike. PAS 2035/2030 provides a dedicated specification for anyone who wants to install energy efficiency measures into an existing dwelling, whether that building is a Victorian terraced house, or a two-bedroom apartment built in the 1990's.

PAS 2035 provides a "whole house" approach for retrofitting dwellings including how to carry out an assessment, identify improvement options, develop a design and specify Energy Efficiency Measures (EEM) and monitor retrofit projects.

PAS 2030, which was redeveloped in conjunction with PAS 2035, covers the installation, commissioning, and handover of retrofit projects.

PAS 2035/2030 on retrofitting dwellings can be adopted by all those engaged in the management, design, and installation of energy efficiency measures in existing buildings including:

- Retrofit Assessors, Co-ordinators, Designers, Evaluators and Installers working in - Commercial building contractors, Specialist installers, - Local SME builders and independent tradespeople working alone or in small teams - Certification Bodies.

The PAS also covers a comprehensive range of EEMs which are intended to deliver improvements to the fabric of a building e.g. through insulation and airtightness; and improve services through installation of efficient heating and cooling systems with smart controls, and systems using low or zero carbon (LZC) technologies.

In addition to setting out requirements of all the above, PAS 2035 also specifies requirements for advising building occupants about improvement options appropriate to their homes, and the efficient and appropriate use and maintenance of their retrofitted homes as well as for monitoring and evaluating retrofit projects when appropriate, and feeding back lessons learned to all parts of the supply chain, including the building occupants.

PAS 2035/2030 covers work that is initiated, procured, funded, and delivered in a variety of ways including:

- Retrofit programmes delivered under the Trustmark quality scheme and/or funded by national or local government e.g. the Energy Company Obligation (ECO)
- Retrofit programmes initiated and/or funded by landlords, including social housing organizations, private landlords in the domestic sector, and commercial property portfolio holders
- Retrofit of individual buildings by their owners and/or occupants, including both domestic and commercial owner-occupiers
- Retrofit that is integrated with and forms part of broader repairs, maintenance, and improvement (RMI) activity related to individual buildings or building stocks.

BSI believes that this PAS can contribute to the Welsh Government's net zero goals and will help to improve the energy efficiency of housing. We would be pleased to provide further assistance to the Committee as part of this inquiry into the decarbonization of Welsh homes as appropriate.

5. Next Steps

BSI would welcome further consideration by the Committee on how standards can support the Welsh Government's aims to decarbonize of Welsh housing stock.

We are in touch with the Welsh Government officials on the built environment issues, but should the Committee require further information on standards to support Wales's net zero ambition we have experts well-placed to support initiatives for Welsh decarbonization.

For more information please contact:

Robert Jervis-Gibbons
Government Engagement Manager for Wales
British Standards Institution
Email: Robert.Jervisgibbons@bsigroup.com

22 August 2022

ⁱ BSI Built Environment Net Zero <https://www.bsigroup.com/en-GB/blog/Built-Environment-Blog/the-built-environments-journey-to-net-zero/>

ⁱⁱ Welsh Housing Quality Standard 2023 <https://gov.wales/welsh-housing-quality-standard-2023-html>

ⁱⁱⁱ Welsh Government, Energy Generation in Wales - <https://gov.wales/sites/default/files/publications/2021-01/energy-generation-in-wales-2019.pdf>

^{iv} Welsh Government - <https://gov.wales/sites/default/files/publications/2019-07/independent-review-on-decarbonising-welsh-homes-report.pdf> p10.

^v Welsh Government – Electrical Fires Review <https://gov.wales/electrical-fires-homes-review>

^{vi} <https://gov.wales/written-statement-optimised-retrofit-programme-2020-21>

^{vii} BSI Net Zero - <https://www.bsigroup.com/en-GB/topics/sustainable-resilience/net-zero/>

^{viii} <https://www.bsigroup.com/en-GB/about-bsi/uk-national-standards-body/about-standards/Innovation/energy-smart-appliances-programme/>

^{ix} <https://www.bsigroup.com/en-GB/industries-and-sectors/energy-and-utilities/faraday-battery-challenge/>

^x <https://knowledge.bsigroup.com/products/retrofitting-dwellings-for-improved-energy-efficiency-specification-and-guidance-3/standard>