

Welsh Zero Carbon Housing Performance Hub

Annex A - Scoping Survey

August 2021

Scoping Survey Results

This document summarises the survey results used to inform the “Hub” Scoping Study. The survey ran for three weeks in February and March 2021, with core questions on four themes:

- Hub remit
- Hub activities
- Hub technical
- Hub practicalities

73 responses were received from a range of organisations. A small number of organisations provided responses from more than one individual.

Where respondents provided comments, these have been paraphrased and anonymised.

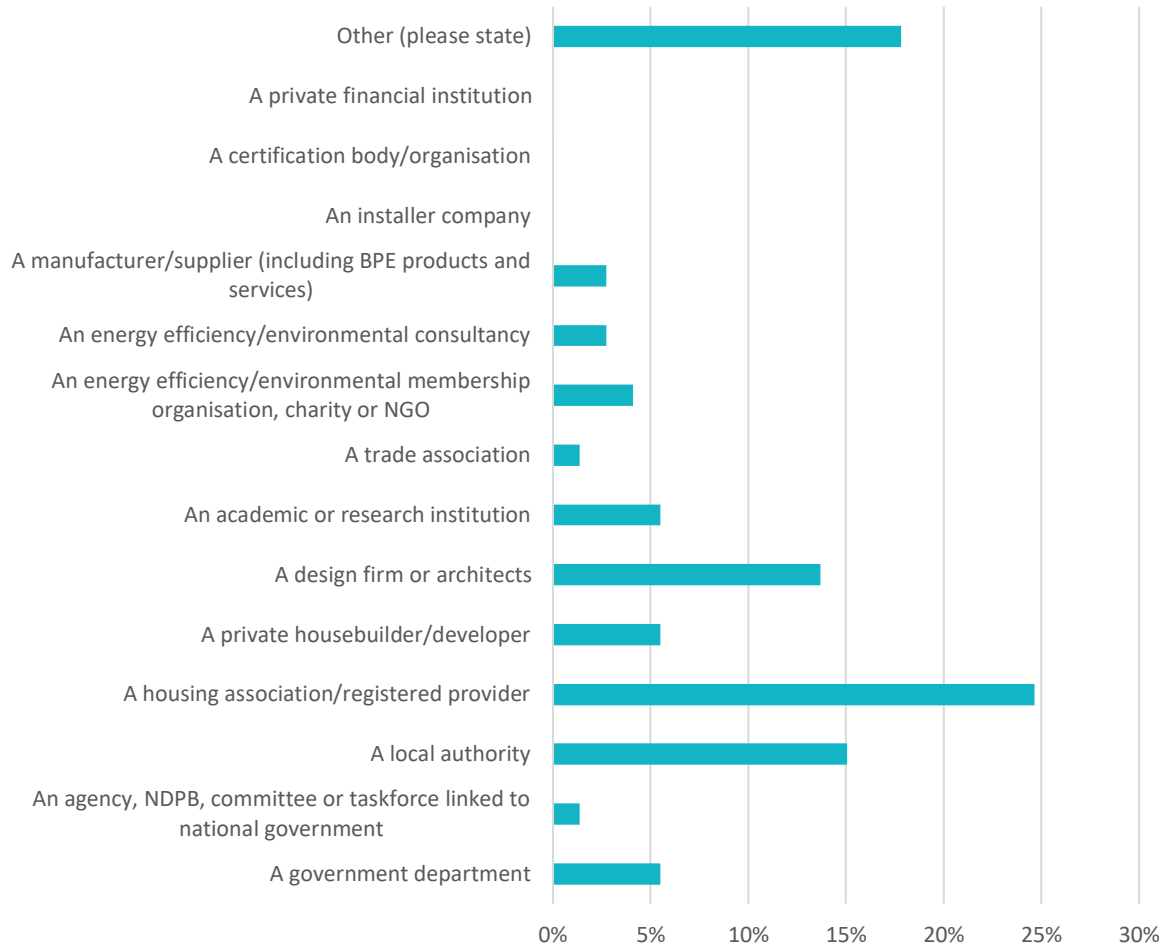
NB: The survey used the term “low energy/zero carbon” to refer to the spectrum of different energy and carbon standards and frameworks. For example, the term was intended to cover “net zero carbon”, “net zero whole life carbon”, and “ultra-low energy”.

Also note that the question numbers in this report do not follow sequentially for technical reasons.

Survey responses

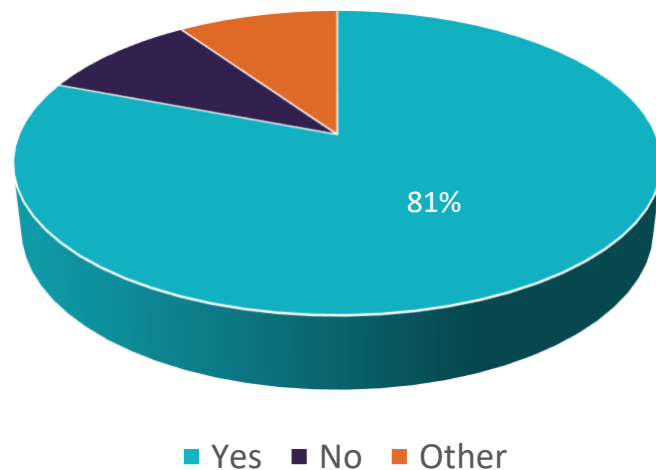
Question 2 – What type of organisation are you responding on behalf of?

73 responses



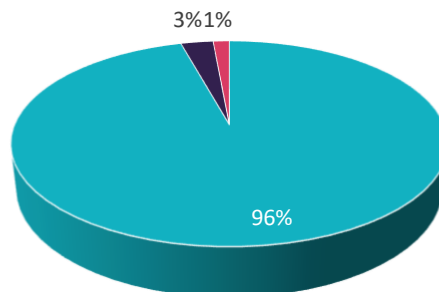
Question 3 - Does your organisation operate, build or sell in Wales?

73 responses



Question 4 - In terms of the geographical scope of the future Hub’s activities, which of the following would you prefer?

72 responses



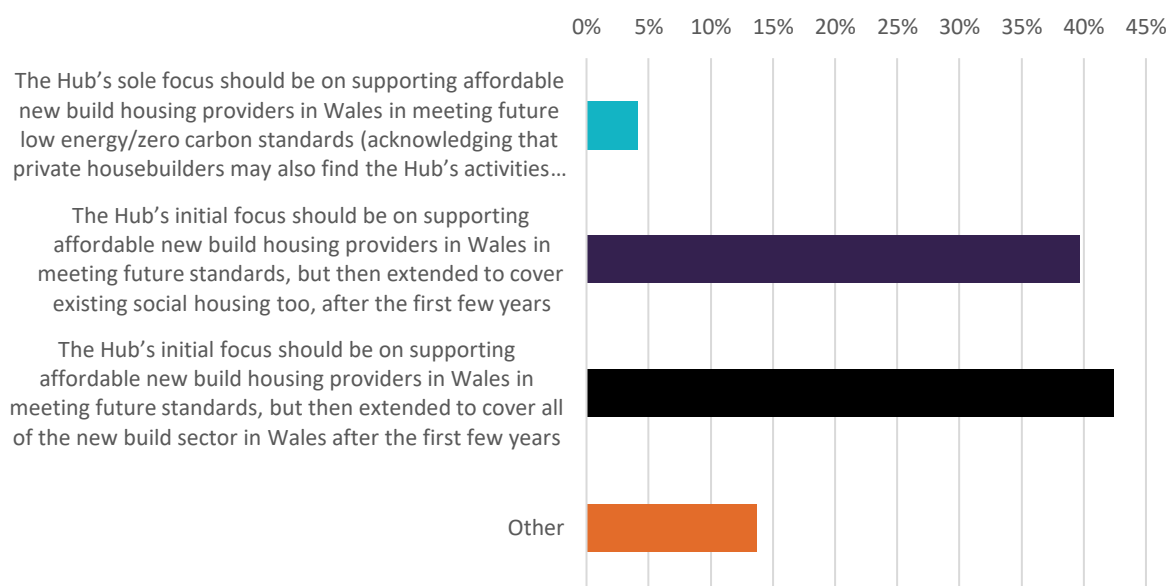
- A Welsh-based Hub, which prioritises the support of Welsh organisations, but also shares knowledge and influences across the UK and internationally
- A “Welsh Hub” intended for Welsh organisations only
- Other

Additional comments

- The Hub should support Welsh industry, employ local people, with benefits going back into the Welsh economy.
- Does the Innovative Housing Programme already perform the role of the potential Hub?

Question 5 - After reading the introduction to this survey on the GHA’s website, which proposal for the Hub’s remit do you most agree with?

73 responses



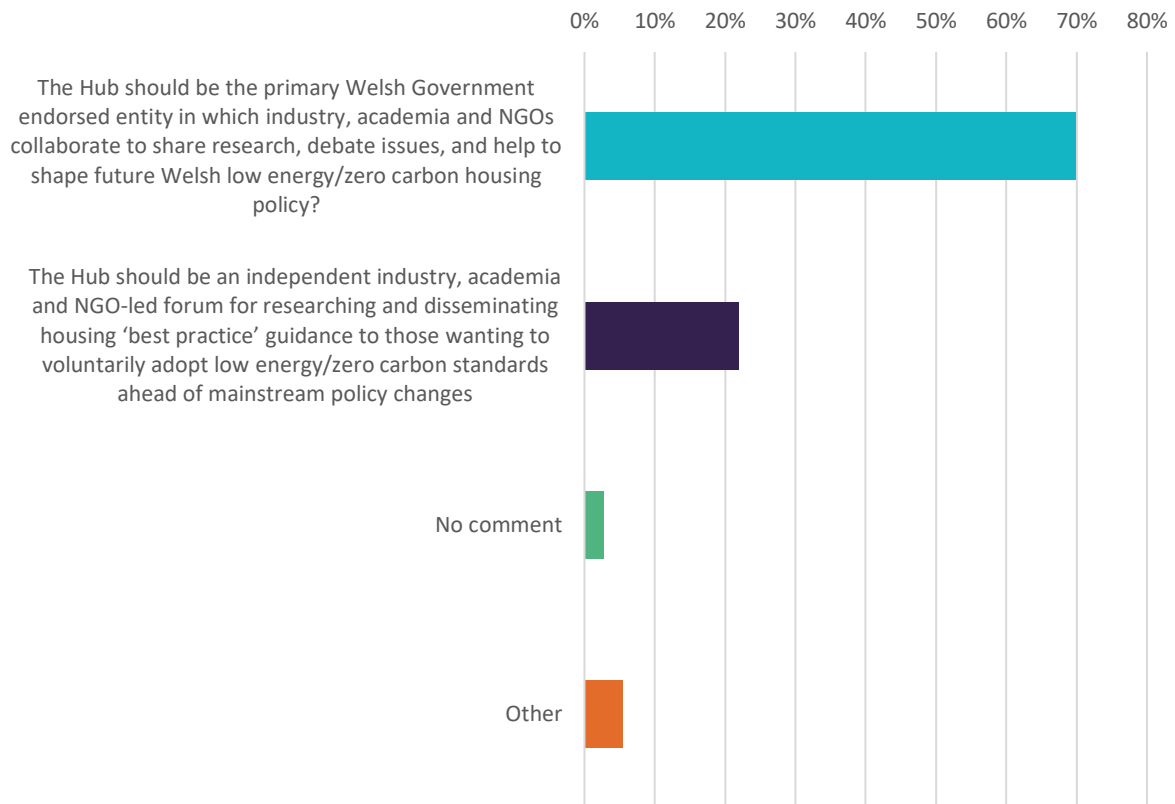
See introduction at [Scoping Survey - Welsh Zero Carbon Housing Performance Hub - Good Homes Alliance](#)

Additional comments

- New housing represents a small proportion of the total affordable homes in Wales. Existing homes should also be within the Hub's initial focus. Retrofit is equally important if not more so than new build. The priority and most challenging area of decarbonisation is the existing Welsh housing stock. The focus should be on this in the initial stages as well as new build. Net zero needs accelerated uptake in the new build sector whilst simultaneously focusing on the existing stock. Consideration of the viability of covering all new build and all existing homes in Wales should be an early Hub workstream.
- Options should be explored for influencing new private sector housing at the same time as social housing. Streamlining standards would smooth the acquisition of affordable housing through S106 contributions.
- The “new build” and 'existing' challenges are distinct. There is overlap, but the Hub's work might be more effective if focused on one or the other.
- Standards have been too low for too long. Only those interested in supplying quality homes should be included, there are plenty of them.

Question 6 - Which of the following possible structures for the Hub do you think would be most effective in preparing Wales to build low energy/zero carbon homes at scale?

73 responses



Additional comments

- Either type of Hub is possible, but Welsh Government backing is important in terms of how legislation is formulated and influenced.
- Support a Welsh Government-endorsed solution. Need to ensure future mandatory standards have some flexibility, enabling organisations to approach in their own way.
- Sharing information is good, but it is also important to protect commercial interests. An independent Hub would aid appropriate information sharing.
- Legislation and funding is the only way to get “zero carbon” done quickly enough.

General comments on Hub remit

- The Hub must ensure that all new houses are net zero carbon. The aim is to stop new build increasing the burden on the environment. Under current government targets, homes would need to be retrofitted before 2040. Without government legislation and enforcement for zero carbon houses progress will be too slow.

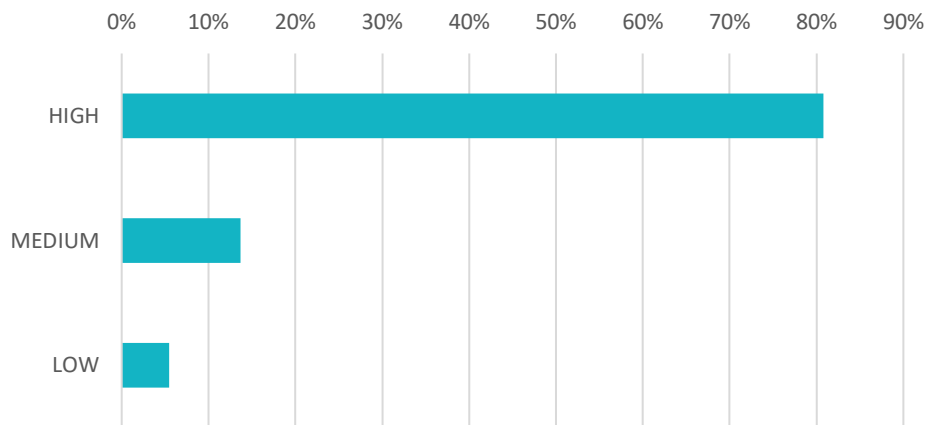
- Retrofit of existing homes is very different compared to new build. Themes and solutions that work for new build do not necessarily work well for existing buildings.
- There is a risk that the Hub reinvents the wheel. Significant investment has already been made by the Welsh Government into the Innovative Housing Programme and Optimised Retrofit Programme. These are under evaluation.
- The Hub should not be construction or housing industry-led as that risks “tweaks” to policy rather than fundamental reinvention. The Hub should feed into future legal requirements, especially planning permission when fundamental design decisions are made.
- The Hub should work with other UK agencies.
- The Hub should review overseas research and development on the Climate Emergency and future-proofing.
- The Hub should be the primary Welsh Government-endorsed entity but should also seek cross political party agreements.
- Need a focus on existing stock and the challenges faced in that sector.
- The Hub should have links with NCC and WAG climate change, sustainability and air quality partners.

Questions 8-10 - Please categorise how important it will be for the Hub to carry out the following activities in terms of High (month 0–6), Medium (month 6–18) and Low (month 12– 24) importance

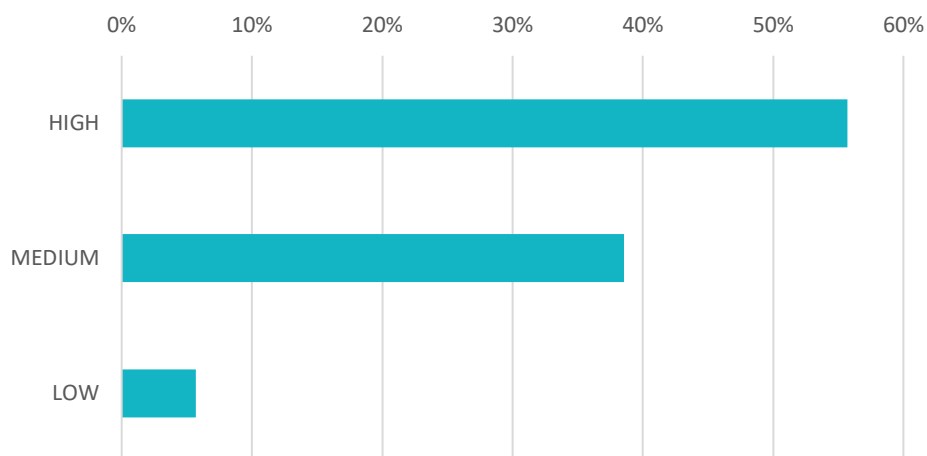
73 responses (the number of responses to individual sub-questions varied slightly)

Strategic clarity

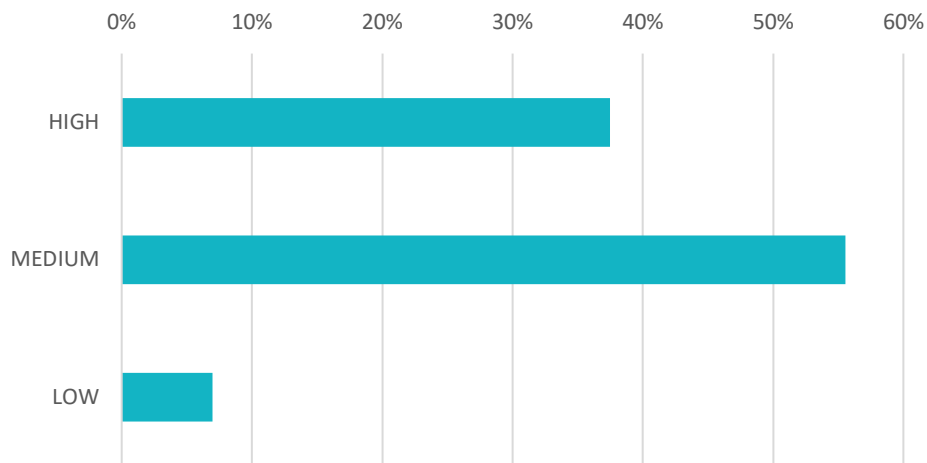
Working with housing providers to agree whether to adopt a single definition of “zero carbon” and what it should be (drawing on existing work where possible – see Question 14)



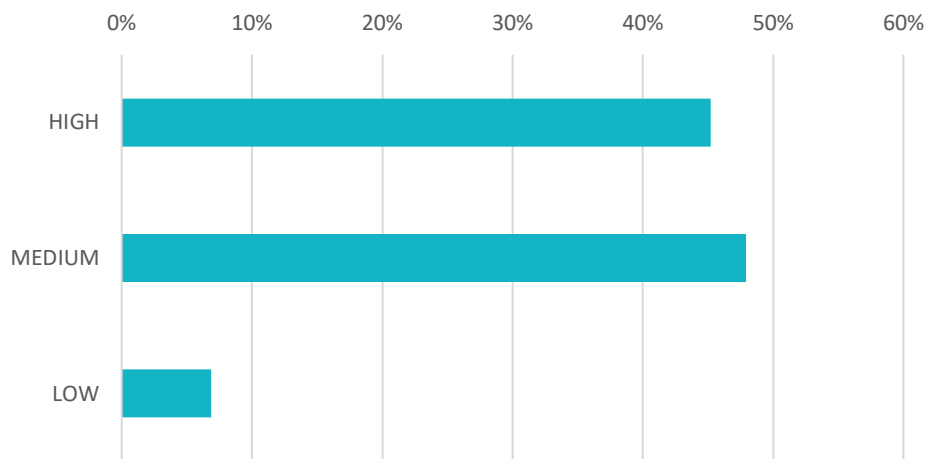
Tracking and summarising policy and regulation on low energy/zero carbon homes



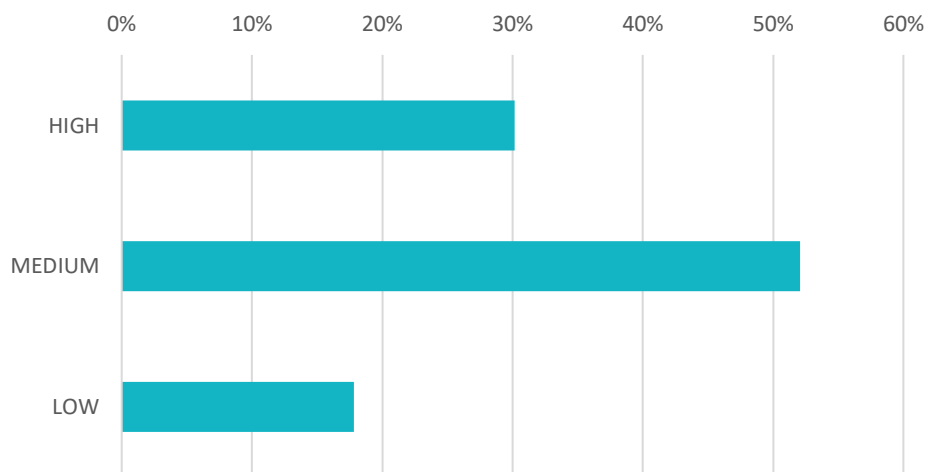
Tracking and sharing relevant information on recent and new sector-led zero carbon frameworks and standards



Identifying skills and knowledge gaps and making recommendations to tackle these

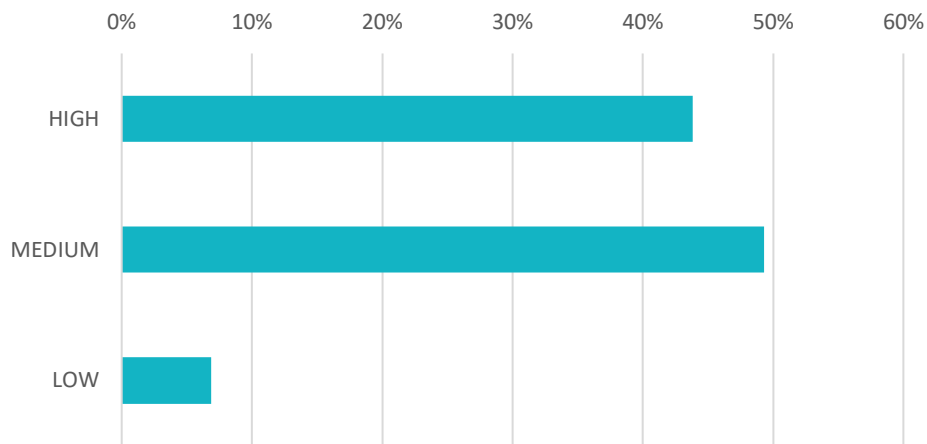


Working with housing providers to agree possible timelines for the mass roll-out of low energy/zero carbon new build homes (using agreed definitions, and drawing on recommendations of advisory bodies such as the UK Committee on Climate Change)

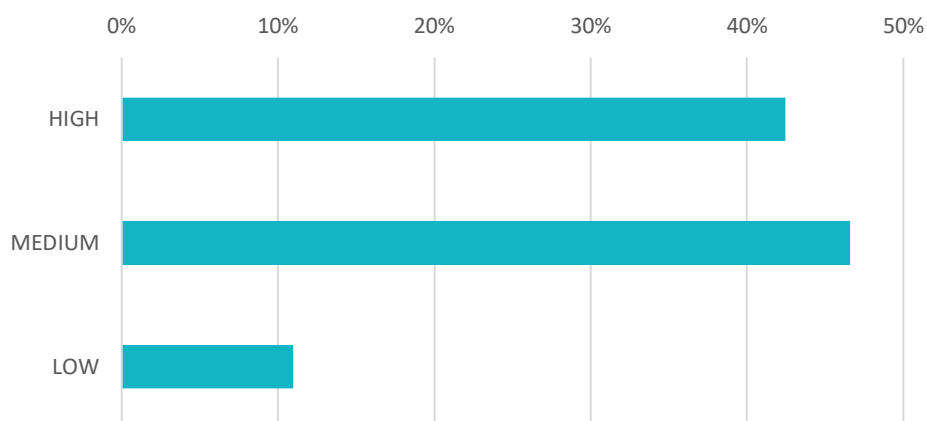


Knowledge sharing

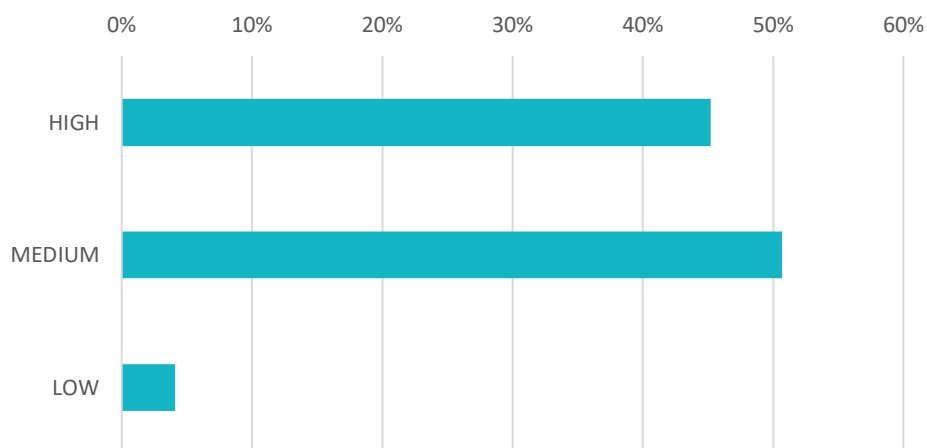
Showcasing and summarising research, demonstrators and case studies related to the design and delivery of low energy/zero carbon homes



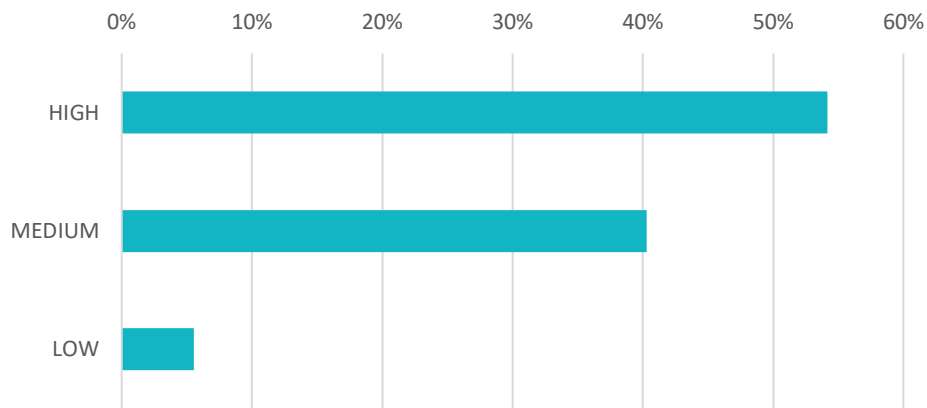
Tracking and showcasing studies where the energy performance of low energy/zero carbon homes has been measured and verified



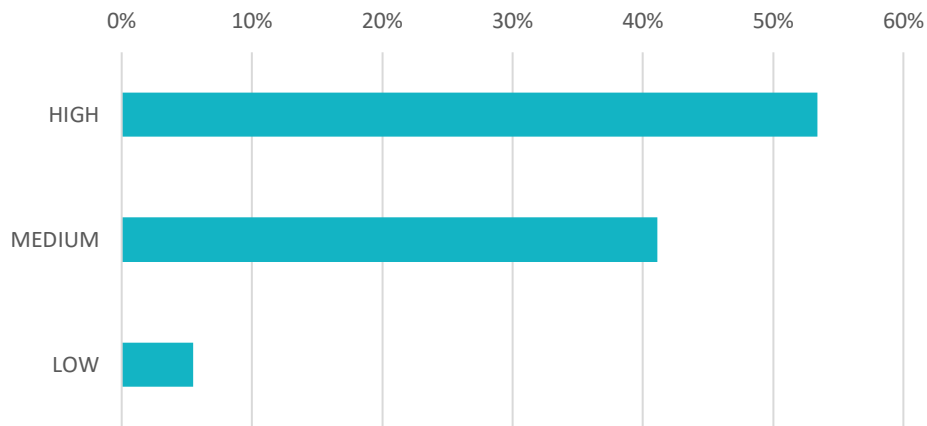
Tracking and sharing relevant industry reports and best practice guidance on essential elements of delivering low energy/zero carbon homes e.g. minimising embodied carbon and on building performance evaluation



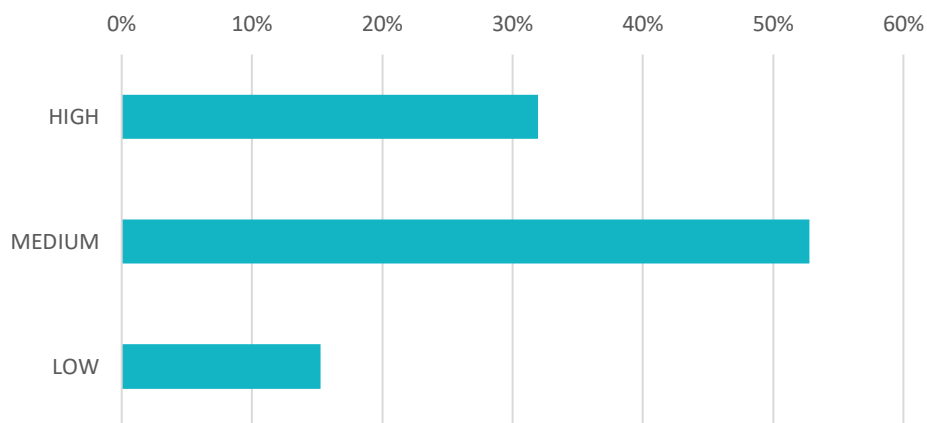
Identifying and sharing research on the cost of constructing low energy/zero carbon homes, plus information on funding sources and bodies



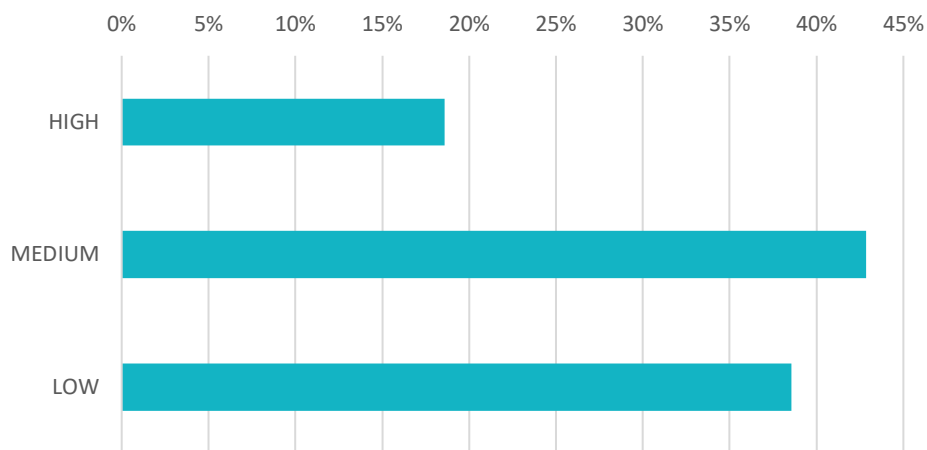
Tracking and sharing guidance on potential technical risks such as overheating and how zero carbon ambitions must dovetail with health and well-being goals



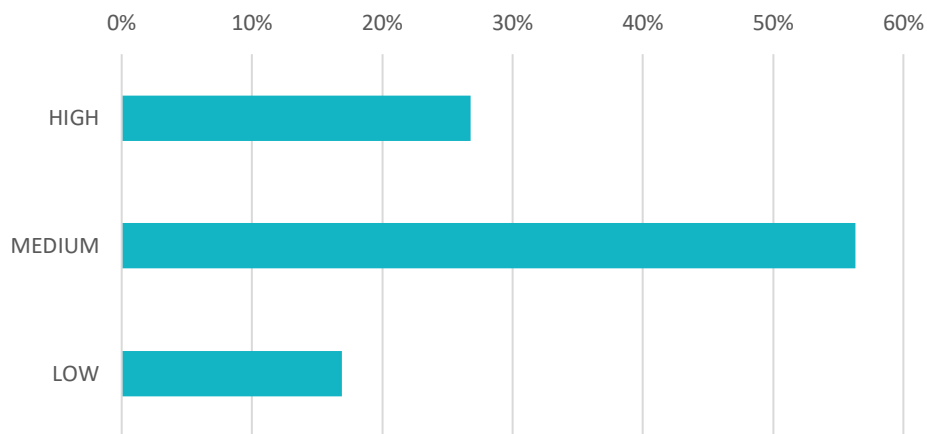
Providing a facility on the website for Hub users to ask specific questions about low energy/zero carbon delivery, with answers developed by experts and shared on the website as Q&A



Running industry surveys to gain insights into delivery challenges and gauge progress

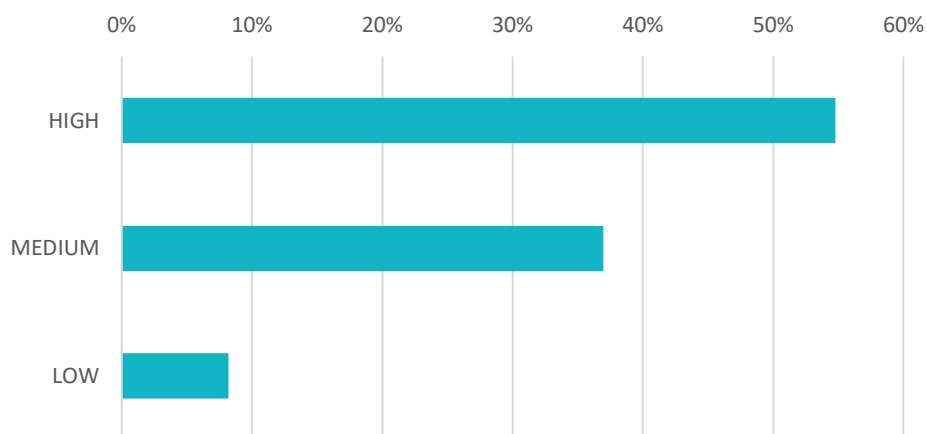


Running webinars, workshops, events and seminars on emerging themes, policies, opportunities and challenges (virtual and physical, once it safe to do so)

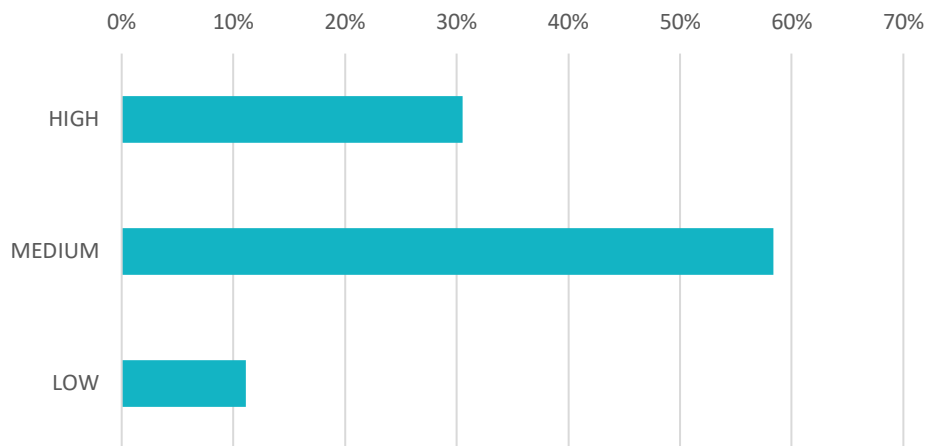


Capacity building

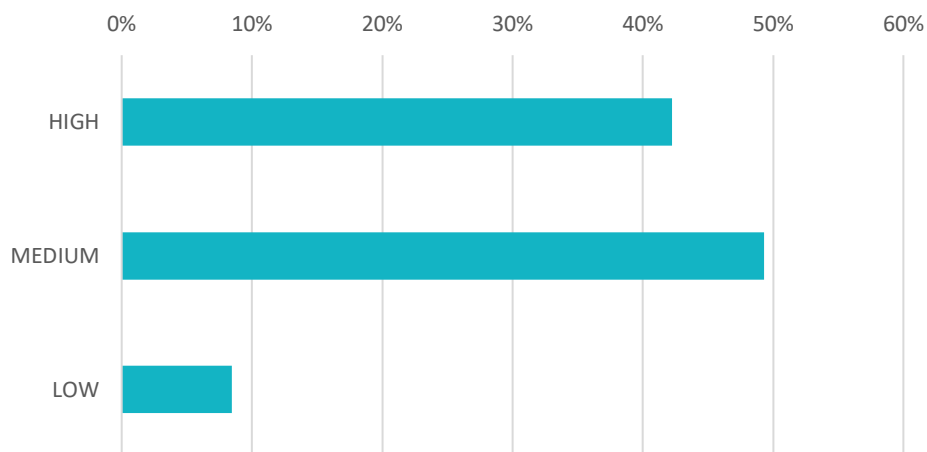
Working with housing providers to identify and decide how to overcome remaining technical, practical and funding challenges related to each potential “element” of low carbon/zero carbon delivery (see Question 15)



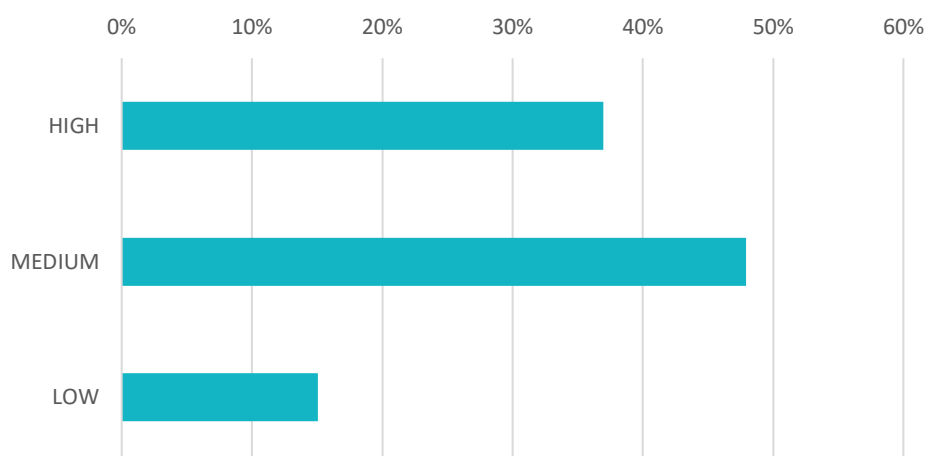
Identifying and disseminating information on potential opportunities for the Welsh economy related to delivering low energy/zero carbon homes e.g. for the timber industry



Tracking and showcasing studies on the use of Modern Methods of Construction (MMC) and Off-site Manufacturing (OSM) and their contribution to delivering low energy/zero carbon homes

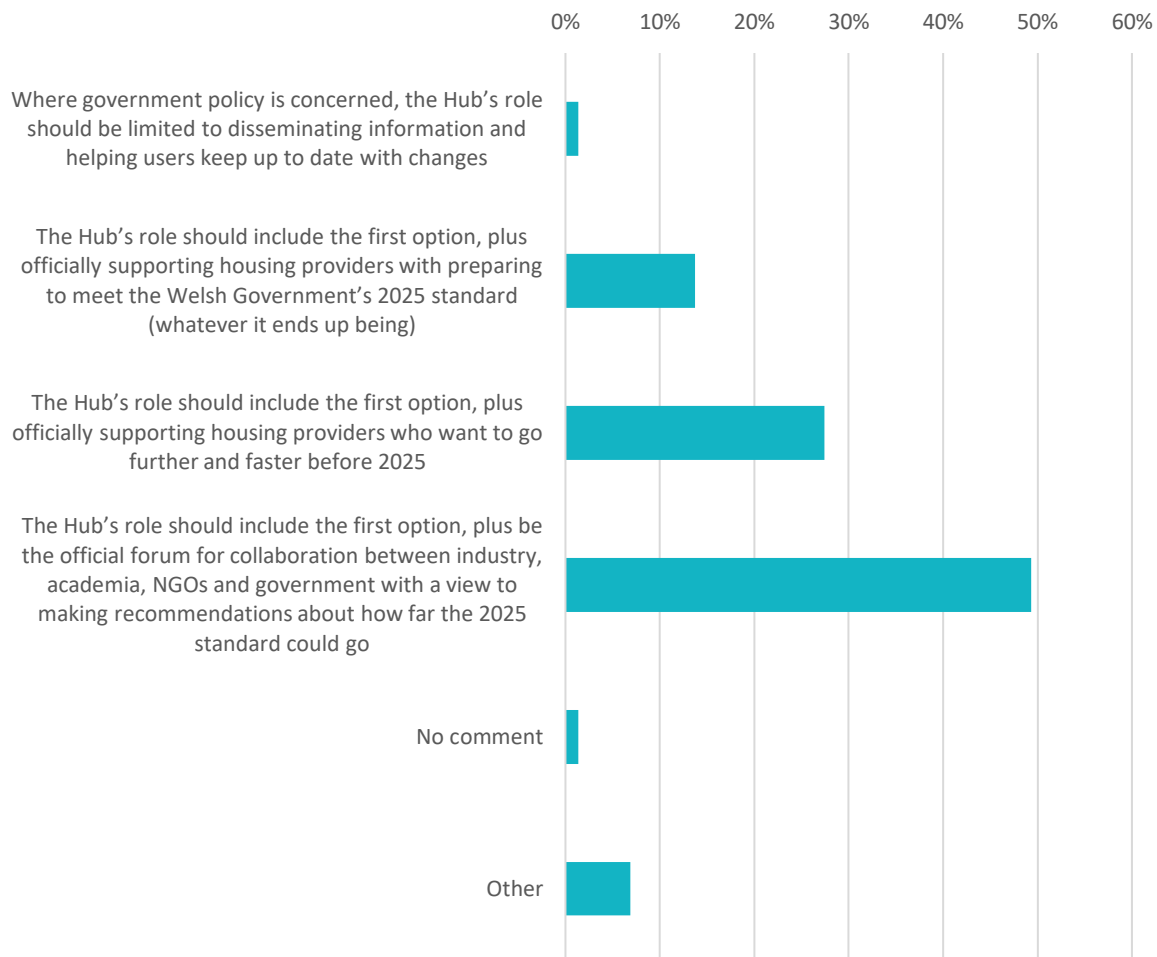


Tracking and sharing links to established lists of trusted Welsh suppliers and tradespeople



Question 11 - After reading the introduction to this survey on the GHA's website, how should the Hub's activities interact with planned government policy on new build energy and carbon standards?

73 responses



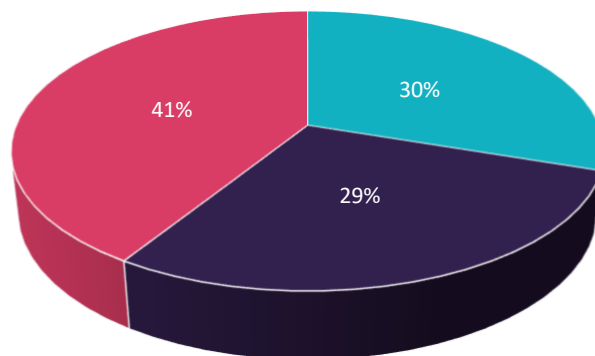
Additional comments

- For any research to be valuable, longitudinal research will be needed, with a control study, to assist decision making processes and draw meaningful conclusions.
- Going beyond Welsh Government 2025 standards is going to be challenging from a scheme viability perspective. For all future schemes to reach higher standards (which is supported) means significantly increased costs.
- We are past the point where we can afford to work only with the people that voluntarily want to do things better. Government must make it compulsory for everyone to achieve a high level of building standards. The role of the Hub should be to help organisations achieve those higher standards.

- There are many legitimate technology bases that can produce true zero carbon homes. Any Hub should embrace all, including circular economy design principles.
- Need two timeframes: short-term “no regrets” requirements by 2025, then medium-term capacity and knowledge building to grasp opportunities and disrupters.

Question 12 - In terms of information on the Hub’s website which option would you prefer?

73 responses



- The content primarily relates to Wales (i.e. Welsh-specific case studies, research projects, guidance etc.)
- The content is drawn from across the UK
- The content is drawn from across Europe

Additional comments

- The Hub should have a strong Welsh focus, but without undermining the power of working together and learning from the UK, Europe and other continents, being realistic that some of their examples might fall a bit too far out of the UK context. Support the Welsh focus, whilst being inclusive and acknowledge the value of collaborating and learning from other places/organisations/people.
- The content should focus on Wales, but still reference and learn from UK-based case-studies and research if applicable to Welsh goals.
- Content needs to be drawn from other European countries but there should be a specific focus on development in Wales.

General comments on Hub activities

- Driving down costs has to be a priority for roll-out. Sharing UK best practice may assist. The primary focus should be Wales with reference across the UK.
- The search for best practice shouldn't be limited to the UK.

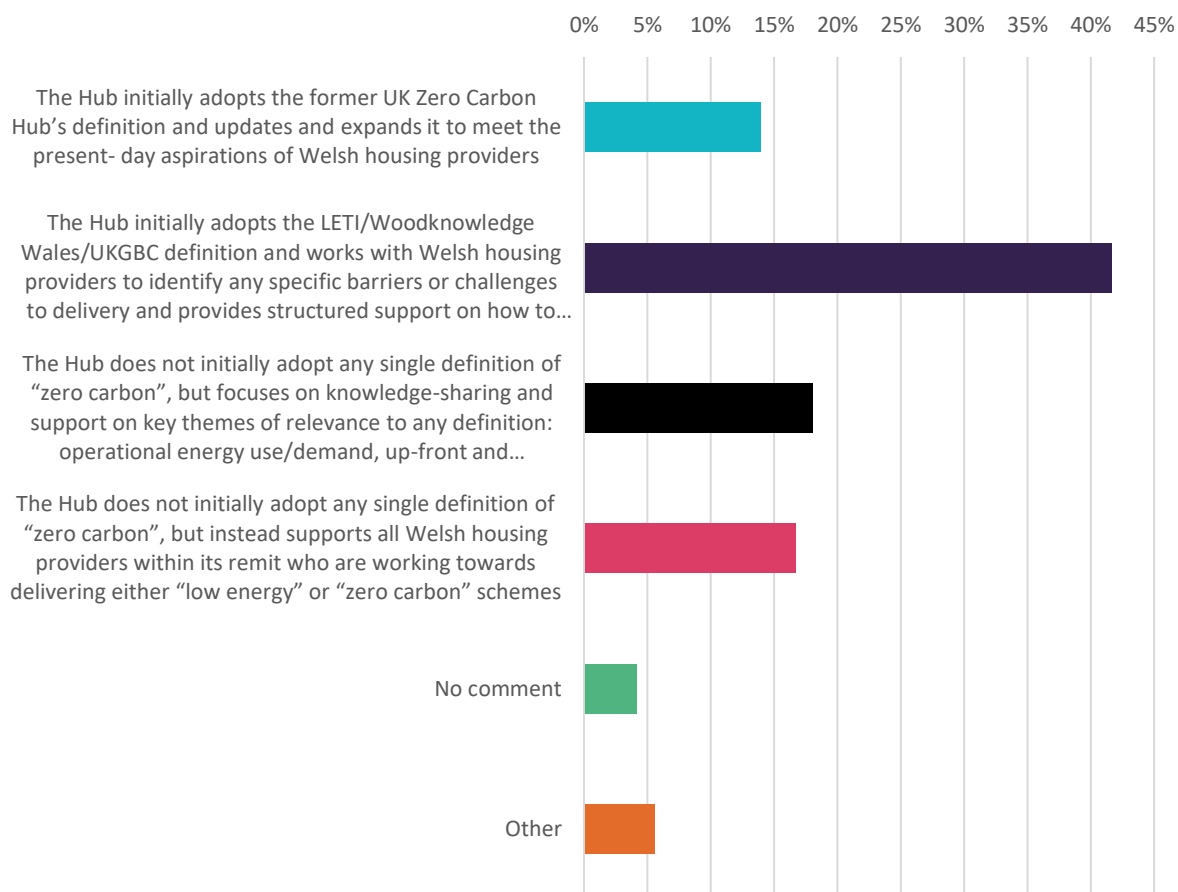
- Web content should be derived from Welsh activity and case studies and shared with other nations. The Welsh Government has established a significant lead on other UK countries relating to decarbonisation. Opportunity to export knowledge.
- Address silos. Zero carbon homes must not use the average electricity grid carbon intensity, otherwise buildings will push/upstream more emissions to the power sector than are assumed to have been saved at the buildings level. If homes are electric only, they will be tied to “peak and trough prices”, with higher prices for periods without wind, which is important in winter with little solar generation at times when space heating demand is also highest.
- The Hub has an opportunity to address the performance gap between design and as-built, offering a public-facing information point where householders can “name and shame” those who deliver below-specification products.
- There needs to be a lot of acceleration, fast track the timeline.

Question 14 - In terms of whether and how the Hub addresses the question of defining “zero carbon”, which of the following options would you prefer to see happen - with a view to the Welsh Government adopting the definition for the sector?

72 responses

There have been a number of definitions of “zero carbon” for new build homes developed over recent years, including:

- The definition produced by the former UK Zero Carbon Hub in preparation for planned legislation in 2016, which included a fabric standard, a target emissions rate, and the ability to off-set remaining carbon known as “allowable solutions”. The definition focuses on regulated energy. See [Zero Carbon Policy | Zero Carbon Hub](#).
- Definitions developed by the London Energy Transformation Initiative (LETI), Woodknowledge Wales, Home-Grown Homes and the UK Green Building Council (UKGBC) which are very similar to each other. They include stretching operational energy use standards and other elements not included in the UK Zero Carbon Hub’s definition, such as on embodied carbon, unregulated energy, and performance measurement and verification requirements. See:
 - [Net Zero 1-Pager | LETI](#)
 - [Net-Zero targets for Wales - Woodknowledge Wales](#)
 - [Home-Grown Homes Project / Prosiect Cartrefi o Bren Lleol - Woodknowledge Wales](#)
 - [Net Zero Carbon Buildings: A Framework Definition - UKGBC - UK Green Building Council](#)

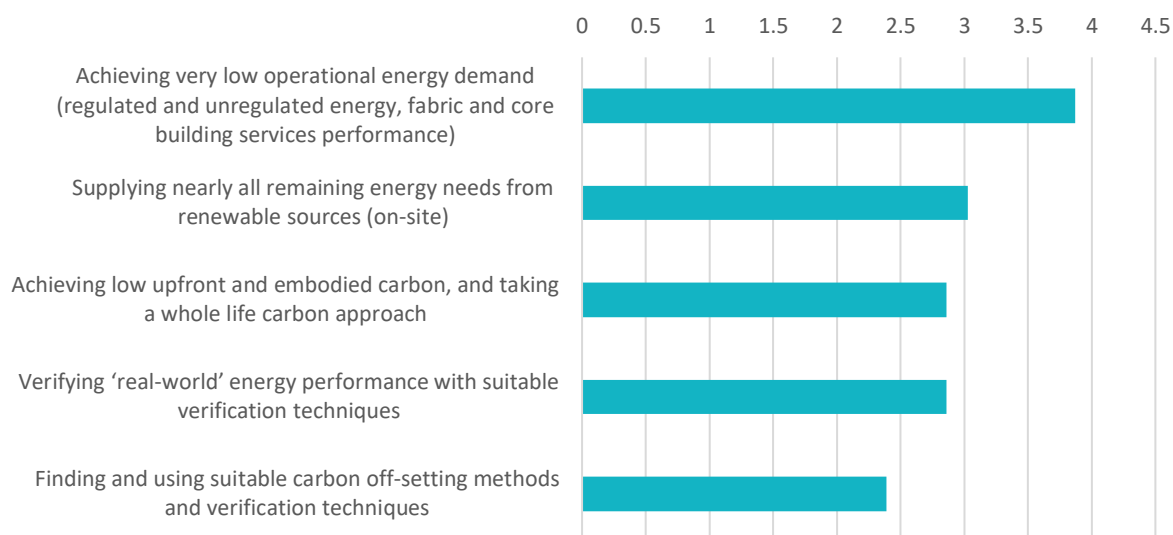


Additional comments

- Wales has invested significantly in different approaches to others in the UK. There needs to be nation-based approach that is aligned to the devolved powers of implementation and net zero timelines. Consider the deeper concept of "what is net zero is for the Welsh nation"?
- Super structure should have a minimum embodied carbon baseline.
- The LETI standard is comprehensive, well-illustrated, and Wales should adopt this.
- The Hub should build on definitions by the UK Zero Carbon Hub, LETI/Woodknowledge Wales/UKGBC, and other good practice definitions to set a definition to meet the present-day aspirations of Welsh housing providers.

Question 15 - The five themes mentioned in Question 14 are considered in recent definitions to be essential elements of “full” zero carbon. Which of these elements do you consider to be the least, through to most, challenging in terms of technical delivery on site, and should therefore be prioritised for support by the Hub? (1 is the least challenging, 5 is the most).

71 responses



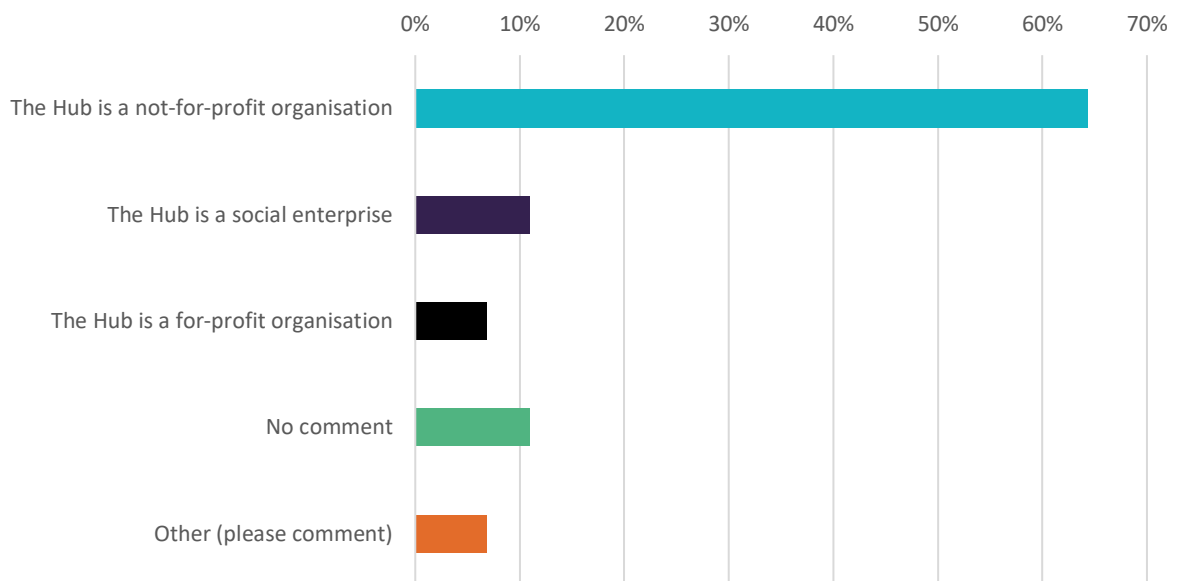
General comments on Hub technical aspects

- A barrier for delivering the Zero Carbon Agenda for homes in Wales is outdated Planning Guidance Notes and design documents.
- Verifying real-world energy performance is not difficult but is challenging due to the need for sufficient data monitoring and the need to use the data to improve performance. A whole life cost approach is needed to enable this.
- Finding all energy on-site from renewables is the most challenging and is not a useful measure - we should utilise the increasing grid decarbonisation rather than try to create fully autonomous houses (although some local generation is desirable).
- Lowest priority is currently given to embodied carbon.
- Economic balancing is needed between asset investment at the building level and asset investment in electricity generation, hydrogen production and at the networks level.
- The survey section does not explain current Welsh policy direction and initiatives. [NB: there is a high-level summary in the survey introduction on the GHA’s website]

- Need to factor in occupancy and the desire to reduce carbon emissions under the 6th carbon budget.
- Carbon-efficient design and construction is pointless unless it is independently verified on site, as-built. The lack of independent verification is the cause of the current UK-wide “scandal” of the energy performance gap.
- Copy working solutions.
- The most important technical challenge is having to be affordable and how to combine the elements of the zero carbon themes.
- Include resident behaviour and resident education.
- Vital to settle on a zero carbon definition. The LETI/WKW/UKGBC approach should be the guiding definition. However, it is important to focus on kick-starting the Hub without being hamstrung by a single definition at the outset.
- Technical difficulties are created by a lack of available locally sourced products and supply chains in Wales.

Question 17 - Which of the following business models do you think would make the Hub most successful in fulfilling its objective to drive up the delivery of low energy/zero carbon new homes in Wales?

73 responses

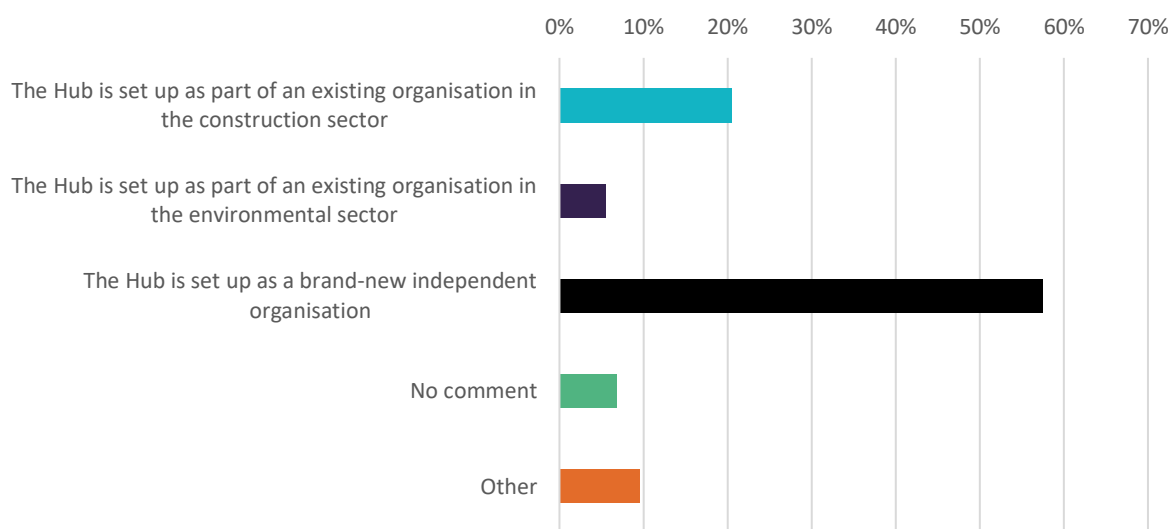


Additional comments

- The Hub should be either a not-for-profit organisation or a social enterprise so it can be an "independent advisor" to all parties, without biased/financial interests.
- Get the right people in the job. They need to be driven and care. It has to be more than a job. Not-for-profit is preferable.
- The Hub needs to be a government organisation, or very closely tied to government so that there is clear communication and weight of policy when/if needed.

Question 18 - Which of the following approaches to set-up do you think would make the Hub most influential within the new build sector?

73 responses



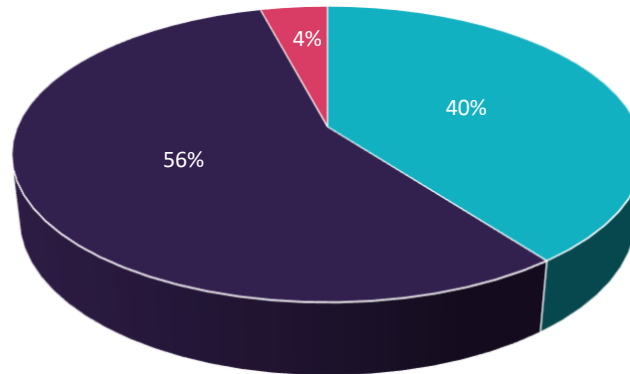
Additional comments

- The Hub should be an “amalgamation” of construction, housing, government, environment etc.
- Independence would be beneficial. Danger that there are too many organisations, so it could potentially be a new part of an existing organisation.
- Consider the Active Building Centre in Swansea.
- Rounded Developments Enterprises would be willing to host if needed in the short term.
- The Hub should be set up as innovative whole-system development organisation for buildings across heat, power and mobility including construction implications for the digital, health and skills sectors.

- Important the Hub to be independent of vested interests but will also need to have access to expertise in the environmental, construction and housing sectors.

Question 19 - Should the Hub have a physical base (in Wales)?

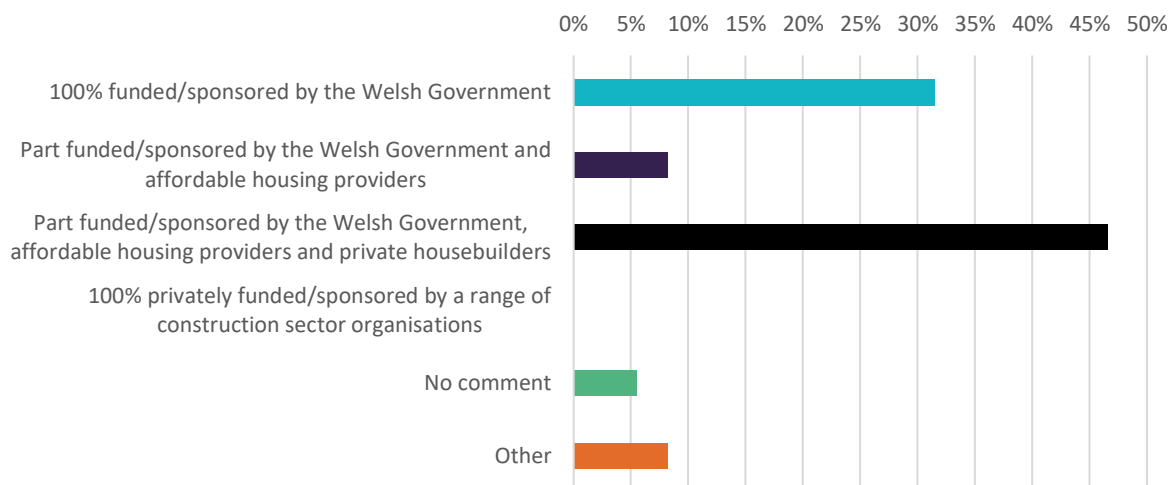
73 responses



- Yes – a physical base (in Wales) is ideal
- No – a virtual presence is sufficient, plus the hire of venues for events
- No comment

Question 20 - Which of the following financial models do you think will help the Hub be accepted as a source for unbiased support and advice?

73 responses



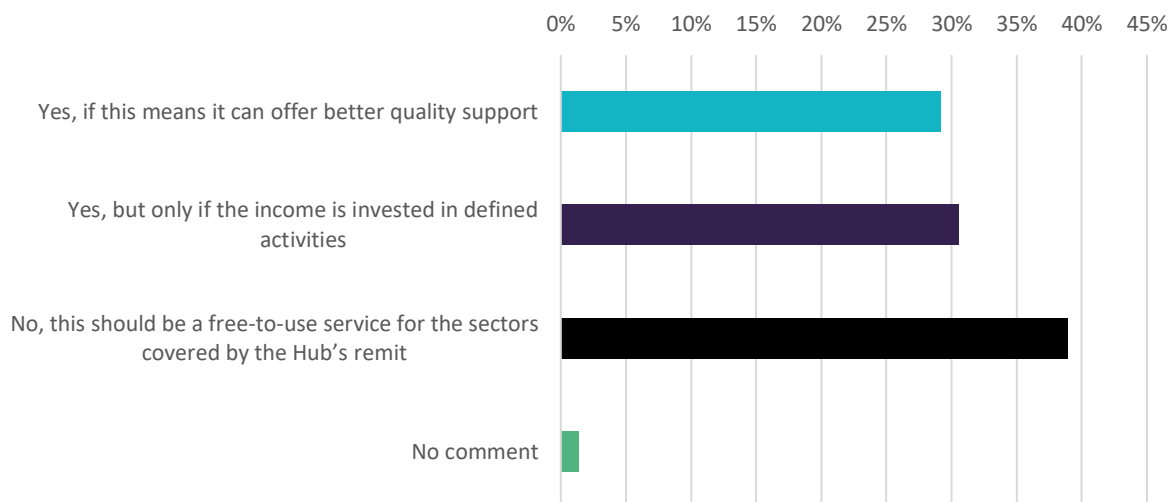
Additional comments

- Mixed funding is preferred with, no one dominate funder, though would expect Welsh Government to fund at around 40%.

- If RSLs contribute to the funding they will seek a benefit and will hopefully buy into the programme.
- Funding should be pump-primed to ensure engagement and adoption.
- The Hub should be part-funded by Welsh Government and private investment.
- The Hub should be funded by Wales and the UK Government to ensure funding allows political and policy coupling. No point in having different national centres when the problem is uniform across the UK. Preference would be for the Hub to be part funded/sponsored by the Welsh Government, affordable housing providers and private housebuilders to ensure the work of the Hub is relevant to the stakeholders. Governance processes need to be put in place to ensure freedom to operate and minimise red tape.
- It is fair for the Hub to be funded by the Welsh Government and the organisations who are benefiting from it. Be aware of funding organisations needing to pass on costs to customers.

Question 21 - Alternatively or in addition to the options in Question 20, do you think the Hub should be able to charge a fee for some of the services it provides?

72 responses



General comments on Hub set-up

- The Hub should be free to start with to remove barriers to start with. Charge later.
- Information should be free to all, including access to decision support tools. Bespoke services and advice could be chargeable. Allowing the Hub to make a profit would steer the advice and guidance to be driven by whole energy system economics (building fabric, building-level technology, electricity/gas grids and energy supplies). Without this little

progress towards real net zero carbon will be made, to benefit the Well-being of Future Generations.

- The funding model should enable on-going contributions from industry on a “maintenance and development only” model where users of facilities cover ongoing costs on a value based evaluation process.
- Administering subscriptions would be more challenging and time consuming and therefore a distraction from core delivery.
- The Hub should be free for public use but companies using it should pay.
- The challenge is to deliver in a short time frame. The Hub needs to commission 'experts' to define the targets and present the practical, deliverable solutions to help those who are building homes to deliver, while not countering with cost arguments.