

Providing environmental leadership in social housing to advance Climate Action goals

Final report on a Research Support Programme (RSP) project funded by the Housing Agency.



An Ghníomhaireacht
Tithíochta
The Housing Agency

SustainabilityWorks.

Prepared by SustainabilityWorks
on behalf of the Housing Alliance

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The Housing Agency's purpose is to provide expertise and solutions to help deliver sustainable communities throughout Ireland. A strategic objective is to support stakeholders with evidence informed insights and data to develop a sustainable Irish housing system. In this vein, the Research Support Programme funds research projects which respond to key topical issues in housing and have the potential to impact on housing policy and practice.

The views expressed in this report are those of the author(s) and do not necessarily represent those of The Housing Agency.

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September 2023

Foreword from the Housing Alliance members

All sectors of the Irish economy will have to decarbonise to meet the national target of net zero emissions by 2050. This includes the residential sector, which accounts for 10.2% of national emissions. Residential energy efficiency upgrades (also referred to as “retrofits”) have been shown to deliver more comfortable homes and health benefits for the occupants as well as reduced energy bills. They also make a material contribution to decarbonisation at a national and individual level.

In addition to our central role in meeting Ireland’s social and affordable housing needs, the Approved Housing Bodies (AHB) sector also has a significant role to play in the delivery of the national residential sector decarbonisation target. Our housing stock currently exceeds 43,000 homes and this number is set to increase considerably over the coming years.

Making our housing stock more energy efficient and moving away from fossil fuels is highly aligned with our social purpose and the ethos as a sector. We have always provided support beyond housing to residents. Many of our resident’s experience fuel poverty and AHBs are

already implementing measures to make homes more energy efficient with a view to reducing energy bills. That said, the sector can do more.

The Housing Alliance is a collaboration of six of Ireland’s largest AHBs: Circle Voluntary Housing, Clúid Housing, Co operative Housing Ireland, Oaklee Housing, Respond and Tuath Housing. It was formed to promote the delivery of social and affordable housing by larger AHBs, to address barriers and challenges to delivery, and to promote strong professional approaches to housing management.

In 2022, the Housing Alliance members identified the imperative to develop a clear vision for how best to deliver a climate resilient and decarbonised sector, aligned with national targets. Supported by the Housing Agency, we commissioned this research in order to identify the relevant issues, challenges and opportunities associated with that objective, and ultimately to make recommendations on next steps. This report sets out concrete, actionable recommendations to enable the Housing Alliance members to work together to tackle the challenges of decarbonisation and to provide effective climate leadership for our sector.

The findings of this report provide support for the proposition that we should be seen as attractive strategic partners for Government, contractors and finance partners alike. By aggregating projects, AHBs can create real economies of scale and support the scaling up of the supply chain. There is also a natural role for AHBs in trialling innovative approaches for decarbonising homes, both old and new, as well as in the development of innovative financial solutions. We strongly encourage all key stakeholders to see us in that light. We are eager to collaborate.

However, nothing can happen without finance. Where AHBs can also illustrate their green credentials, the combination of green and social impact can be very attractive to investors and lenders alike. However the existing AHB funding landscape gives rise to significant challenges in accessing public or private debt to fund retrofits, as outlined in this report.

Consideration as to where finance will come from is vital. There is a divergence in views between government stakeholders and the AHBs on the finance challenge and this needs to be resolved to move forward. Again, we are eager to engage on this topic to ensure that a common understanding is developed.

In conclusion, the AHB sector has the potential to play a significant role in helping the country achieve its 2030 climate targets. The Housing Alliance hopes that by sharing our vision and the insights and recommendations in this report, the sector and its key stakeholders will engage and collaborate to realise this potential. The Housing Alliance is ready to lead by example and committed to implementing the recommendations of this report.



John Hannigan

Chair of the Housing Alliance

Executive Summary

Background

All sectors of the Irish economy will have to decarbonise to meet national climate targets, including the Approved Housing Body (AHB) sector. The Housing Alliance, a collaboration of six of Ireland's largest AHBs, commissioned this report, funded by the Housing Agency, to support their objective of developing a clear vision for how best to deliver a climate-resilient and decarbonised sector, aligned with national targets.

Key insights that were identified during research include:

- We are now in the era of net zero carbon emissions, and the built environment has a significant role to play to help Ireland reach its net zero carbon target.
- The discussion on carbon emissions in the built environment is evolving from BERs and operational emissions to whole life and embodied carbon.
- While it is unclear how national climate action targets relating to the residential sector will impact AHBs, as landlords with large and growing portfolios, they could collectively make a significant contribution.
- The social housing sector is attractive to investors as it delivers positive social impact. Where social housing bodies can also illustrate their green credentials, the combination of green and social impact can be very attractive.
- International social housing peers are accessing sustainable finance and considering their ESG strategy and metrics. International peers are also setting ambitious climate action targets.
- Standardised ESG reporting standards for social housing have been launched in the UK, and mandatory corporate ESG reporting is coming in the EU for larger AHBs
- Climate-related financial risk should be on the board agenda of AHBs.
- Access to finance for retrofitting older homes is a challenge for the sector due to structural issues around how the AHB sector is funded.
- Government-funded schemes that support social housing innovation for climate action are driving results in other countries.
- Across all stakeholder groups, there was consensus that the top three climate-related issues for the sector are Energy Management, Fuel Poverty and Retrofit Finance. There was clear recognition that these three issues are interconnected and reflect that people are at the heart of this sector and at the heart of the climate challenge.
- Most interview conversations centred around the practical issues related to retrofit, particularly the financial aspects. There is a divergence in views between government stakeholders and the AHBs on the finance challenge and this needs to be resolved to move forward.
- Even if there were no climate crisis, cost efficiency is always a focus for this sector. However, more recently there is an increasing focus on decarbonising housing stock for climate action purposes and this is recognised across all stakeholders. It was suggested that decarbonisation is an opportunity to end fuel poverty for good.
- AHBs are attractive strategic partners for Government and contractors alike. By aggregating projects, AHBs can create real economies of scale and enable the supply chain to scale up.
- AHBs have significant buying power and can drive green procurement practices and change within the supply chain.
- There are retrofit supply chain challenges, e.g. materials, equipment and labour shortages, and the AHBs will be impacted by these in the same way as other stakeholders.
- New regulations on Electric Vehicle (EV) charging have financial implications. While grant funding is provided to cover most of the installation costs, once commissioned AHBs will not generate enough revenue from charging fees to cover the cost of ongoing maintenance.
- Rolling out new technology, such as heat pump technology, has quality and skills implications in terms of installation, maintenance and use by tenants.
- AHBs should maximise supports available for their retrofit projects but many are not aware of the opportunities to leverage the Energy Efficiency Obligation Scheme supports available from energy suppliers.



- The conversation is shifting from physical work to retrofit properties to encouraging behavioural change to reduce energy consumption and engagement programmes will be crucial.
- While driving climate standards higher is important, this should not be the role of AHBs. That said, there is a natural role for AHBs in climate related innovation as there are both environmental and cost efficiency benefits and consideration should be given to using AHBs as a test bed.
- There is limited but growing awareness that the conversation is moving to “whole life” carbon emissions for the residential sector, and that in time AHBs will have to tackle embodied carbon.
- There was limited conversation on the role of renewable energy sources and how that fits into portfolio decarbonisation plans.
- Existing planning legislation has kick started adaptation to physical climate risks, e.g. not building on flood plains. Consideration should also be given to transition risks, e.g. introduction of minimum energy performance standards and appropriate measures to manage those risks. Climate related physical and transition risks should be on AHB board agendas.
- The sector needs to embrace innovation even if it is to try things out now so that the sector has capacity/volume in the future. Innovation is seen as a way to tackle multiple issues, i.e. off site construction tackles labour shortages, brings efficiencies and reduces environmental impact. The caveat is that innovation requires government funding, and AHBs are not ideally resourced to be experimented on.

Recommendations to enable Housing Alliance leadership on Climate

- 1 Set the agenda for the AHB sector by agreeing an ambitious common decarbonisation target, aligned with national targets.
- 2 Spearhead the development of a Decarbonisation Guide for AHBs to support the delivery of targets and commitments.
- 3 Establish a Housing Alliance climate action working group, a networking group where members can learn, collaborate and innovate together.
- 4 Engage immediately with public sector stakeholders to ensure that the challenges to raising private or public finance for retrofits are understood, and the full suite of potential solutions is identified and assessed.
- 5 Carry out an assessment of the cost to retrofit older stock across the AHB sector portfolio, with a view to using this to inform engagement with key stakeholders.
- 6 Engage with public sector and industry stakeholders to tackle practical technical, quality and cost issues.
- 7 Engage with the public sector to explore how AHBs could be used as innovation test beds.
- 8 Consider adopting standardised ESG reporting, potentially using the UK Sustainability Reporting Standards for Social Housing.
- 9 Commit to ensuring that climate related financial risk is a standing item on Board agendas and put in place appropriate governance, risk management and oversight arrangements, leveraging guidance in the TCFD Recommendations.



1: Introduction

1.1: The climate crisis and Ireland's climate action targets

The scientific consensus is clear. The earth's climate is warming primarily due to increased greenhouse gas (GHG) emissions to the atmosphere from human activities. Carbon dioxide (CO₂) is one of the main greenhouse gases, which is why people talk about carbon emissions or simply carbon.

Humans have released approximately 1.5 trillion tonnes of carbon into the Earth's atmosphere since the first industrial revolution (Source: [Our World in Data](#)). The thickening blanket of carbon around the atmosphere is heating the planet and changing the climate, resulting in a rise of 1.1°C in the planet's average temperature since 1850 (Source: [WMO](#)). Scientists have warned that if the temperature increase is not limited to 1.5°C there are liable to be catastrophic consequences for human life and the planet (Source: [IPCC](#)).

Climate impacts are already being felt worldwide, evidenced by temperature increases and changing weather patterns. Many regions are being devastated by extreme weather events, such as fires, droughts, floods, hurricanes, and rising

seas, leading to increased risks to people and nature. Immediate and decisive action to reduce and eliminate carbon emissions globally is essential.

In response, Ireland has prepared the Climate Action Plan 2023 (CAP 2023) (Source: [DECC](#)), prepared under the Climate Action and Low Carbon Development (Amendment) Act 2021 (Climate Action Act) (Source: [Irish Statute Book](#)). CAP 2023 implements the economy wide carbon budgets and sectoral emissions ceilings announced in 2022 and sets a roadmap for taking decisive action to achieve a 51% reduction in emissions by 2030 (relative to 2018 levels) and reach net zero no later than 2050. These objectives are now legally binding under the Climate Action Act.

The Climate Action Plan 2023 also acknowledges that some sectors and communities will be more impacted than others, and help will be needed with the costs of the transition to ensure that it happens. Just Transition principles (see Appendix I for definition) are embedded in the plan, including the principle that people need to be equipped with the skills to benefit from changes and that costs must be shared.

1.2: Decarbonisation of national residential building stock

All sectors of the Irish economy will have to decarbonise to meet these ambitious targets, including the residential sector. Within the broader built environment, homes account for 10.2% of all national GHG emissions (Source: [DECC](#)). Decarbonising Ireland's housing stock (both the current stock and that yet to be built) will be essential in tackling the climate crisis and meeting the ambitious targets that have been set at a national level.

Regarding new build homes, the introduction of the Nearly Zero Energy Building (NZEB) standard has seen a 70% reduction in operational emissions, as they are designed to not require fossil fuels to provide space and water heating. (Source: [DECC](#)).

Consequently, the main challenge lies in decarbonising our existing building stock. National targets include retrofitting the equivalent of 500,000 homes to a BER of B2/cost optimal and installing 400,000 heat pumps in existing homes to replace older, less efficient heating systems by the end of 2030. The targets to be delivered by 2025 are 120,000 dwellings retrofitted and 45,000 existing dwellings converted to using heat pumps (Source: [DECC](#)). The various policy levers used to deliver on these targets are outlined clearly in The National Retrofit Plan, published as part of Climate Action Plan 2021 (Source: [DECC](#)).

Fig 1: 2025 and 2030 national climate targets for the residential sector.

Theme	2025	2030
New Buildings	All new dwellings designed to NZEB; 170k using heat pumps	All new dwellings are Zero Energy Building 280k using heat pumps
Retrofits	120k retrofitted to B2 45k using heat pumps	500k retrofitted to B2 400k using heat pumps
Decarbonisation of residential heating	0.7 TWh district heating 0.4 TWh renewable gas Reduction of demand	2.5 TWh district heating 0.7 TWh renewable gas Reduction of demand

1.3: Research project objective and scope

Housing Alliance members manage most AHB housing stock, with c.30,000 homes currently in development and under management across a diverse range of housing types and ages. As a result, they will have a significant role to play in meeting national climate goals. And they are already acting. For example, members are building all new homes to NZEB building standards and, where practical, considering how best to integrate climate adaptation measures, e.g., flood protection. Similarly, they are developing a strategic, phased approach to retrofitting their older stock.

To support their work, the Housing Alliance engaged SustainabilityWorks to research and provide recommendations on how to maximise the potential contribution of the Housing Alliance and the wider AHB sector to address climate change challenges.

The project research objectives included:

- Develop an analysis of the needs, capacity and supports available to realise environmentally sustainable social housing that advances Ireland's climate action goals.
- Develop a clear vision for a climate resilient AHB sector and a concrete, actionable plan to enable the Housing Alliance to provide effective climate leadership.

A specific request was that the scope of the research should be kept broad at the outset to kickstart a dialogue about what climate resilience and environmentally sustainable housing means in the context of the AHB sector.

This report details the findings, insights and recommendations from extensive desk research and stakeholder engagement.



2: Methodology

2: Overview of the methodology

A materiality-based approach was used to identify and prioritise the climate and environmental issues that are most important for the Irish AHB sector to focus on. Asking key stakeholders to prioritise the issues provided clarity on the relative importance of issues across the breadth of the environmental/climate agenda relevant to AHBs and the residential sector.

A five stage process was used for this project (see fig 2):

- 1. Understand the issues:** conduct desk research, including a peer review, to understand and identify the relevant environmental issues for AHBs.
- 2. Talk to stakeholders:** Engage stakeholders in scoring and discussing the issues.
- 3. Analyse the issues:** Analyse the results of the stakeholder feedback and develop a prioritised list of issues (a materiality matrix and ranking table).
- 4. Develop insights:** based on research findings and insights from stakeholder engagement, develop recommendations and next steps.

- 5. Share insights:** host a workshop with Housing Alliance members and all other AHBs to share findings and insights and outline potential actions and solutions for the sector to explore.

The results should provide insights on different stakeholder perspectives and an evidence base to enable the AHB sector to understand how expert stakeholders view the sector from a climate perspective - both now and into the future - to ensure that the sector acts on the climate and environmental issues deemed to be the highest priority and receives appropriate support.

All research and stakeholder engagement was completed in 2022, and the report was presented to the Housing Alliance Board in March 2023.



Fig 2: Five stage process adopted for this project.



2.1: Step 1 - Understand the issues

Extensive desk research was conducted to identify a long list of issues relevant to climate resilience in the Irish AHB sector.

Over 70 publications, including reports, policy documents, research papers and sustainability frameworks, were reviewed. The publications originated from a wide range of Irish and international sources.

A total of 50 issues were identified from across this literature. The frequency with which issues were referenced in literature was recorded. From this long list of issues, a shortlist was created by:

a) Selecting the issues that were mentioned most frequently in the literature; and

b) Grouping similar issues.







This resulted in a shortlist of 22 issues. A definition for each issue was captured and included in the survey sent to stakeholders. The material climate issues identified for discussion with stakeholders are listed in Figure 3. See Appendix for the definitions.

As part of the desk research, six UK and European peers were reviewed to understand what climate related issues, if any, they are focused on. Figure 4 shows the peers reviewed.

1. Carbon emissions
2. Embodied carbon
3. Energy management
4. Renewable energy
5. Climate risk physical
6. Climate risk transitional
7. Fuel poverty
8. Water management
9. Air and noise pollution
10. Indoor environmental quality
11. Sustainable transport
12. Waste management
13. Flood risk (non climate related)
14. Green infrastructure climate resilience)
15. Biodiversity
16. Land use
17. Sustainable procurement
18. Circular construction
19. Sustainable innovation
20. Climate resilient communities
21. Financing for a Just Transition for AHBs
22. Green building certifications/ labels

Fig 3: Material climate and environmental issues identified.

Fig 4: Peers reviewed.

 <p>Tai Tarian, Wales 9,000 homes</p>	 <p>Green Square Accord, UK 26,000 homes</p>
 <p>Gewobag, Germany 75,000 homes</p>	 <p>Stonewater, UK 34,500 homes</p>
 <p>Peabody Group, UK 104,000 homes</p>	 <p>Kāinga Ora, New Zealand (Crown Estate) 69,000 homes</p>

2.2: Step 2 - Talk to stakeholders

Key stakeholder views on climate were gathered via two methods:

1. Online survey

An online survey was developed, requesting respondents to rank and comment on the 22 issues identified, using a 1 to 5 scoring methodology, where 1 is 'not important at all' and 5 being 'extremely important'.

Stakeholders were requested to assess the importance of the issues through the lens of:

- Risk
- Opportunity, and
- Urgency

Respondents were also requested to rank:

- Climate related transition risks
- Climate related physical climate risks

23 completed responses to the survey were received, which included:

- 6 Housing Alliance AHB members
- 1 AHB responded from the broader Irish AHB sector

2. In depth interviews and workshops

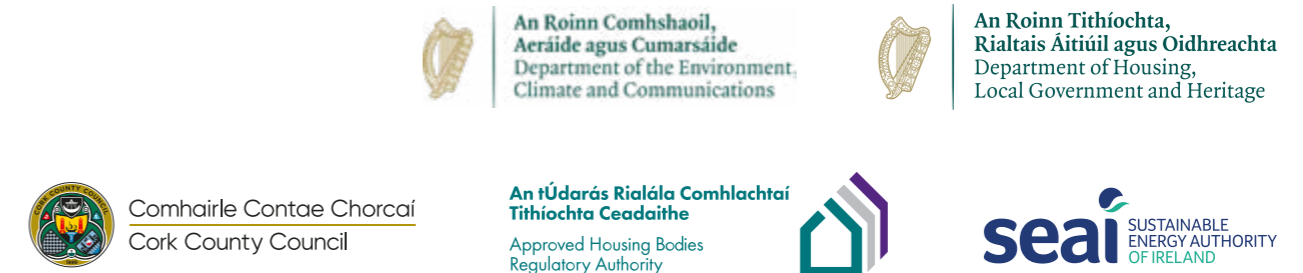
Over twenty six in depth semi structured interviews and workshops were conducted to gather additional views. During the interviews, questions related to technical, policy and financing new build and retrofit were discussed.

See opposite for the list of key stakeholder organisations engaged.

Irish AHBs & Representative Bodies



Government, State Agencies & Local Authorities



International Thought Leaders



Home Builders



Fig 5: Key stakeholders engaged.

Technical Experts



Financial Experts



2.3: Step 3 - Analyse the results

A stakeholder engagement process generates important information that needs to be aggregated to prioritise the issues. Issues were prioritised in two different ways:

A ranking table

A ranking table provides a simple ranking based on the average score for each issue across all stakeholders. This resulted in a grouping of the issues into high, medium and lower priority 'bands' (see figure 14).

A materiality matrix

The stakeholders were split into two groupings (a) internal i.e. all AHBs, and (b) external i.e. policymakers, thought leaders, investors/finance etc. Each stakeholder's response to the survey received the same weighting. Their scores were plotted on a 2 x 2 materiality matrix to assess the relative importance of each issue to both stakeholder groups (see figure 15). The matrix shows which issues are:

- a) High priority for all
- b) More important for internal stakeholders
- c) More important for external stakeholders, and
- d) Less important for all

While the ranking table shows an overall trend and reflects the aggregated view of all stakeholders, the materiality matrix provides a more nuanced view by indicating which climate related issues are priorities for each stakeholder group.

2.4: Step 4 - Develop insights

Based on the findings of the research and from stakeholder engagement, insights were developed to inform recommendations and next steps.

A workshop was held with representatives from the Housing Alliance and the Housing Agency on 30 November 2022 to share a summary of the findings and insights. The proposed recommendations were discussed.

2.5: Step 5 - Agree recommendations

Feedback from this workshop and follow up with key stakeholders from the Housing Alliance project team has been vital and has been incorporated into the final recommendations contained within this report.





3: Key themes from research

During this research, several themes relevant to developing the climate resilience of the Irish AHB sector were identified. The following section is an overview of each theme, including:

- 1 We are now in the era of net zero carbon emissions, and the built environment has a major role to play.
- 2 It is as yet unclear how national climate action targets relating to the residential sector will impact AHBs.
- 3 The discussion on carbon emissions in the built environment is moving from being just about operational carbon to being about embodied carbon.
- 4 Climate-related financial risk should be on the radar of all AHB boards.
- 5 International social housing peers are accessing sustainable finance and considering their ESG strategy and metrics.
- 6 Standardised ESG reporting standards for social housing have been launched in the UK and mandatory ESG reporting is coming in the EU.
- 7 To address the retrofit finance challenges for AHBs, all key stakeholders must have a common understanding of how the sector is financed.
- 8 Government funding schemes that support social housing innovation for climate action are driving results in other countries.
- 9 Ambitious climate action targets are being set by international peers.

3.1: We are in the Net Zero Carbon Era

Today is the era of net zero carbon, where governments, corporates, investors and all organisations are setting ambitious targets to achieve net zero carbon emissions to try and slow global warming.

Put simply, net zero means cutting greenhouse gas emissions to as close to zero as possible, with any remaining emissions re absorbed from the atmosphere, by oceans and forests for instance.

The net zero era is driven by the Paris Climate Agreement, the first ever legally binding global climate change agreement reached in 2015, which:

- set a target to hold the increase in global average temperature to “well below 2°C above pre industrial levels while pursuing efforts to limit the temperature increase to 1.5°C”
- to “peak greenhouse gases (GHGs) as soon as possible” and
- to achieve “rapid reductions” in emissions so that sources of emissions are balanced by sinks (i.e. achieving net zero)

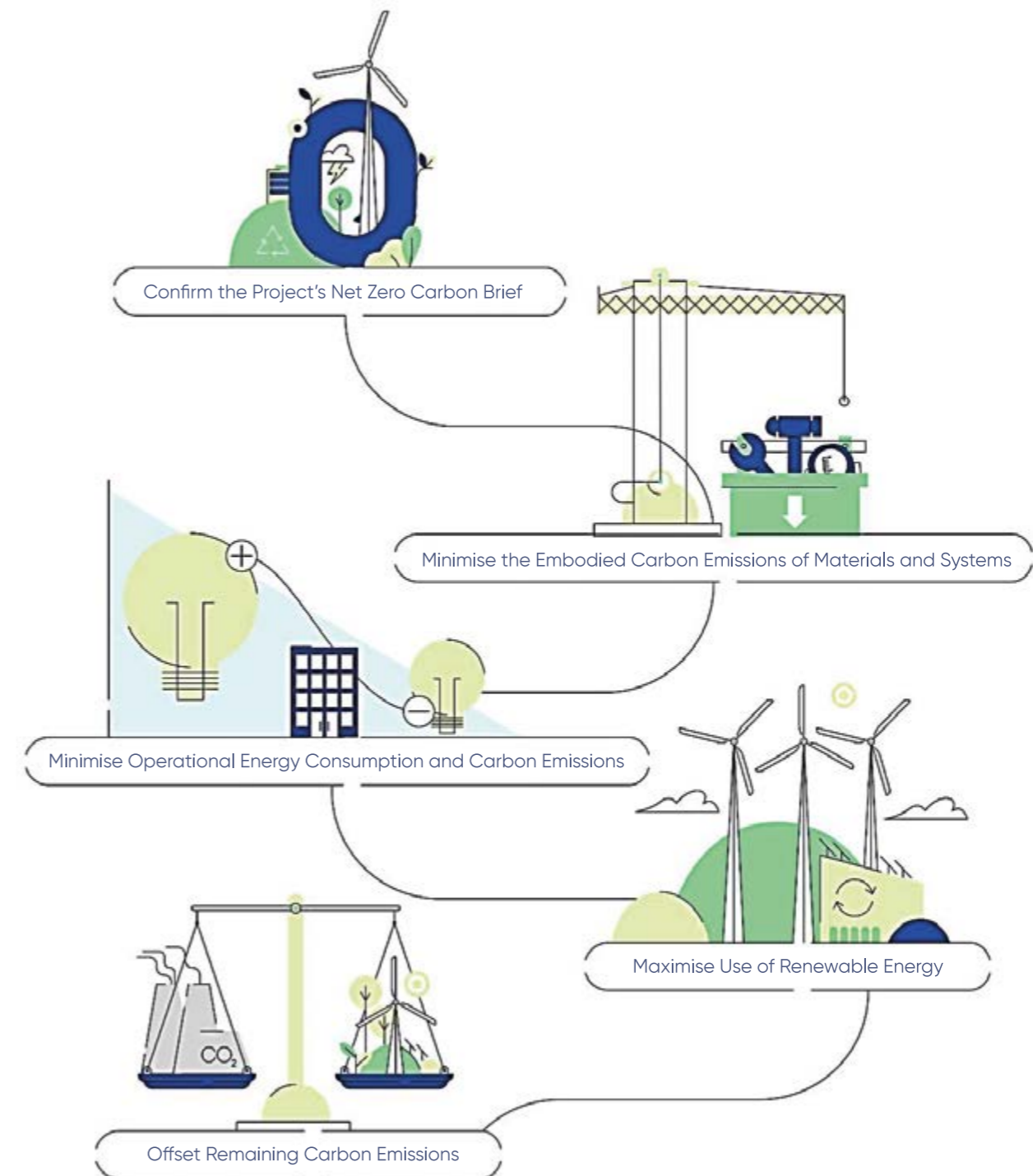
Under the Paris Agreement, each country must plan how to reduce national emissions as part of the global effort under a process called Nationally Determined Contributions (NDCs). While it is up to each signatory to determine the level of ambition of its NDC, regular reporting of NDCs and progress made is intended to bring transparency and accountability to national efforts.

Furthermore, the Paris Agreement is shaping national and regional policies, leading to policy initiatives designed to drive action on climate change across both the real economy and the financial sector.

Across the globe, this is leading to many organisations setting net zero targets. However, to achieve this target, they must avoid business as usual and significantly reduce GHG emissions, and only then should offsets be used for unavoidable emissions.

The built environment generates 40% of annual global CO₂ emissions. Building operations are responsible for 27% of those total emissions, while building and infrastructure materials and construction (typically referred to as embodied carbon) are responsible for an additional 13% annually. Figure 6 shows the key steps to achieving net zero carbon in the built environment/construction sector, including using renewable energy, maximising efficiencies and minimising carbon during construction. The built environment will likely need to move more quickly, so that other parts of the economy that are harder to decarbonise are bought as much time as possible.

Fig 6: A net zero building.



(Source: Net zero Carbon Guide, UK Green Building Council)

3.2: Translating a net zero national target into national plans

Despite political and scientific consensus on the need to decarbonise, 'there is no consensus on precisely how these targets should be translated into national decarbonisation trajectories'. (Source: [MaREI](#))

Many governments are setting carbon budgets to support operationalising their decarbonisation roadmaps. Ireland has set a carbon budget comprising three 5 year carbon budgets for the 5 year periods ending 2025, 2030 and 2035. This budget applies an emissions ceiling to key sectors of the Irish economy the Electricity, Transport, Built Environment, Industry, Agriculture, Land Use, Land Use Change and Forestry (LULUCF) and Other (F Gases, Waste & Petroleum refining) sectors.

In parallel with the carbon budget programme, the Government has set ambitious targets to retrofit homes, install heat pumps and decarbonise residential heating (see Section 1.2 of this paper).

While the current national target is 500,000 homes retrofitted to B2 by 2030, it should be noted that the national Climate Change Advisory Council (CCAC) indicates that meeting the residential sector emission ceiling target will require "a complete removal of coal and peat for residential heating and up to 600,000 retrofits between 2020 and 2030". (Source: [CCAC](#)). This point is noted to highlight that while the current targets may be regarded as stretch targets, there is a growing belief that the residential sector will be asked to do more.

Within the residential sector, there are three main categories of house owners private citizens, local authorities and private rental landlords. AHBs are considered private rental landlords. For the residential sector to meet its sectoral ceiling and CAP targets, each category of house owner will have to play its part.

Under the National Retrofitting programme, local social housing (i.e. authority owned homes) is expected to reach a BER B2 or equivalent when retrofitted and funding has been made available. No such target applies to private homeowners nor private landlords, including the AHBs.

It remains to be seen what policy measures with the potential to impact AHBs in the coming decade may be introduced. In this context, it is worth considering what Governments can actually do to encourage home energy efficiency, either at the individual consumer level or at a sector level. These measures can be divided into either "Carrots" or "Sticks", including those outlined in Figure 7. Already small scale private landlords are incentivised through recently introduced tax measures, which allow for a tax deduction of up to €10,000 per property (Source: [DFIN](#)). In addition, AHBs are being encouraged to retrofit properties through marginal increases in retrofit grants over and above those offered to private citizens.

Fig 7: Policy levers to decarbonise residential buildings.

Carrots	Sticks
Grants	Increase carbon tax
Subsidised low cost finance	Increasingly tighter energy performance standards through building regulations
Tax incentives	Energy efficiency certification of buildings, i.e. the requirement of BER certificates for all new homes and for sales and leases
Capital funding for public/social housing	Introduction of obligations on energy suppliers to deliver certain levels of energy efficiency savings, known in Ireland as the Energy Efficiency Obligation Scheme (EEOS)
Training and capacity building	Obligations on other regulated/public bodies to achieve specific efficiency savings
Consumer awareness campaigns	Minimum energy performance standards and labelling requirements, e.g. for household appliances
Facilitating One Stop Shops (OSS) to overcome barriers	Minimum BER rating requirements, e.g. for homes that are to be rented
Clear and durable policy frameworks to support national strategies, plans & targets	Requirements around phasing out production of inefficient equipment, e.g. incandescent light bulbs, fossil fuel boilers

(Source: [Financing Energy Efficiency in Ireland, SustainabilityWorks, 2020](#))

3.3: From BER ratings to operational emissions to embodied carbon

Discussions around reducing the carbon emissions associated with new buildings are accelerating at pace, and moving from theoretical usage, to actual emissions when occupied, to the embodied carbon emissions associated with the manufacturing, transportation, installation, maintenance and disposal of the construction materials. Measurement and mitigation of both operational and embodied emissions are the focus of net zero climate action pledges by large institutional real estate investors, lenders, owners, and developers.

By way of background, the national rating system for the energy efficiency of dwellings is the BER rating system. A BER is a theoretical calculation of the energy usage of a home when built, i.e. it doesn't take into account real energy usage based on actual occupant behaviour. The theoretical energy efficiency of a home is rated on a scale of A to G, with an A rated home being the most energy efficient and G the worst. Under current Irish building regulations, all new homes must be built to an A2 BER rating standard. This is a mandatory, legal requirement.

A good BER usually means less energy used, less carbon emitted and lower energy bills. However, research has shown this is not always the case, as sometimes people prioritise thermal comfort throughout the whole home, which in turn increases energy use and carbon emissions. (Source: SEAI)

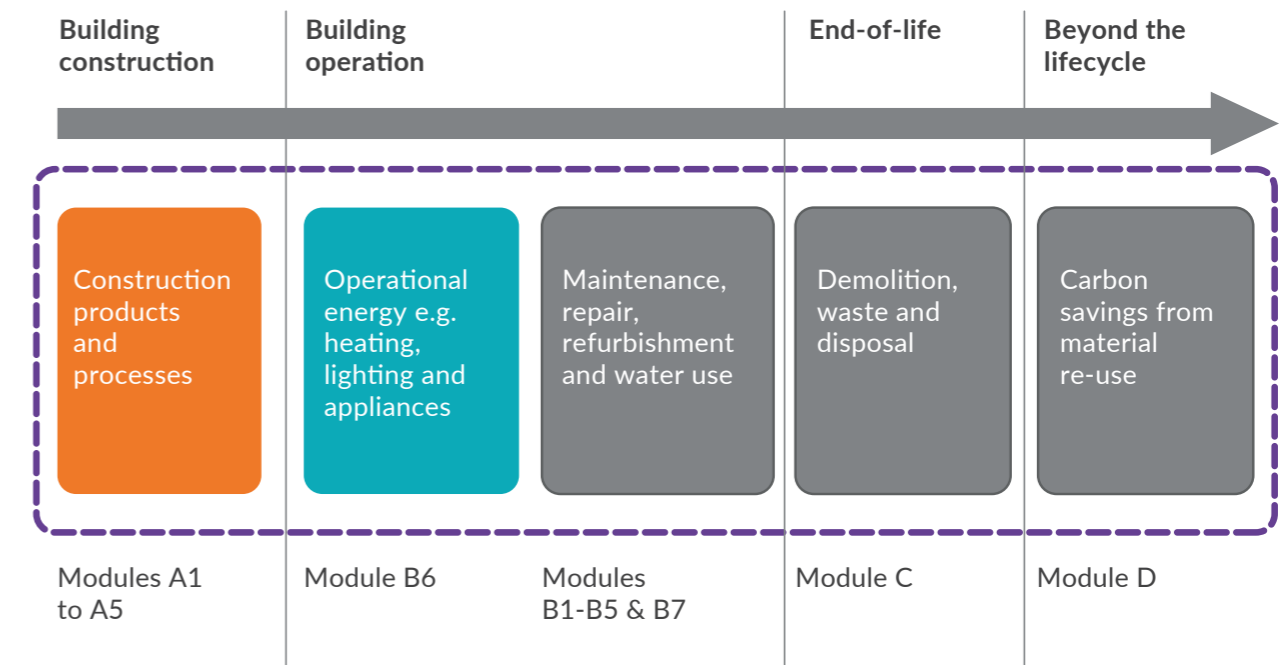
More and more landlords, particularly large scale or commercial landlords, including larger AHBs, are being requested or required to disclose their performance under various environmental, social and

governance (ESG) metrics, including carbon. When reporting on carbon, landlords first need to calculate their scope 1, 2 and 3 GHG emissions. Essentially, scope 1 and 2 are those emissions directly or controlled by the landlord (e.g. electricity purchased to power their offices), whereas scope 3 emissions are indirect emissions. Understanding scope 1, 2 and 3 emissions will enable a landlord to develop a decarbonisation plan.

Reducing scope 3 emissions will be important in decarbonising the built environment sector. Scope 3 emissions include actual emissions arising from how tenants use energy in their homes and embodied carbon. Embodied carbon can account for a significant portion of a building's scope 3 emissions, and it is important to understand the concept and to know that there will be an increasing focus on reducing embodied carbon from green building advocates to policymakers and finance providers alike. Some international AHBs are starting to factor this into their new builds, as illustrated in Section 3.8.

While operational and embodied carbon emissions can be assessed on their own but to fully understand energy use and carbon emissions from a building, it is important to understand the interconnectivity between them. Whole Life Cycle Carbon (WLC) emissions are the carbon emissions resulting from the materials, construction and use of a building over its entire life, including its demolition and disposal. Therefore, a Whole Life Cycle Carbon assessment ensures that the combined impact of operational and carbon emissions are assessed, thus providing true picture of a building's carbon impact on the environment.

Fig 8: Overview of Embodied, Operational, and Whole Life Carbon.



All Modules referred to are from EN15978 Sustainability of construction works – Assessment of environmental performance of buildings – Calculation method

- Net Zero Carbon – Construction (1.1)
- Net Zero Carbon – Operational Energy (1.2)
- Net Zero Carbon – Whole Life (future development) (1.3)

(Source: UK Green Building Council Framework, 2019)



3.4: Climate related financial risk

Climate related financial risks are firmly at the top of the financial sector agenda since 2015 when the link between climate risk and financial risk was clarified by then Bank of England Governor Mark Carney in his Tragedy of the Horizon speech.

He noted that the potential impacts of climate change on organisations are not only physical that manifest in the long term. It also involves “transition” risks as the transition to a lower carbon economy implies movement away from fossil fuel energy and related physical assets (see figure 9 for definitions). This, coupled with rapidly declining costs and increased deployment of clean and energy efficient technologies, could have significant, near term financial implications for organisations dependent on extracting, producing, and using coal, oil, and natural gas. They are not alone. Climate related risks and the expected transition to a lower carbon economy affect most economic sectors and industries, including the built environment.

In this speech, Carney raised the profile of climate related financial risk on the agenda for all stakeholders investors, governments, financial regulators, funds, banks, and insurance companies, as well as organisations in the real economy. He set out that better information will help investors engage with companies on the resilience of their strategies and capital spending, which should help promote a smooth rather than an abrupt transition to a lower carbon economy. It would also help financial regulators and policymakers to assess the implications for the global financial system, especially in terms of avoiding financial dislocations and sudden losses in asset values.

In response, the Taskforce on Climate related Financial Disclosure (TCFD) was established, and it developed a voluntary disclosure framework around climate related financial risks that organisations can follow (see figure 10). It is increasingly mandatory for large companies, either through reporting requirements or national legislation e.g. the UK and New Zealand. Even if not mandatory, the TCFD recommendations provide a useful framework for any organisation to identify and implement governance around climate related financial risks and opportunities relating to its activities.

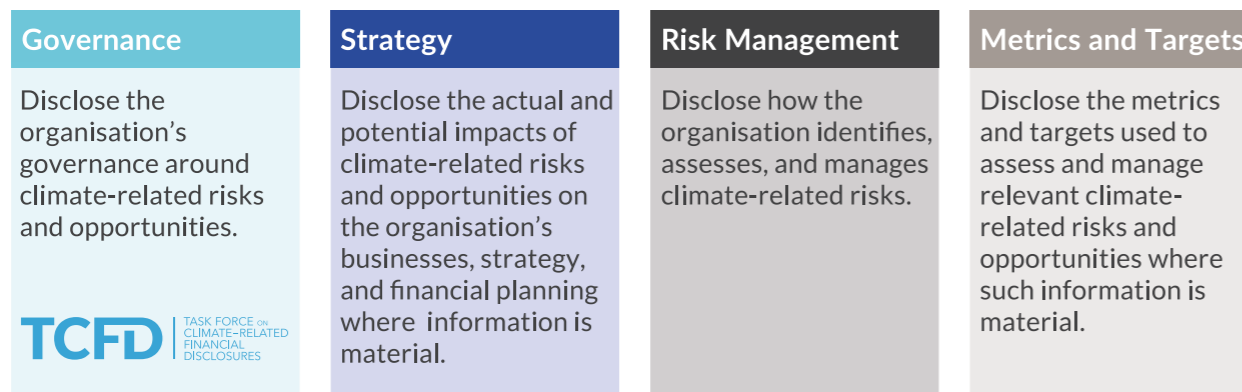
Financial regulators and supervisors are today setting expectations that climate risk is on the agenda of the entities they regulate and are carrying out climate stress tests on individual institutions and economy wide. In addition, voluntary net zero targets are being set by investors, lenders and insurers not just for their own operational footprint but for their portfolios with the effect of pushing net zero targets through the value chain.

Fig 9: Climate related financial risk categories.



(Source: SustainabilityWorks, 2021)

Fig 10: Task force on Climate related Financial Disclosures, Oct 2021.



(Source: TCFD Final Report, 2017)

3.5: ESG and access to sustainable finance

ESG stands for environmental, social, and governance issues. These are the three main categories that the financial sector (investors, lenders and insurers) use to evaluate the performance of an investment or business in relation to issues that may not (yet) be reflected in their financial statements.

Environmental factors include issues like a company's carbon footprint and its approach to preserving natural resources. Social factors include a company's treatment of its employees and its impact on the community, while governance deals with a company's leadership, ethical business practices, and transparency.

How these ESG issues are considered by a financial institution varies broadly, and there is no one size fits all approach. Some financial institutions may focus on the financial effect of ESG related risks and opportunities, while others may be interested in broader impacts, e.g. whether an activity or asset has a positive impact on global environmental or social challenges.

There is rapidly growing interest in ESG issues and evidence that financial stakeholders are integrating analysis of performance on the most relevant ESG issues into their financial decision making processes. Aligned with this trend, sustainable finance policy and regulation is emerging, particularly in the EU, with a view to rewiring the financial system to systematically consider ESG risks and opportunities, particularly those relating to climate.

Sustainable finance debt instruments to meet market demand have emerged and can be classified into two categories: (1) use of proceeds instruments or (2) sustainability linked instruments (see figure 11). International social housing peers have tapped into this market, as it can deliver pricing benefits and/or appeal to a broader set of investors.

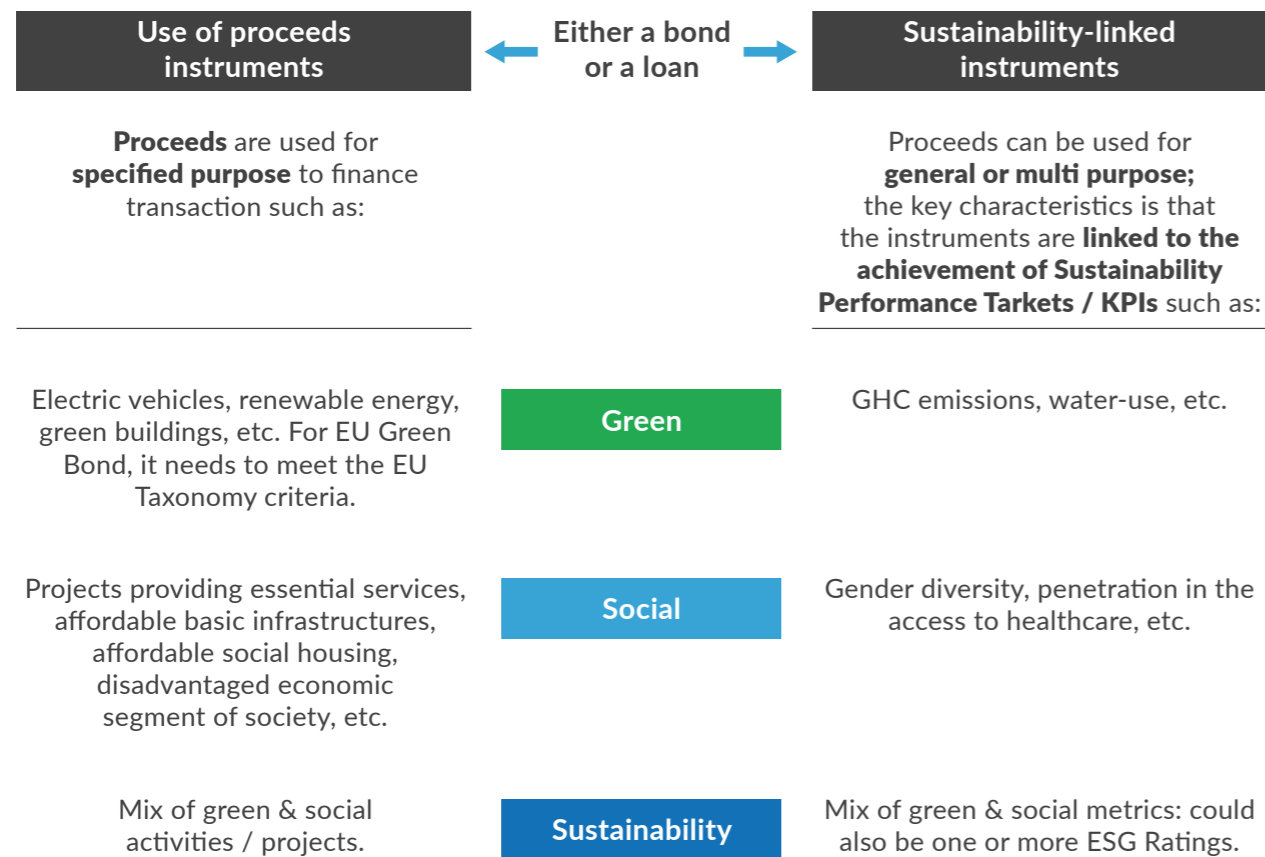
The Certified Sustainable Housing label should also be highlighted. It is the first tool to measure the positive impact of affordable housing companies globally. The rationale for doing so is to make the whole sector visible to the capital market and the "low risk asset class" affordable housing accessible to a broad range of investors. Developed by Ritterwald, the label has been adopted by a number of EU social housing bodies. (Source: Ritterwald)

Over the last two years, as interest from more environmentally and socially aware investors in the sector has grown, the amount of sustainable and sustainability linked loan and bond finance accessed by UK social housing bodies has grown significantly. KPIs for sustainability linked loans often include the decarbonisation of existing housing stock.

Clarion Housing Group, the largest social landlord in England, became the first UK housing association to issue a sustainable bond in 2020. (Source: Social Housing UK)

Bond aggregators, such as The Housing Financing Corporation (THFC) and MORHomes, which issue long term bonds and lend the proceeds to housing associations, have both published sustainable bond frameworks, making it easier for smaller housing associations to access sustainable bond funding in the future. (Source: THFC and MORHomes)

Fig 11: Overview of Sustainable Finance Instruments.



3.6: ESG reporting by social housing bodies

The financial sector can only integrate ESG analysis into decisions where they have sufficient information on which to do so. This need is driving increasing requests for reporting on ESG plans, targets and performance across all sectors. This trend is relevant to the social housing sector also.

A recent UK report (**Source: SustainabilityforHousing**) indicates that ESG factors will form a more fundamental role in the credit process underpinning investment decisions and in the ESG questionnaires being sent to housing associations from investors. As noted in the report, this demands “a more proactive response from the social housing sector, which previously had relied on a presumption that it ticked ESG boxes but with little structure or consistent reporting to substantiate this.”

In response, the UK social housing sector has worked with its funders to establish an ESG reporting approach that addresses the needs of both the sector and financial providers alike.

The Sustainability Reporting Standard for Social Housing (SRS) was launched in November 2020 as a voluntary reporting framework designed to enable social housing providers to report on their ESG performance in a transparent, consistent and comparable manner. (**Source: The Good Economy**)

Like any reporting standard, the SRS helps drive strategic direction, operational decision making, and ambition for ESG performance. SRS reporting is becoming expected of all housing providers who seek external commercial finance.

The SRS is expected to influence pricing models that consider both financial and ESG metrics, and close to a fifth of housing providers reported that the SRS had assisted them in creating their Sustainability Finance Framework and/or with negotiating access to Sustainability Linked Loans and Green Bond finance. (**Source: The Good Economy**)

A number of the UK social housing bodies are reporting under the voluntary Social Housing Sustainability Reporting Standard. In addition to enabling comprehensive, investor useful reporting by individual housing bodies, the SRS also enables sector wide metrics to be collated, as all entities report on the same basis.

While the above is a voluntary reporting standard that might be helpful to Irish AHBs, it should be noted that larger AHBs may be required to report under the new EU Corporate Sustainability Reporting Directive (CSRD) over the coming years.

Fig 12: Entity level disclosures under SRS.

GREENHOUSE EMISSIONS

C16: Scope 1, Scope 2 and Scope 3 green house gas emissions

Scopes are the basis for mandatory Green House Gas Protocol (2001) reporting in the UK.

- Scope 1 covers the Green House Gas emissions we make directly, for example from running our boilers and vehicles
- Scope 2 are the emissions we make indirectly, like when the electricity or energy we buy for heating or cooling buildings is being produced on our behalf
- Scope 3 are all the emissions associated with us but not by us ourselves. For example, when we buy products from suppliers and from its products when customers use them.

Emissions tonnes CO₂e

	2019	2020
Scope 1	12,399	13,465

Note: Data for Scope 2 and Scope 3 is being gathered and is under review by external partners.

Scopes 1 and 2 are within our control and that is why we have set out in our Sustainability Strategy to actively manage our emissions. By 2030, we will be net zero carbon on our emissions from our day-to-day business operations. Within our rented homes, we aim to be net zero carbon by 2050 in line with Government targets.

TAKING ACTION ON ENERGY EFFICIENCY

C17: What energy efficiency actions has the housing provider undertaken in the last 12 months?

Our Energy Advice service has been running since 2013 and we are now expanding this to service free of charge to all Peabody social housing and leaseholder residents. Last year we helped 213 residents to save approximately £30,000 and an estimated 127,800 kg of carbon emissions.

We have fitted some homes with smart thermostats, giving our residents the ability to control their heating in different parts of their homes and the temperature of their hot water. This has reduced their bills by an average 17% and 158 tonnes of carbon emissions. We have installed 216 Switchee smart heating thermostats since 2018 and have purchased another 120 smart thermostats to be installed.

Currently we are gathering data so that we can prioritise our focus. We are constantly improving our modelling and knowledge of where are and what we need to do to improve. We will be starting with properties that require the most investment to reduce fuel poverty and improve energy efficiency.

MITIGATING CLIMATE RISK

C18: How is the housing provider mitigating the following climate risks: increased flood risk, increased risk of homes overheating

Flood risk is regularly monitored and assessed. As most of our homes are based in London, the risk of tidal flooding is minimised, and river flooding is reduced by the Thames Barrier. Our homes that are further down the river in Dagenham and Thamesmead are protected by flood barriers. The Environment Agency is responsible for the ongoing maintenance and upgrades to the barrier.

Risk of surface water flooding is managed by the Local Authorities including the GLA. Peabody is working with the London Climate Change Partnership to ensure we do our part in helping control these risks.

For our new developments, we ensure they have sustainable drainage to help with damage sustained by increased rainfall in urban areas, as mandated by the London Plan's policies for developments. We have retrofitted three estates with Sustainable Drainage Systems in Herne Hill, Islington and Shadwell.

Flood Risk from CROHM Stocl model*

	No. of homes	% of stock
No risk	36,622	66%
Very low risk	42	0%
Low risk	16,563	30%
Medium risk	715	2%
Not known	1,184	2%

*Based on the model of 56,000 homes

(Source: Peabody, ESG Report)

Fig 13: Sector wide disclosures under SRS.

**Environmental**

- 14% of existing stock had EPC ratings of A or B, compared with 87% of new build stock
- Close to 80% of housing providers reported against the criteria on Scope 1, 2 and 3 emissions
- 88% of the housing associations reported on biodiversity criteria
- Managing pollutants received the lowest response rate in the SRS at 73%

(Source: Sustainability for Housing, 2022)



3.7: The Retrofit Finance Challenge for AHBs

Decarbonising older stock within AHB portfolios will bring technical, practical and financial challenges. However, nothing can happen without finance and developing an understanding of the existing funding landscape for AHBs is vital to understand the specific challenges that are arising.

AHBs have been provided with funding by government using varying mechanisms and systems. The complexity is clearly outlined in the October 2022 report from Campbell Tickell, “Building on Success A Financial Roadmap for AHBs,” (Source: [ICSH](#)).

Key points from that report that are relevant to accessing finance to fund retrofit projects include those listed below.

- Homes purchased prior to 2009 were generally funded through a 100% grant or loan from the local authorities (subject to certain conditions). For homes funded through the Capital Loan and Subsidy Scheme (CLSS), the AHB is entitled to receive a “differential” rent payment from the tenant. For homes funded under the Capital Assistance Scheme (CAS), the AHB is entitled to an “economic rent”.
- Differential rent is based on a percentage of the tenant’s income, unrelated to economic rent or market rent levels. Each local authority sets different rates. The income derived from differential rent does not meet the full cost of managing and maintaining properties over the long term.
- “Economic rent” is set at levels which are “reasonable having regard to tenants’ incomes and the outlay of the AHB on the accommodation, including the ongoing costs of management”. As with differential rent, there is a view that the income derived from economic rent is insufficient to meet the full cost of managing and maintaining properties over the long term.
- Introduced in 2011, the Capital Advance Leasing Facility (CALF) offers an advance of up to 30% of the capital cost of a home by way of a long term loan with no repayments until the end of the loan term. The balance of the capital cost is raised either from the Housing Finance Agency (HFA) or third party private lenders. It is secured through a Payment & Availability (P&A) Agreement with the local authority. The P&A is set at 92% of market rent for CALF funded projects (currently under review) and is set to cover the expected maintenance and management costs across the scheme’s life.
- Given the lifespan of these finance agreements, many AHBs will have properties funded under the CLSS, CAS and CALF schemes.
- The increase in the overall level of debt being carried in AHB balance sheets due to the CALF funding model has led to a consequent increase in their financial gearing, as calculated by the accepted method used by financial markets and industry regulators. High levels of gearing will, if not managed effectively, hinder the sector’s ability to attract sufficient non government funding at scale to support the ongoing delivery of social housing. While the HFA may not regard the AHB gearing issue as a matter of concern, private lenders will expect borrowers to

demonstrate they can meet the usual loan covenants, not only in respect of the scheme being funded but also at a total business level.

- And yet, the CALF funding model gives rise to an ever growing cash balance, which is assumed to be ‘ring fenced’ to repay the CALF loan plus interest and meet ongoing maintenance commitments for the life of the property. Carrying this growing level of cash presents its own challenges for an AHB Board, who are then required to manage the inherent treasury risk and the unfavourable optic of a social enterprise generating what appears to be huge amounts of reserves, albeit that these are retained for legitimate purposes.
- The shortfall in rent revenues for ongoing management and maintenance costs on some stock, primarily older units, has the result that some AHBs are now having to cross subsidise these activities from other sources.
- It is unclear what arrangements will be put in place once P&A agreements have run their course to ensure that operating and maintenance costs can be adequately funded to sustain the assets for social housing use in the long term, not to mention having cash reserves to invest in ongoing energy retrofits. However, the absence of such arrangements also negates any possibility of unencumbered stock being utilised as security for refinancing purposes.

3.8: Innovative retrofit finance case studies

The split incentive between tenants and landlords is one of the most acute and persistent barriers to unlocking the potential of energy efficiency in buildings. The challenge is that the landlord is responsible for meeting the cost of the improvement works but only receives a benefit when the work increases the rental or resale value of the property. The tenant benefits from lower energy costs but is unlikely to invest in the work. This challenge is exacerbated in the context of AHBs, where (a) the rental income is prescribed in legislation or long term P&A agreements and (b) they do not intend to sell the properties and, therefore, cannot realise the benefit of an uplift in value.

We highlight two case studies that may be relevant in the context of innovative funding methods for AHB climate action going forward. The Welsh case study is interesting as it illustrates how social housing bodies can be useful testbeds for innovative solutions for new builds and retrofitting, provided they are provided with government funding to do so. The Irish case study is innovative as it includes a voluntary contribution from tenants that was effectively “built in” to their future rents.

Pathway to Zero Project, Wales

Awarded £7 million by the Welsh government, a consortium of over 68 partners, including 26 social housing partners, are working together to create blueprints to achieve a net zero home. This project recognises that the residential sector faces many challenges if it wishes to become net zero, and has set about to create blueprints or pathways to facilitate incremental home upgrades over multiple steps in a coordinated way.

This approach allows resources, including funding, to be prioritised so that they can have the biggest carbon impact. The project uses a combination of building fabric improvements, low and zero carbon technologies (such as solar panels, battery storage and heat pumps), and intelligent operational controls to reduce the carbon footprint of each home as much as possible. Over 1300 homes are included in this project, but the plan is to replicate and mainstream this approach. (Source: [Sero Life](#))

Co-operative Housing innovative retrofit funding solution

In 2013 almost €7m of funding was provided to 37 Better Energy Warmer Homes Area Based projects, which delivered energy efficiency upgrades to almost 3,000 energy poor households. Successful projects included targeted area based projects using a partnership approach that were competitively priced and delivered energy efficiency improvements to vulnerable homes.

At Cherry Orchard in Dublin, home energy upgrades were delivered in 77 homes in a project supported by SEAI. As part of this project, Cooperative Housing (previously the National Association of Building Cooperatives (NABCO), trialled an innovative funding model in 2013.

Targeting a single housing estate represented an excellent prospect for providing similar energy efficiency upgrades to all the homes and to achieve economies of scale in the project costs. The measures provided included attic insulation, cavity wall insulation, doors, windows, high efficiency gas boilers, remote access heating controls and high efficiency lighting. The average BER improvement achieved was from D1 to B3. The project, delivered in collaboration with Electric Ireland, featured an innovative funding model where participants were asked to pay half the value of their energy savings over five years to help support future energy upgrade projects. The financial contribution from residents was 'built into' their rents.

There was excellent buy in from residents, who welcomed the fact that they would have a warmer and more comfortable home. (Source: [SEAI](#))

3.9: Overview of international peers and climate action

Tai Tarian (Wales)

Net Zero Target	Embodied Carbon	Carbon footprint exercise	Finance Innovation	Building rating target	Climate risk assessment
Net zero by 2030 in operations	No info	Plan to carry one out in next number of years	No info	New homes to be EPC A rated	No info

Gewobag (Germany)

Net Zero Target	Embodied Carbon	Carbon footprint exercise	Finance Innovation	Building rating target	Climate risk assessment
Climate neutral building stock by 2045 via Wohnen2050 Initiative. Involves multiple German partners from the residential sector	Plan to increase use of wood in construction	Planned for 2023	Issued a social bond (€500m)	High energy standards	No info

Peabody Group (London, UK)

Net Zero Target	Embodied Carbon	Carbon footprint exercise	Finance Innovation	Building rating target	Climate risk assessment
By 2050 in our new and existing homes and in their day to day operations by 2030	Introducing WLC carbon emission standards for new developments	Yes for scope 1,2&3	12 year sustainability bond worth £350m (using their own sustainable finance framework)	By 2050, aim to reach net zero carbon with an average SAP of 86 (EPC B) in our rented homes and an average SAP of 74.5 (EPC C) by end of 2024.	Flood risk and overheating risk assessments carried out. High risk of flooding in 0.24% of homes. High risk of overheating in 1.6%.

Green Square Accord (UK)

Net Zero Target	Embodied Carbon	Carbon footprint exercise	Finance Innovation	Building rating target	Climate risk assessment
Net zero by 2050 for properties	No info	Yes for operations and properties under management	Have just published a sustainable finance framework	EPC C by 2030	No info

Stonewater (UK)

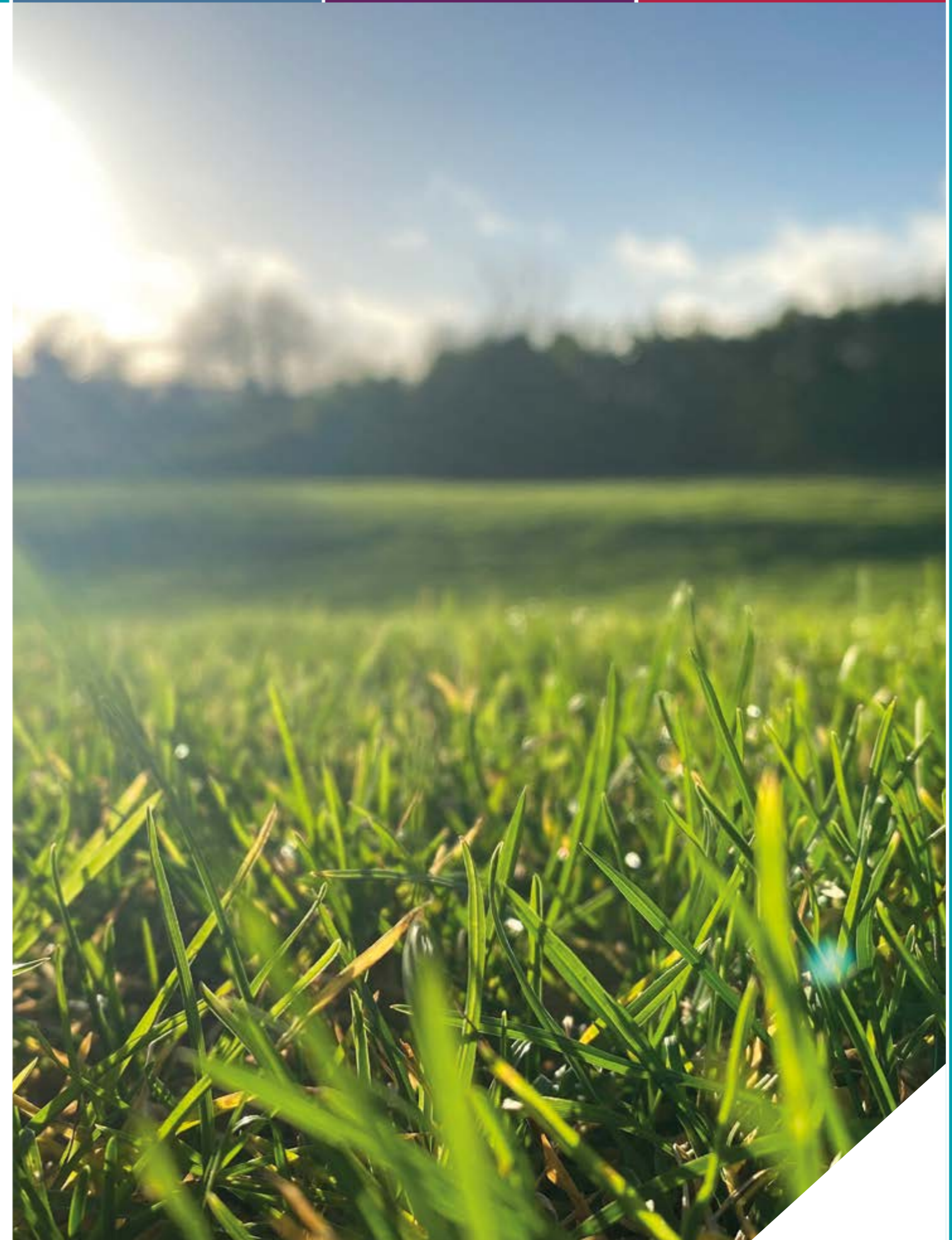
Net Zero Target	Embodied Carbon	Carbon footprint exercise	Finance Innovation	Building rating target	Climate risk assessment
Net zero emissions by 2050	No info	Planned for 2022/2023	Have a sustainable finance framework. Raised £250m bond	All homes to be minimum EPC C by 2030	Not specified but indicates it has assessed ESG risks

Kāinga Ora (New Zealand)

Net Zero Target	Embodied Carbon	Carbon footprint exercise	Finance Innovation	Building rating target	Climate risk assessment
Aligned to New Zealand government net zero by 2050 target	Will be part of their emissions inventory	Required to report on all material emissions sources annually from FY 2023, and to develop reduction targets in line with a 1.5°C climate scenario.	Internal shadow price of carbon 2024	Have raised Wellbeing Bonds. Part of the Kāinga Ora Sustainable Finance Framework.	In development

Energy Performance Certificate

Energy Performance Certificate (EPC) is the UK's scheme to calculate the theoretical energy performance of a residential building. The EPC rating scale is from A to G, with an A rated home being the most energy efficient and G the worst. The difference with the BER scale is that the BER rating bands are more granular, i.e. A1, A2, A3 and so on for each band. For comparison a BER of B2 is broadly similar to an EPC C.



4: Analysis of Survey Results

4.1: Analysis: Simple ranking table

As noted in Section 2.2, we asked survey respondents to score the 22 issues identified based on their view as to the importance of the issue. Survey scores were analysed to determine an average score for each issue (see figure in square brackets below beside each issue) and to determine an overall ranking of the full set of issues see Figure 14.

Please note that views are subjective and are determined by stakeholders' knowledge, interests and agenda. A few key points:

- The top three issues are interconnected; Energy management, Fuel poverty and Financing a 'Just transition' all reflecting that people are at the heart of this. Energy management and fuel poverty are directly linked towards people's comfort in their homes, with the financing needed to allow for a just transition to bring all tenants into low carbon, warm, healthy homes.
- The remainder of the top 10 issues are all climate and carbon related, signifying that, of all environmental issues, these are deemed of the highest importance by both the sector and its stakeholders. While the sector may have prioritised carbon emissions from an efficiency and affordability perspective, this may be changing, with the link being made to climate action.
- For the medium priority band, it is worth noting that a number of these, e.g. sustainable innovation and sustainable procurement, are linked to and enable higher priority issues.
- For some issues in the lowest priority band, this may be because they are simply regarded as non negotiables, e.g. air and noise pollution, water management, waste management, sustainable transport. For others, they may just been seen either as genuinely less important or less relevant, e.g. green certification of buildings.
- For clarity, the issue "financing a just transition" was used as a proxy for the availability of both public and private finance to retrofit homes and to ensure highest energy standards in new homes (see full definition in Appendix I).

Fig 14: Overall ranking and prioritisation of the issues.

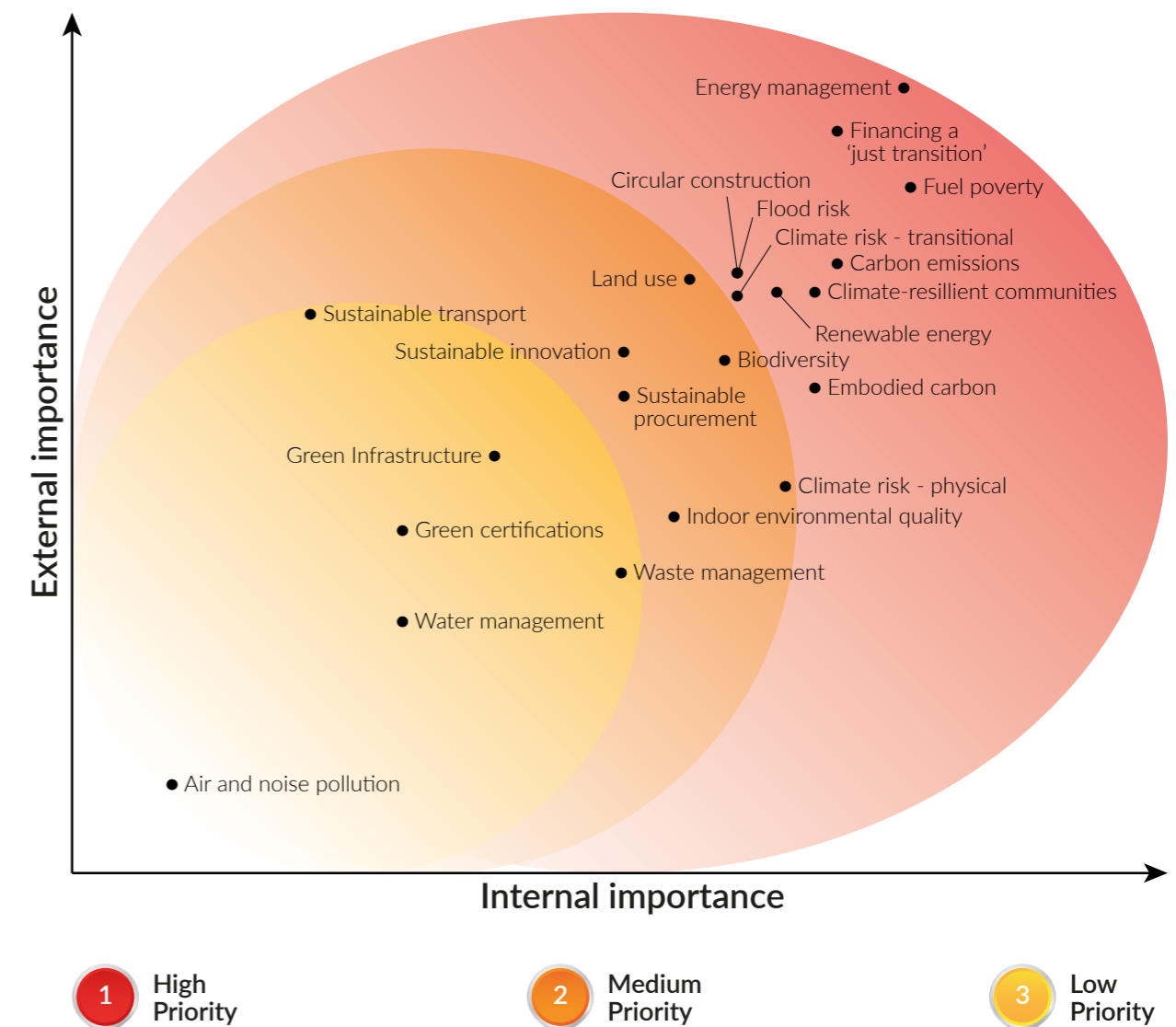
1 High Priority	1. Energy management	[4.73]
	2. Fuel poverty	[4.55]
	3. Financing a 'just transition'	[4.37]
	4. Carbon emissions	[4.19]
	5. Climate resilient communities	[4.07]
	6. Renewable energy	[4.02]
	7. Flood risk	[3.96]
	8. Circular construction	[3.96]
	9. Embodied carbon	[3.96]
	10. Climate risk transitional	[3.92]
2 Medium Priority	11. Land use	[3.87]
	12. Biodiversity	[3.83]
	13. Sustainable innovation	[3.79]
	14. Climate risk physical	[3.71]
	15. Sustainable procurement	[3.70]
	16. Indoor environmental quality	[3.62]
3 Low Priority	17. Green infrastructure	[3.51]
	18. Sustainable transport	[3.50]
	19. Waste management	[3.46]
	20. Green certifications	[3.32]
	21. Water management	[3.17]
	22. Air and noise pollution	[2.80]

4.2: Analysis: Plot the relative importance of issues

- To provide additional insights, stakeholders are split into two groupings (a) internal i.e. all AHBs, and (b) external i.e. policymakers, thought leaders, investors/finance etc.
 - Each stakeholder's response to the survey received the same weighting.
 - Their scores were plotted on a 2 x 2 materiality matrix to assess the relative importance of each issue to the 2 stakeholder groups.
 - While the ranking table shows an overall trend and reflects the aggregated view of all stakeholders, the materiality matrix provides a more nuanced view by indicating which climate related issues are priorities for each stakeholder group.
- The insight this provides is that there is broadly good alignment between internal and external views of the importance of each issue (significant differences of opinion appear in the top left and the bottom right hand quadrants).
 - There is some inconsistency in the ranking of "solution focused issues" (e.g. circular construction, sustainable innovation, green infrastructure), suggesting a potential knowledge gap when considering these topics and their potential contribution to climate action.
 - Delving into the nuances between the different stakeholder groups can help identify further knowledge gaps. It can also help understand where there are divergent views on issues, which may require further consideration by AHBs to assess how best to advance on an issue.



Fig 15: Assessing relative importance of the issue to internal and external stakeholders.



4.3: Analysis: Assess nuances in different stakeholder group views

Some interesting divergences of views are highlighted below in figure 16 for reflection.

Overall	AHBs	Government	International Experts	Finance
1. Energy management	1. Energy management	1. Carbon emissions	1. Carbon emissions	1. Energy management
2. Fuel poverty	2. Fuel poverty	2. Energy management	2. Energy management	2. Flood risk
3. Financing a 'just transition'	3. Financing a 'just transition' for AHBs	3. Fuel poverty	3. Renewable energy	3. Climate risk transitional
4. Carbon emissions	4. Carbon emissions	4. Biodiversity	4. Financing a 'just transition' for AHBs	4. Circular construction
5. Climate resilient communities	5. Climate resilient communities	5. Land use	5. Climate risk transitional	5. Embodied carbon
6. Renewable energy	6. Embodied carbon	6. Financing a 'just transition' for AHBs	6. Fuel poverty	6. Renewable energy
7. Flood risk	7. Renewable energy	7. Renewable energy	7. Circular construction	7. Climate risk physical
8. Circular construction	8. Climate risk physical	8. Climate resilient communities	8. Climate resilient communities	8. Sustainable transport
9. Embodied carbon	9. Climate risk transitional	9. Sustainable procurement	9. Embodied carbon	9. Land use
10. Climate risk transitional	10. Indoor environmental quality	10. Flood risk	10. Climate risk physical	10. Sustainable innovation
11. Land use	11. Flood risk	11. Green infrastructure (for climate resilience)	11. Sustainable transport	11. Fuel poverty
12. Biodiversity	12. Biodiversity	12. Embodied carbon	12. Flood risk	12. Water management
13. Sustainable innovation	13. Circular construction	13. Circular construction	13. Sustainable innovation	13. Green infrastructure (for climate resilience)
14. Climate risk physical	14. Waste management	14. Sustainable transport	14. Green infrastructure (for climate resilience)	14. Biodiversity
15. Sustainable procurement	15. Land use	15. Sustainable innovation	15. Biodiversity	15. Sustainable procurement
16. Indoor environmental quality	16. Sustainable procurement	16. Climate risk transitional	16. Land use	16. Climate resilient communities
17. Green infrastructure	17. Sustainable innovation	17. Indoor environmental quality	17. Sustainable procurement	17. Financing a 'just transition' for AHBs
18. Sustainable transport	18. Green infrastructure (for climate resilience)	18. Climate risk physical	18. Green certifications/ labels	18. Waste management
19. Waste management	19. Green certifications/ labels	19. Air and noise pollution	19. Water management	19. Green certifications/ labels
20. Green certifications	20. Water management	20. Green certifications/ labels	20. Indoor environmental quality	20. Carbon emissions
21. Water management	21. Air and noise pollution	21. Water management	21. Waste management	21. Indoor environmental quality
22. Air and noise pollution	22. Sustainable transport	22. Waste management	22. Air and noise pollution	22. Air and noise pollution

Fig 16: Overall rankings by stakeholder group.

Additional Findings on the Issues

1. Carbon emissions

The number one priority after tenant focused issues, carbon emissions was viewed as extremely important across the stakeholder engagement process. It is important to access funding, and for AHBs to work together to reduce their emissions profile, with a focus on older stock.

“Very important.”

“A critical issue for AHBs especially when thinking about older stock.”

“This is on the radar now should be using and converting existing buildings before thinking about new builds.”

“For AHBs this isn't as important as operational carbon emissions from housing stock.”

3. Energy management

Core and central focus for AHBs and falls right into their mandate to provide affordable housing. New buildings again have good systems in place ensuring tenants are comfortable and warm. Where action needs to be taken is with the older housing stock and retrofitting these properties.

“Vital that tenants are not having to spend a huge portion of their disposable income on energy.”

2. Embodied carbon

This is seen to be an up and coming issues, only rising in importance. While AHBs can have a role here, ultimately it will be up to the large construction supply chain to work on this and some stakeholders felt this was not under AHB remit.

4. Renewable energy

Important for new builds and future proofing them. Also highlighted that while important for older stock, it is less important than installing insulation first, in a fabric first approach. There was no real comments regarding AHBs using renewables at scale, or purchasing at scale via a PPA.

“Reduce wasted energy first, then decarbonise heat and then solar is the cherry on top.”

“Local production and distribution of clean energy would be fantastic if we could get there.”

“If planning is done correctly, and that is a big if, it shouldn't be an issue.”

5. Climate risk - physical

The general consensus was that if planning is done correctly this shouldn't be a huge issue for AHBs despite the long time horizon for owning an asset.

“Not that high an issue until an incident happens.”

6. Climate risk - transitional

Within transitional risks it was policy risks which ranked the highest, with a focus on potential minimum BER ratings for landlords and targets around retrofitting. Investing in the wrong technology now could also lock AHBs and tenants into fossil fuel systems for years.

“Such a big issue at the moment.”

“Policy and regulatory risk is the big one but it should be well signposted in advance.”

“Why would you replace a gas boiler at the moment, while it does make a short term impact it ultimately exposes renters to a risk staying on gas.”

7. Fuel poverty

“Could make this a 10 out of 5 - with the current environment few things are as important as this.”

Addressing fuel poverty is the top of the agenda for AHBs and this message was consistently reinforced during stakeholder engagement. The cost of living crisis during 2022 has only accelerated the desire to act on fuel poverty this is the main driver for retrofitting older stock.

“Important for tenants not to have to spend a huge portion of their disposable income on energy.”

8. Water management

Managing water across AHB properties, while important, was considered to be of less importance compared to carbon emission climate issues and social ones.

“While it is an important issue, compared to the other it is less important.”

“It shouldn't be AHBs core priority beyond compliance.”

9. Air and noise pollution

“Impact of air source heat pumps on tenants a lot of humming could be an issue with noise.”

While it is consistently scored low, there was a comment about the noise associated with heat pumps and how some residents had been affected. Air pollution was said to be important but regulations should take care of it.

“I'm hearing no issue with noise in relation to heat pumps. Air quality is important as it's a health issue.”

10. Indoor environmental quality

This is seen as a legacy issue for some older stock. It is clearly an important issue and the improvements in indoor air quality after retrofitting a home is clear, especially with tenants who have respiratory issues.

“There are clear findings of the positive impact of improved air quality post retrofit on people with COPD and other respiratory issues.”

“Demographics of tenants who may not own cars make this issue even more important.”

11. Sustainable transport

A common theme of responses for this issue was that tenants in social housing are more likely not to have access to a car which make a sustainable transport linkage key. Housing needs to be in accessible areas.

12. Waste management

Waste management wasn't ranked highly and nor did stakeholders feel that during construction AHBs have the capability to move the needle.

“Important environmentally, less important to AHBs to tackle.”

“Don't build in flood planes! It's critical and part of the planning process.”

“It's a historic issue.”

13. Flood risk (non-climate related)

Some potential confusion from stakeholders about flood risk which was highlighted as a separate issue from physical climate risks. Most felt it was critically important to address, and while there is due diligence and planning process in places, and even insurers checking flood planes, the risk is still ranked highly due to its devastating nature and financial implications.

“ Aimed at new builds. ”

“ Should be built in as practice and a chance for the State to set best practice example. ”

14. Green infrastructure (for climate resilience)

Green infrastructure was ranked in the lower priority bracket and stakeholders felt it was firmly aimed at new developments rather than retrofitting older ones. There was an overlap between green infrastructure, biodiversity and land use issues retrofitting older stock.

15. Biodiversity

A chance for AHBs to engage tenants with the benefits of biodiversity with common green areas etc.

“ Regardless of where the building is built, biodiversity is so important. ”

“ Good way to engage tenants. ”

“ It's a balancing act homes need to be build somewhere. ”

“ It's a hygiene factor, essential but it should be taken care of in the planning process. ”

16. Land use

Very important for AHBs, however there is limited impact to make when purchasing turnkey developments. Many also felt suitable land use and development sites should only be available if they pass the vetting and planning process.

17. Sustainable procurement

A common statement from stakeholders was that this was important from a public expenditure perspective. AHBs can take action, but if the government wants to accelerate change, then mandating public spending to sustainable procurement is key. This is a conversation which is just starting to gather momentum.

“ Very important for public expenditure. ”

“ Thinking about it in the context of buying power and linking it back to government funding. It is critical that sustainable procurement is embedded in where government money is being spent, driving change across the sector. Need everyone in the sector to change need systemic change. ”



“It’s still cheaper to raise a building to the ground and start from scratch than retrofit in cases.”

18. Circular construction

Circular construction for AHBs is seen as important, but complications arise over funding. Stakeholders felt sometimes economically it still doesn’t make sense and without clear funding channels, it’s difficult for AHBs to choose the circular option.

“Nothing going to happen without finance.”

“Allocation of money doesn’t line with target objectives and future vision.”

21. Financing for a Just Transition for AHB

The key issue for AHBs and how they are able to transition to a low carbon economy. The lack of funding, the lack of a revenue stream on older assets and the lack of understanding from different sources are big issues of frustration for AHBs.

“We can’t borrow against older units due to the income associated with those units being differential rent no cash flow.”

19. Sustainable innovation

Clearly, AHBs have a role to play as a government backed test bed for sustainable innovation at scale. Modern Methods of Construction (MMC) and other innovations can address the three big issues facing the housing sector currently in Ireland: cost, carbon and time efficiencies.

“We don’t get any funding for innovation and this results carrying on building as is we need a plan for the future.”

“All tech needs to be considered to achieve climate targets.”

“Greater utilisation of Modern Methods of Construction would be great hit 2 or 3 with one stone efficiencies, cost, carbon. And achieve delivering at a cost effective level.”

22. Green certifications/labels

This was seen as theoretically very important but in practice the impact of green certs is limited. This will be market driven and currently within the social housing landscape the main metric of use is BER ratings.

“The sector has to comply with BER and aim as high as we can.”

“A lot of people fear change and AHBs can play a role in educating tenants.”

20. Climate resilient communities

What is the role for AHBs to support tenants as we transition to 2050. Often people are scared of change so education and engagement is key for AHBs to act on.

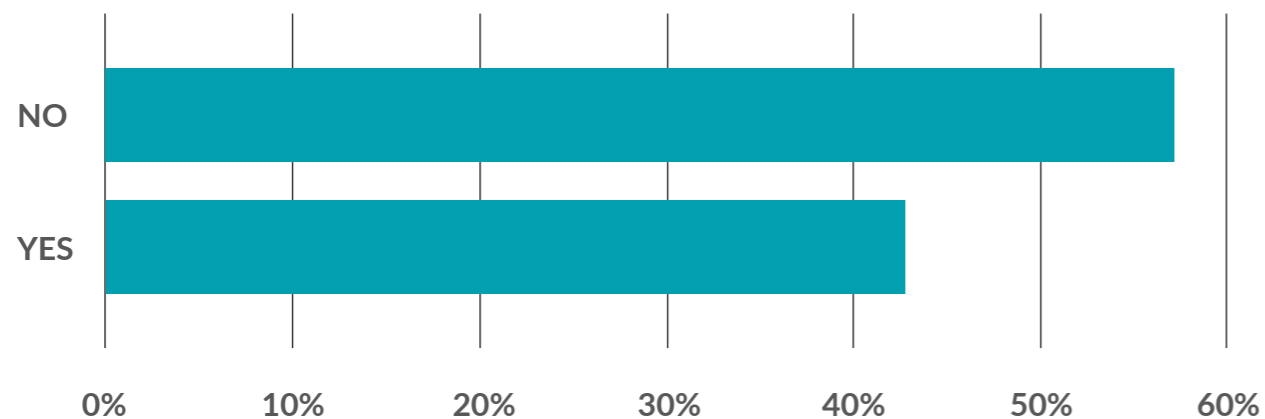
“Tenants need to know about how to optimise performance of equipment.”

4.4: Analysis: additional insights from AHB specific queries

The following are responses to additional questions that AHBs responded to as part of the survey.

On finance for new builds:

In relation to new builds, have you approached or accessed third party finance (e.g. banks or energy efficiency funds etc)?



On finance for retrofits:

43% Have utilised SEAI funding

Those who didn't utilise SEAI funding planned to progress grant applications for pilot projects in late 2022 and others have had to prioritise using their funding to address other pressing issues e.g., historic defects. Those who did avail of grant funding used their cashflow to "match fund" but will have to recoup this money from other sources in order to pay off loans when they fall due.

What is the main reason why you are not accessing third party debt for retrofits:

"Whatever we borrow, we have to pay back. There is no funding stream available to pay back any borrowings."

On actions and plans:

100% Aiming for a B2 during retrofit

Of the 7 AHBs that responded 100% aim for a B2 when completing a retrofit and 83% aim to complete retrofit in one project phase.

100% Ready to collaborate

All AHBs that responded are ready to collaborate on projects to test and trial innovative approaches/materials for construction & retrofit.

86% Engage with residents on environmental issues

This engagement ranges from newsletters and talks to consultation on future planned developments. Biodiversity is a common engagement topic.

71% Want to train and upskill staff in 2023

This is on sustainability and climate issues. There could be an opportunity for Housing Alliance members to collaborate and share resources for employee training sessions.

43% Have an environmental policy

It is potentially timely that this research is being completed as it may be a helpful document for any other AHB wanting to develop an environmental policy.

100% Have taken waste reduction measures already

At their own offices and sites. The next most popular measure taken was improving the energy efficiency of their offices.

5: Findings & Insights from Interviews

Overview of findings and insights from stakeholder interviews and survey comments



1. Discussions centred on energy retrofits and challenges to finance

Most conversations centred around the practical issues related to retrofit, particularly the financial aspects. There is an increasing focus on decarbonising AHBs existing housing stock but the AHB funding landscape gives rise to significant challenges for the AHBs in accessing public or private debt to fund retrofits. There is a divergence in views between government stakeholders and the AHBs on this point and this needs to be resolved to move forward.



2. The focus is shifting from saving energy costs to positive climate action

Stakeholders highlighted the link between energy efficiency and fuel poverty. Even if there were no climate crisis, cost efficiency is always a focus for this sector. While more recently there has been an increasing focus on decarbonising housing stock for climate action purposes, there is a clear understanding that it will only happen with appropriate funding.



3. Decarbonisation is an opportunity to end fuel poverty

Diverging perspectives on fuel poverty were heard. On the one hand, fuel poverty is just poverty, and it is out of the hands of AHBs to solve. On the other, with the right policy interventions and approach, decarbonisation is a unique opportunity to eliminate fuel poverty for good.



4. AHBs are ideal aggregators for retrofit projects

AHBs are attractive strategic partners for Government and contractors alike. By aggregating projects, AHBs can create real economies of scale and enable the supply chain to scale up. Some AHBs will need support to do so from Retrofit One Stop Shops, but larger ones already have those characteristics within their organisations.



5. AHBs can drive green procurement practices

AHBs have significant buying power and can drive change within the supply chain. This, in addition to the technical ability of larger AHBs, gives characteristics of a OSS model.



6. There are retrofit supply chain challenges

AHBs are impacted by supply chain issues, e.g. materials, equipment and labour shortages. While some of these issues are beginning to stabilise, there are still challenges regarding cost and access to labour. Skills shortage in the construction sector has a knock on impact on the AHB sector.



7. New regulations on EV charging has financial implications

Changes to Part L of the Buildings Regulations, require AHBs to install ducting for electrical cables to power EV chargers for (a) all new builds and (b) if a building is undergoing a major renovation, which involves renovation to the car park/ electrical cables of the car park. While grant funding is provided to cover most of the installation costs, once commissioned AHBs will not generate enough revenue from charging fees to cover the cost of ongoing maintenance.



8. Rolling out new technology has quality and skills implications

There is a requirement for AHBs to install heat pump technology when building a new home or retrofitting an existing. However there are knowledge gaps in relation to the practical installation, maintenance and repair of this technology. There are also practical issues in terms of their use, particularly for tenants using pre pay meters.



9. AHBs need support to maximise supports available for their retrofit projects

Some feedback was provided that smaller AHBs can “leave value on the table” regarding energy efficiency/retrofit contracts. Most are not aware of the opportunities to leverage the Energy Efficiency Obligation Scheme (EEOS) and the supports available from energy.



10. Behavioural change to reduce energy consumption will be key

The conversation is shifting from physical work to retrofit properties to encouraging behavioural change. It was highlighted that engagement programmes both at a tenant and employee level are critical. There is only so much that can be done on fabric.



11. AHB efforts should focus on retrofits, not on driving carbon standards in new builds

While driving climate standards higher is important, this should not be the role of AHBs. That said, there is a natural role for AHBs in climate related innovation as there are both environmental and cost efficiency benefits and using AHBs as a test bed.



12. Limited awareness that embodied carbon is becoming an issue

AHBs are not being challenged to tackle embodied carbon, and there was also strong pushback that this should be a priority. The sense is that the market might step in. However, there is a growing awareness that the conversation is moving to the whole life of carbon emissions for the residential sector, and in time AHBs will have to tackle embodied carbon.



13. Limited discussion around role of renewable energy

As noted, the immediate focus is to provide energy efficient homes. There was limited conversation on the role of renewable energy sources and how that fits into portfolio decarbonisation plans.



14. Climate related physical and transition risks should be on AHB board agendas

Existing planning legislation has kick started adaptation to physical climate risks, e.g. not building on flood plains. Consideration should also be given to transition risks, e.g. introduction of minimum energy performance standards and appropriate measures to manage those risks.



15. Innovation should be seen as an enabler

Strong push that the sector needs to embrace innovation even if it is to try things out now so that the sector has capacity/volume in the future. Innovation is seen as a way to tackle multiple issues, i.e. off site construction tackles labour shortages, brings efficiencies and reduces environmental impact. The caveat is that innovation requires government funding, and AHBs are not ideally resourced to be experimented on.

5.1: Discussions centred on energy retrofits and challenges to finance

A long list of environmental issues had been identified but most conversations centred around energy retrofit and in particular, the financial aspects relating to retrofits.

While the immediate focus is on building new homes in response to the housing crisis, there is an increasing push for AHBs to also focus on decarbonising AHBs existing housing stock. 'Must try harder' was a phrase used.

There is a clear divergence in views between the AHB sector and the public sector on the source and availability of finance for retrofits.

Public sector stakeholders refer to the SEAI grant (and EEOS support) as being sufficient to stimulate retrofit, and to the fact that AHBs will own these valuable assets in the end. They also refer to the large cash balances in AHBs and to their ability to access private debt and/or debt from the HFA.

However the AHB sector states that cash balances are required for and ringfenced to new homes, and that there is lack of cashflow on older homes to raise private capital for retrofits. The sector also refers to Local Authority (LA) getting 100% grants whereas they only get partial grants.

While there is definite private investor and lender interest in new (BER A rated) social housing which by definition ticks both social and green boxes for them, there is more limited interest in retrofits. It is more challenging due to the cash flow and gearing issues referred to by the sector.

“There is a clear appetite for the sector from lenders.”

“We cannot borrow against older units due to the income associated with those units being differential rent there is simply no cash flow to secure the debt.”

5.2: The focus is shifting from saving energy costs to positive climate action

Stakeholders highlighted the link between energy efficiency and fuel poverty, even if there were no climate crisis, cost efficiency is always a focus for this sector. While more recently there has been an increasing focus on decarbonising housing stock for climate action purposes, there is a clear understanding that it will only happen with appropriate funding.

“The reality is that climate action in the AHB sector will only happen if retrofitting finance is aligned with the principles of the 'just transition', which means exchequer funding at scale and via flexible mechanisms.”

“Carbon is a critical issue for AHBs especially when thinking about older stock.”

5.3: Decarbonisation is an opportunity to end fuel poverty

We heard diverging perspectives on fuel poverty. On the one hand, we heard that fuel poverty is just poverty and it is out of the hands of AHBs to solve this challenge. Helping tenants reduce energy consumption will help minimise fuel poverty but won't eradicate it. On the other, with the right policy interventions and approach, it was noted that decarbonisation is a unique opportunity to eliminate fuel poverty for good.

Under either scenario, if AHBs ensure that homes are well insulated, tenants will have to turn the heat on less. Installing heat pumps also helps reduce the reliance on volatile priced fossil fuels. AHBs could help install renewables at scale which could result in tenants having to purchase less energy from the grid and generate some of it themselves instead.

“Fuel poverty is just poverty.”

5.4: AHBs are ideal aggregators for retrofit projects

AHBs are attractive as strategic partners for Government, contractors and lenders alike. By aggregating projects, AHBs can create real economies of scale and enable the supply chain to scale up. Some AHBs will need support to do so from Retrofit One Stop Shops, but larger ones already have those characteristics.

There are huge benefits to being an aggregator, both in terms of costs and other efficiencies, which given the current situation where costs are increasing, it makes a huge amount of sense to act on.

As aggregators, AHBs have the potential to redeploy saved capital towards climate related additions. Ultimately the mandate of social housing is to provide affordable homes and utilising a position as an aggregator is a way to achieve this mandate.

“Big contractors like aggregation so would like AHB contracts really good piece for the AHBs.”

5.5: AHBs can drive green procurement practices

AHBs have significant buying power and can drive change within the supply chain. Given that AHBs receive Government funding (through HFA and LAs), they can be strategic partners to accelerate change nationwide where they adopt green procurement practices. This is a conversation which is just beginning to gather momentum and may not directly reach AHBs otherwise.

For larger AHBs, it means the procurement stage becomes increasingly important, putting in place sustainable procurement policies and ratcheting up in ambition over time.

“Need everyone in the sector to change how they approach procurement need systemic change.”

5.6: There are retrofit supply chain challenges

AHBs are impacted by ongoing supply chain issues, including material and labour shortages and rising costs. The shortage of construction materials and equipment is due to a number of reasons. Not least the fact that many material and equipment manufacturers are battling escalating energy costs. So if materials are available, they are often more expensive, have long lead times and it is not always possible to source the most environmentally sustainable product. However, at the time of publishing this report, there are signs that material shortages and prices are stabilising.

Furthermore, the skills shortage in the construction sector has a knock on impact on the sector, delaying critical work.

For AHBs, the implication from supply chains pressures is the same for the rest of the construction sector. Potentially AHBs should consider Modern Methods of Construction as one approach to mitigate supply chain risks.

“Costs are rising on all materials, it’s impacting what we can do.”

5.7: New regulations on EV charging has financial implications

Two new sets of regulations were passed in 2022 that have direct implications for AHBs. The first is an amendment to ‘Part L’ of the Building Regulations, requiring the installation of ducting infrastructure (consisting of conduits for electrical cables) for electric vehicle (EV) charging. These regulations apply to all new buildings and to any multi unit building that is undergoing a major renovation, where the renovation includes the car park or electrical infrastructure of the car park. (Source: Irish Statute Book)

SEAI grants can cover a significant proportion of the costs, but once the charge point is live, the AHB won’t capture enough revenue from charging to cover ongoing maintenance costs, as very few AHB tenants have electric vehicles.

“From a resource perspective, it does not make sense for an AHB to pay for infrastructure if there is no demand for it.”

5.8: Rolling out new technology has quality and skills implications

The government plans to install 400,000 heat pumps by 2030, and AHBs will be required to install heat pumps in new builds and in properties being retrofitted. Heat pump technology, while it is not a new technology, has not been installed at scale in Ireland and so there are technical challenges both in terms of quality of the available technology and the skills required to install it.

Many AHBs cited a lack of consistency in the quality/guidance on heat pump technology from different manufacturers which makes it difficult to manage installation, repairs and maintenance.

AHBs also noted that there is a need to regularise the technical requirements related to the installation of heat pump technology, as it relates to local authorities. For example, Dublin City Council requires a much larger water tank than other local authorities.

Finally, AHBs noted that many of their tenants use pre-pay meters and if their meter runs out of credit then they have no heat and the AHB maintenance team will have to physically go to the property and reset the heat pump.

“There’s a domino effect when tenants are without heat and the technology is not understood, it can be difficult to find expertise to fix it.”

5.9: AHBs need support to maximise supports available for their retrofit projects

Some feedback was provided that smaller AHBs can “leave value on the table” regarding energy efficiency/retrofit contracts. Most are not aware of the opportunities to leverage the Energy Efficiency Obligation Scheme (EEOS) and the supports available from energy suppliers.

All AHBs should be encouraged to engage with the SEAI to ensure they are maximising the grants available and also engaging with energy suppliers who have a duty under the EEOS to assist in retrofitting the social housing stock.

When grants from SEAI don’t cover communal areas or the cost of scaffolding for installing a heat pump to apartments, it was recommended that the Housing Alliance should be used as a body to inform government in order to address these inconsistencies and issues for all AHBs.

“New EEOS requirements will be significant, resulting in larger savings.”

5.10: Behavioural change to reduce energy consumption will be key

The conversation is shifting from physical work to behavioural work. There is a sense that engagement programmes both at a tenant and employee level is critical. There is only so much that can be done on fabric.

From the survey, it is clear that AHBs already engage with tenants on sustainability issues. However, there is not consistent knowledge across all AHBs as to sources of carbon emissions and where energy wastage arises.

For AHBs, this will mean further engagement with tenants to ensure their energy use is efficient. It will also mean training for all staff on sustainability to upskill them so they can bring that knowledge into their day to day operations.

“Tenants need to know about how to optimise performance of equipment.”

5.11: AHB efforts should focus on retrofits, not on driving carbon standards in new builds

While driving climate standards in new construction is important, this should not be the role of AHBs. AHBs should focus their ask for climate action finance on retrofits not on incremental costs for new builds. It is not up to AHBs to spend precious funds on driving new building standards higher unless provided with extra funds to do so.

That said, AHBs can justify a focus on climate related innovation as there are both environmental and cost efficiency benefits, so innovation as an enabler of delivery of a climate proofed AHB sector should stay on the table, provided funding is available. See the Welsh case study provided in Section 3.8.

“Greener homes generally have a higher unit costs.”

5.12: Limited awareness that embodied carbon is becoming an issue

Related to the above point, embodied carbon is an emerging issue for the construction and property sector generally, with an increasing focus on the topic over the last number of years as carbon footprint measurement and climate action targets across the sector have extended to include Scope 3 emissions.

To date, AHBs are not being challenged to tackle embodied carbon, and there was a strong pushback in interviews that this should be a priority. The sense is that the market will need to step in to tackle this, with large construction companies needing to address it.

The consensus was that AHBs should be assessing contractors during tendering processes for their knowledge and processes in place to reduce the embodied carbon of new builds. There will be a balance to strike in the interim if a building with lower embodied carbon has a higher price associated with it and this will have to be assessed by the AHBs on a case-by-case basis.

“For AHBs, at the moment this isn't as important as operational carbon emissions from their housing stock.”

5.13: Limited discussion around role of renewable energy

While it is clear that renewable energy will have a huge role to play if the sector is to decarbonise, there was limited conversation on the role of renewable energy sources and how that fits into portfolio decarbonisation plans.

“On the radar of AHBs, and they are building in but not seeing the benefit of going beyond building regs?”

5.14: Climate-related physical and transition risks should be on board agendas

Existing planning legislation has kick started adaptation to physical climate risks, e.g. not building on flood plains.

There was some awareness of the need to put in place measures to manage climate related transition risks also, e.g. rising carbon taxes, the introduction of minimum energy performance standards for rented buildings etc.

For AHBs, managing key transition risks will require getting a handle on their housing stock in terms of BER ratings and operational emissions data. This is also an opportunity for AHBs to fully understand their portfolio at a granular level and analyse it to move forward. AHBs, should expect minimum BER standards for leased properties to be introduced in the next number of years, with a carbon budget ceiling also expected to be assigned to AHBs.

Climate related physical and transition risks are also drivers of risk around access to finance, with increasing focus from lenders and investors on carbon emissions of housing portfolios alongside decarbonisation plans.

“AHBRA should be asking AHBs about climate related financial risk once up and running fully.”

5.15: Innovation should be seen as an enabler

There is a strong push that the sector needs to embrace innovation, even if it is to try things out now so that the sector has capacity/volume in the future and as a way to tackle multiple issues.

Using modern methods of construction (MMC) could result in big efficiency gains across labour, time, carbon and costs. There is a huge opportunity for AHBs to be a test bed to unlock potentially new materials and methods to deliver social housing to people at a cheaper cost and that contains less embodied carbon. Innovation is not just restricted to MMC and materials, other examples include ideas like EnergyCloud, which is diverting surplus renewable energy to Clúid tenants.

The caveat is that innovation requires government funding and AHBs are not ideally resourced to be experimented on. For AHBs, this means engaging with government and SEAI for funds around innovation and sharing learning between each AHB to collectively achieve your goals.

“Greater utilisation of Modern Methods of Construction would be great hit 2 or 3 issues with one stone efficiencies, cost, carbon.”

Examples of Government Funding for Innovation under the Pathway to Zero Project in Wales.

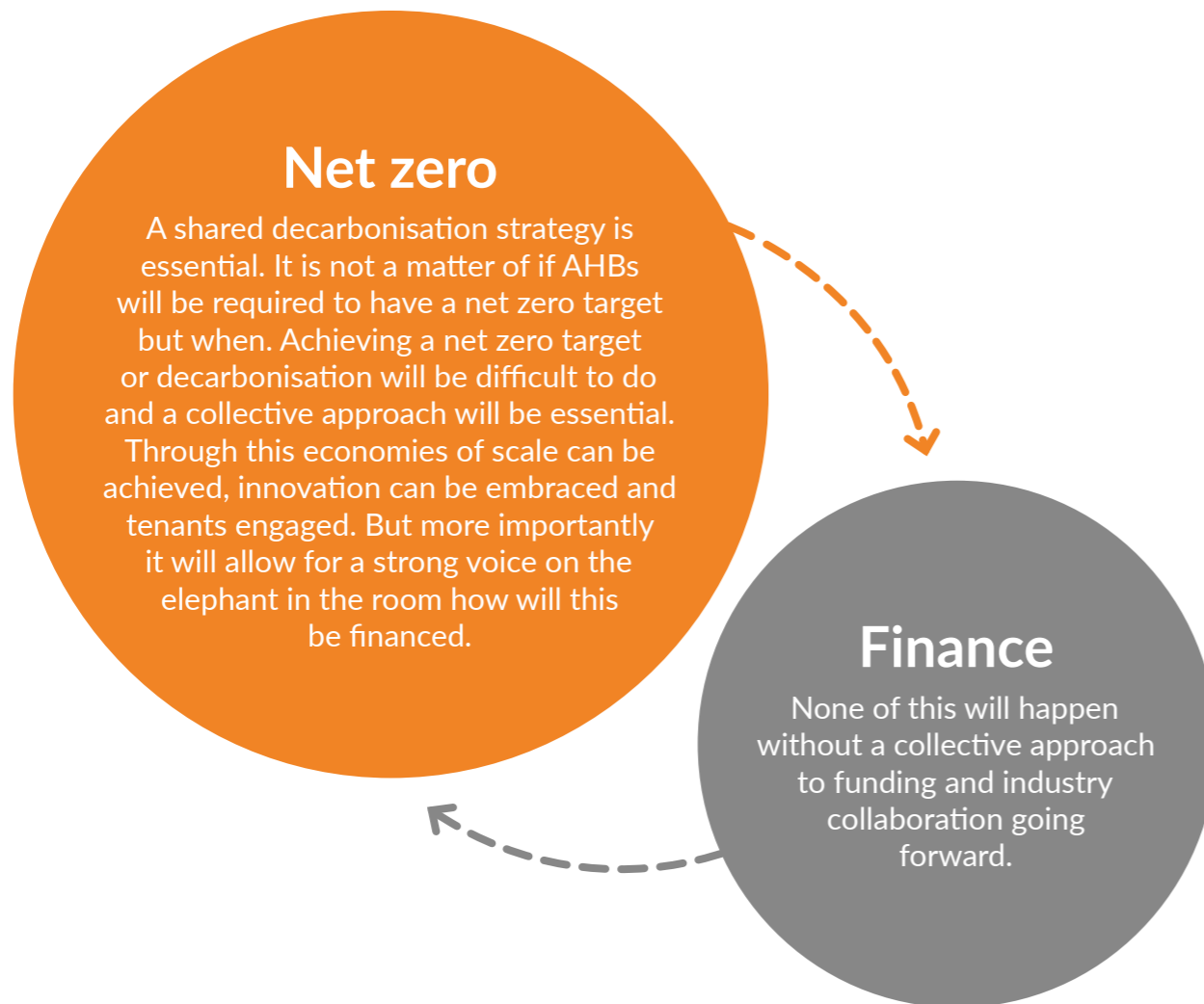


ClwydAlyn housing association could be the first in the UK to deliver net zero whole life carbon, with renewable energy offsetting the carbon impact of production and construction. Homes will have air source heat pumps, solar power and intelligent batteries with heating and lighting costs estimated at less than £80 a year.



Swansea Council will build 25 homes to the 'Swansea Standard', a lowmcarbon, energy efficient specification with solar panels, designed to achieve low running costs for tenants.





6: Recommendations

The objective of this Project from the outset was that it would enable the Housing Alliance to provide environmental leadership in social housing to advance climate action goals. Based on the research and stakeholder engagement carried out as part of this report, our recommendations are that the Housing Alliance should:

1

Set the agenda for the AHB sector by **agreeing an ambitious common decarbonisation target, aligned with national targets**. See Section 6.1 for an illustrative commitment and related framework to support delivery.

2

Spearhead the development of a **Decarbonisation Guide for AHBs** to support the delivery of targets and commitments, i.e. effectively building out the high level framework shown in Section 6.1. For a simple overview of the 4 key dimensions to support the sector's decarbonisation, see Section 6.2. For a relevant example to leverage, see the UK National Housing Federation Guide see Section 6.3.

3

Establish a Housing Alliance climate action working group, a networking group where members can together learn, collaborate and develop innovative solutions to the challenges and opportunities involved with delivering climate targets for the sector.

4

Engage immediately with public sector stakeholders to ensure that the **challenges to raising private or public finance for retrofits** are understood, and the full suite of potential solutions is identified and assessed. See section 6.4 for an overview.

5

Carry out an **assessment of the cost to retrofit** (including installation of EV chargers) older stock across the AHB sector portfolio, with a view to using this to inform engagement with key stakeholders. See Section 6.5 for further detail.

6

Engage with public sector and industry stakeholders to tackle practical technical, quality and cost issues, e.g. with the **Heat Pump Association** with respect to quality, with **Educational Training Boards** regarding skills and with **SEAI** for technical guidance for energy technology (i.e. design specifications, commissioning, maintenance).

7

Engage with the public sector to explore how AHBs could be used as **innovation test beds**. See Section 3.8.

8

Consider adopting **standardised ESG reporting** to allow for ease of information sharing and the opportunity to showcase the sector and highlight sectoral impacts and challenges potentially using the UK Sustainability Reporting Standards for Social Housing. See Section 3.6.

9

Commit to ensuring that **climate related financial risk** a standing item on Board agendas and put in place appropriate governance, risk management and oversight arrangements. Adopt the TCFD Recommendations. Engage with AHBRA to understand its agenda on climate related financial risk. Engage also with statutory auditors on the topic. See Section 3.4.

6.1: Illustrative Commitment and Strategy Delivery Framework

Ambition Statement

We, as AHBs will work together towards a net zero emissions target, from our operations and our homes, by [X Date]

3 Pillars

Retrofit the old

Reduce operational energy

Source renewable energy

Sample Actions

- Retrofit all properties to a BER B2 by 2035
- Remove fossil fuel boilers from all homes

- Measure whole carbon footprint of business
- Reduce own operational energy use

- Purchase renewable energy at scale via a Corporate PPA
- Install renewables on site whenever possible

Enablers

Finance

Innovation

Engagement

6.2: Overview of 4 dimensions for AHBs to consider in net zero plans

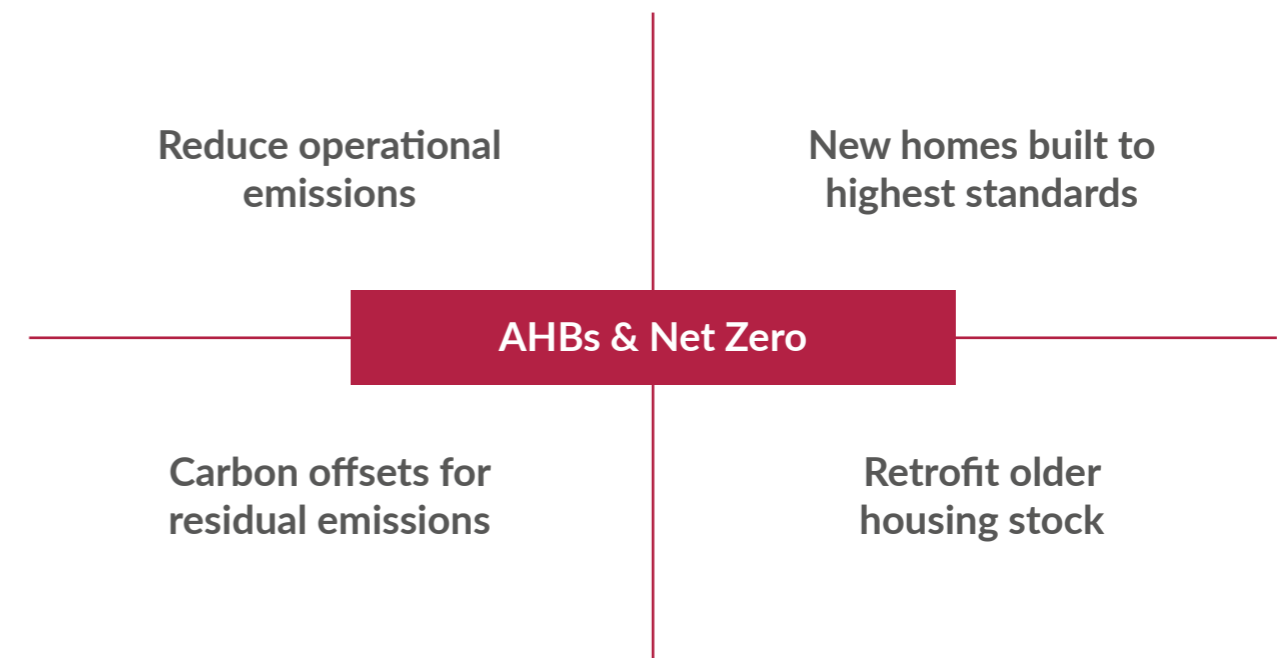
For an AHB and its housing stock to be net zero, it must consider four dimensions:

1. Reduce operational emissions to as close to zero as possible. This is within AHB's control and ultimately should be achievable. Necessary actions will include removing fossil fuel boilers/generators from office sites, installing and/or purchasing renewable electricity for offices, using EVs for all business journeys and trying to fly as little as possible.

2. Design and construct all new homes to the highest standard. From a regulatory perspective, all new dwellings must be designed and constructed to Nearly Zero Energy Building (NZEB) standard by 2025 and Zero Emission Building (ZEB) standard by 2030. AHBs should ensure the properties purchased today are future proofed by not having fossil fuel boilers, and minimising embodied carbon.

3. Retrofit older housing stock. The energy performance of the older housing stock will ultimately need to be brought up to a B2 or higher and fossil fuels boilers replaced with heat pumps.

4. Verified carbon offsets. Once the reduction of emissions has been maximised, the final step is to offset the remaining emissions by purchasing high quality, verified carbon offsets. Offsets should only be used once all possible efficiencies and emissions reductions have been made.



6.3: Decarbonisation: a guide for housing associations, UK National Housing Federation, 2021

Phase	Timeframe	Suggested actions for housing associations
One: Planning and scoping	0-2 years	<p>Understand the energy efficiency of and heating technologies in your current stock through a thorough assessment.</p> <p>Ensure your organisation is equipped with the practical and strategic expertise to deliver decarbonisation programmes by undertaking an internal skills and resource audit, upskilling and recruiting new staff where necessary. Key areas may include energy efficiency surveyors, procurement specialists, resident engagement experts and those able to support government grant applications.</p> <p>Begin to engage residents in developing your strategy and plans to improve the energy efficiency of their homes and discuss the potential for new clean heating systems.</p> <p>In line with the government's Clean Growth Strategy, create your own bespoke plans that aim to make all your housing stock rate at SAP 69/EPC C or better by 2030, focusing on using fabric first insulation measures.</p> <p>Build on this by devising plans to transition appropriately insulated homes to low carbon heating systems. Explore potential to deploy on site renewables and other energy-saving measures such as smart meters.</p> <p>Consider halting any current plans to remove hot water cylinders from existing homes - future electrical heating is more efficient with hot water storage.</p> <p>Establish annual monitoring procedures to measure progress against decarbonisation targets. Third party environmental consultancies may provide an element of independent verification for these reports.</p> <p>Start to work towards including retrofit costs in 30-year financial plans and explore the role of government grants and other funding mechanisms.</p> <p>Consider partnerships and consortia with other local landlords to pool resources, access funding and maximise procurement potential. In the early stages this will be for planning retrofit programmes and project management.</p>

Phase	Timeframe	Suggested actions for housing associations
Two: Trialling and testing	1-3 years	<p>Start retrofit projects focused on 'no regrets' options, e.g. fabric insulation improvements. Review and learn from works especially with newer technologies. Focus on fabric measures to ensure future clean heat technologies are going to be operating at their most efficient and affordable to the resident.</p> <p>Carry out 'stepping stone' trials on heat pump systems in homes where the highest possible energy improvement measures have been made. Identify properties that are suitable for heat pumps using current electricity and gas prices. These are likely to be off-gas properties fuelled with Liquid Petroleum Gas or other systems which have good fabric insulation. This is because the running costs on these archetypes are most likely cheaper with heat pumps than the current heating system. Highly energy efficient new builds may also be viable.</p> <p>Work closely with residents to support them with getting the most out of their new technology, ensure they are accessing all relevant funding support and support them to identify the best tariffs, energy suppliers and deploy supportive technology such as smart meters and on site renewables.</p> <p>You can also trial low carbon heat networks where available.</p> <p>Initiate study to establish the cost savings to your organisation of more environmental properties. These should include reduced maintenance costs, reduced voids and rent arrears, as well as potential added.</p> <p>asset values. Use this data to support business cases for future retrofit programmes.</p> <p>Establish procedures and methodologies to confirm that retrofitted homes actually achieve the energy efficiency to which they are designed. This could include post-occupancy evaluations and smart thermostats.</p>

Phase	Timeframe	Suggested actions for housing associations
Three: Implement full energy efficiency work	4-6 years	<p>Establish plans for annual deep retrofits to meet targets and increase levels of retrofit work across remaining stock.</p> <p>Consider plans to integrate energy efficiency improvements with regular component replacement work. For example, if a roof needs replacing, incorporate a solar panel, top up loft insulation and extend the eaves, if it is known that the home will need external insulation sometime in the future.</p> <p>Consider establishing Energy Service Company (ESCo) to benefit from solar panels, battery storage and new generation technologies. This will increase value for money and give landlords more control over the price of the electricity they supply.</p> <p>Review battery storage technologies and the opportunities they present to residents and the organisation.</p>

(Source: National Housing Federation)

6.4: Finance for retrofits

6.4.1: The Retrofit Finance Challenge for AHBs

- **AHB cash reserves** arise due to the fact that P&A income is to cover **lifecycle costs** for those homes and repayment of the CALF loan at the end of the P&A agreement so must build up over time.
- Furthermore, to the extent the cash reserves in AHB balance sheets were raised from HFA/private finance sources, the **cash may be legally ringfenced** to the homes they were raised against and cannot be used for retrofitting older homes that were financed under older schemes. Even if not legally ringfenced, from a corporate governance and risk management perspective, cash balances must be built up to repay the (up to 30%) CALF loan at the end of the P&A agreement and to provide for lifecycle costs.
- **AHBs cannot borrow against homes financed under the older grant schemes.** They can only borrow based on cashflows and the only income relating to those older homes is differential rents so these homes already have a negative cashflow after costs. AHBs cannot borrow simply based on the value of the home as there is no cashflow to service the debt.
- In addition to the above points, our understanding is that there are **legal charges against the homes** in favour of either the HFA or the local authority (LA) or both. This makes additional charges on the assets for private finance purposes more difficult.
- Unlike LAs, AHBs are subject to **company law, accounting standards (accruals basis), debt covenants, the AHBRA, potentially the Charities Regulator and others** which mean there are requirements and limits as to how they operate and how they manage financial risk. **The Board has strict company law and fiduciary duty obligation.** AHBs need to be financially viable in the long term and cannot cross subsidise retrofits when income/funding has been raised for other purposes.
- **Partial SEAI grants and EEOS supports may be part of the solution, but the balance of the retrofit costs should also come from the Exchequer** in our view this is only fair and equitable given the LAs can access 100% finance for their social housing retrofits.
- We have set out opposite some potential solutions for consideration. assess how best to advance on an issue.

6.4.2: Potential Solutions for further review:

100% grant	Through SEAI/EEOS supports Upfront cost for the Exchequer; No additional debt for AHBs
P&A type arrangement so AHB can borrow	Government drip feeds finance over X years to the AHBs under a P&A type arrangement AHBs can then use as income to raise private debt Cost to Exchequer spread over years Additional debt for AHBs but repaid through government funding
Convert CALF loan to equity so AHBs can borrow	Government converts CALF loans to equity/non-repayable loans This would firm up the balance sheets for the AHBs and allow them raise additional finance. Should be no additional cashflow cost to the Exchequer (but is there an accounting/balance sheet issue?) Reduces the AHBs debt liabilities.
Link to offshore wind community funds - grants	Offshore wind projects required to establish community funds Really nice link to decarbonisation, just transition etc Would effectively be grant funding No cost to Exchequer; no debt for AHBs But a timing issue - not payable until projects operational - from 2030 onwards
Income stream from tenants	See Section 6.4.3 for further detail EnergieSprong type idea AHBs as energy manager Solves the split incentive issue also But are these ideas legally or practically possible?

6.4.3: Could an income stream be generated from tenants?

There are examples of AHBs that have generated additional income from tenants. The 2013 Co operative Housing Cherrywood project from 2013 (see section 3.8) is one example where tenants made a financial contribution to the retrofit project via their rents. The **EnergieSprong** model (see figure below case study on p. 82) is similar.

An innovative option proposed in the Ritterwald 2022 **Sustainable Housing Outlook** paper is that AHBs become energy managers.

While this would also enable income stream generation, Ritterwald suggest that a principal reason social housing providers should become energy managers is that 'social housing tenants are amongst the most vulnerable in society and are acutely exposed to the cost of living crisis.' By stepping into the role of an energy manager, social housing providers are best placed to manage further cost issues. Ritterwald suggests three energy manager models (see figure opposite below).

All proposals to generate an income stream from tenants to subvent the cost of an energy retrofit would need to be thoroughly assessed from a legal and social perspective.

	Harnessing Buying Power Pooling tenants' heat demands to improve supply costs and emissions	Heat-as-a-Service Entering the energy market depending on own risk and competence profile	Energy Service Company Partnering with a service provider for energy (efficiency) solutions
Tenant engagement	high – to keep demand pool above threshold level and expand over time	medium to low – as energy supply hardly affects tenants apart from tariff policy	high – support for retrofitting process and outcome required
Contribution to net zero	high – potential to fully decarbonise heating and largely eliminate scope 3 emissions	high – potential to fully decarbonise heating and radically improve heating technology	high – necessary first step to reduce energy consumption and install more efficient heating technologies
Financial viability	no CAPEX, limited amount of OPEX for supplier negotiations and demand pool maintenance	significant amount of CAPEX and OPEX – depending on chosen model	no CAPEX, amount of OPEX needed depending on the scope of services procured
Feasibility	medium – set-up of demand pool and supplier procurement is resource intensive	hard – significant learning curve required with regards to energy market	medium to hard – prioritisation of stock and retrofitting measure needed plus dedicated project team to support ESCo
Yield	low to medium – new revenue stream when sharing price benefit with tenants	high – proceeds can be redirected to cross-finance retrofit, safety and new built schemes	low – as long as landlord tenant conundrum not solved

Complexity

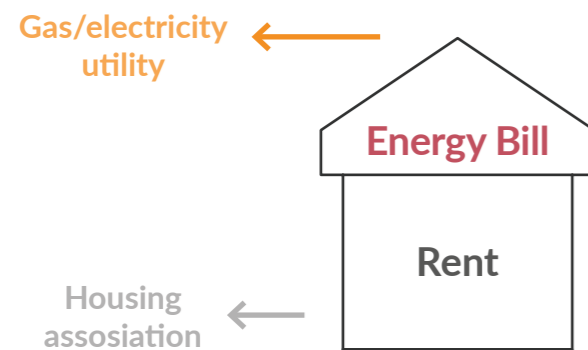
Overview of social housing providers' operational energy models for heat supply. (Source: RITTERWALD)

EnergieSprong Case Study

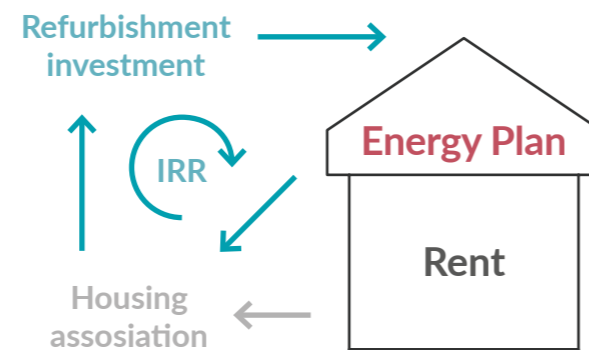
EnergieSprong is a Dutch developed whole house refurbishment and funding approach for achieving net zero homes. Launched in the UK social housing market, it is designed to unlock zero carbon retrofit at scale, partly paid for by energy and maintenance savings and delivered by a new high tech industry with guaranteed actual performance, comfort and costs long term.

Because homes no longer have a gas bill after one of these retrofits, housing associations can charge tenants a 'comfort plan' equal to or less than the previous bill, enabling the landlord to gradually recoup its initial investment with tenants guaranteed a warm, comfortable home. As an example of a retrofit with a revenue stream, this model could be scaled with private finance.

Before Refurbishment



After Refurbishment



6.5: Assess the cost of achieving net zero in the residential sector

The cost to retrofit a home will depend on several factors, but the average is approx. €50,000. The Government provides up to 50 % grants for private homeowners and private rental landlords and 100 % funding for social housing retrofit. Though their funding models differ, the purpose of AHBs is aligned with that of local authorities with respect to social housing.

According to the Climate Change Advisory Council, "the state will have to pay for retrofitting the social housing stock which it owns. If two thirds of the cost assumed here were to fall on the state, this would require the spending of between €1 billion and €1.5 billion a year over the period 2026 2030 to achieve the necessary target on retrofits." (Source: [Climate Change Advisory Council](#))

A key recommendation of this project is that it would be worthwhile to assess the cost of retrofitting the entire stock of the AHB sector to BER B2. The purpose of doing so is to highlight the significant numbers involved and to provide an evidence base to the sector to progress discussions with public sector stakeholders about the financial challenges involved.

The 2021 UK Savills report is an excellent guide. (Source: [Savills](#)) This October 2021 report links decarbonisation with reducing fuel poverty and improving tenant comfort. The report explored the costs associated with reaching net zero in social housing homes. Assuming that the grid is decarbonised by 2050, the base scenario examined looked at improving installing and the fabric performance of the building first, before replacing fossil fuel boilers with electric options like heat pumps.

The base case cost came to £36bn to decarbonise existing UK social housing (in addition to current stock investment plans) and would cover the costs of bringing the 39% of housing association homes which need to be brought up to EPC C (approx. equivalent to a BER of B2), as well as installing heat pumps and other clean heat technologies in all 2.7 million homes.



Appendix: Environmental Issue Definitions

Definitions

Carbon emissions	Reducing GHG emissions, including carbon, across the construction and management of AHB's properties and schemes.
Embodied carbon	Reducing the embodied carbon of new developments and retrofits. Embodied carbon is caused by extraction, manufacture and transport of materials, construction on site, maintenance, replacement, deconstruction and end of life emissions of the materials and systems that make up a building. Encouraging retrofitting versus demolition/constructing new buildings is one practice to reduce embodied carbon.
Energy management	Reducing energy consumption across properties/portfolios and improving BER ratings, for example through smart replacement strategies, energy efficiency measures (e.g. insulation, LED lighting), and use of technology (e. smart meters or thermostats).
Renewable energy	Using renewable energy to power the properties and schemes in AHB's portfolio. Renewable energy can include the use of solar PV/thermal on individual properties or the use of district heating for multiple properties. AHBs have the potential to facilitate the development of renewable energy communities.
Climate risk - physical	Operational/financial risks and opportunities to AHBs from the physical impact of climate change, such as floods and intense storms damaging property, delaying construction and other supply chain disruptions.
Climate risk - transitional	Operational/financial risks and opportunities to AHBs from changes in policy, markets and technology as the economy/society responds to climate change, e.g. new building regulations on energy/carbon, carbon pricing, increased insurance costs, building obsolescence.
Fuel poverty	Enabling the Just Transition for AHB residents by improving the energy performance of properties Energy efficiency improvements will help address fuel poverty by reducing the amount of energy required to heat/power a home.

Water management	Reducing water consumption across AHB's properties and schemes through water management (e.g. water meters) and conservation measures (e.g. rainwater harvesting) and through the installation of water efficient fixtures and fittings. Also ensuring residents have access to good quality drinking water.
Air and noise pollution	Implement practices that reduce, eliminate, or prevent air and noise pollution at its source before it is created during the construction and maintenance of properties.
Indoor environmental quality	Ensuring healthy indoor environments across housing stock, i.e. good airflow and ventilation, reduced exposure to radon gas and other soil contaminants, low VOC emission paint, adhesives, sealants etc.
Sustainable transport	Ensuring that residents have access to good public transport links, cycle pathways and EV charging infrastructure so as to make it easier for them to choose sustainable travel and transport options. Observing '15 minute City' as a model which is socially accessible for all.
Waste management	Reducing waste across AHB's existing properties through effective maintenance and repairs and by enabling and encouraging recycling and composting. Also, reducing waste in the construction of new homes by designing out waste across the lifecycle of the home and choosing more sustainable materials.
Flood risk (non climate related)	Taking steps to protect AHB's existing properties from flood risk and ensuring any new developments are not located on floodplains/in areas of high flood risk.
Green infrastructure (for climate resilience)	Including 'green infrastructure' to help AHB properties/schemes adapt to climate change. Green infrastructure refers generally to a system of natural and engineered green spaces that provide ecological and social functions and they have a role in helping urban areas/developed lands be more climate resilient. Examples of green infrastructure include water butts/rainwater harvesting, green roofs, permeable pavements, rain gardens, bioswales and integrated constructed wetlands.
Biodiversity	Improving native biodiversity and green spaces by planting indigenous species of plants/trees and taking steps to protect local wildlife. Maintaining green spaces with minimal use of chemicals like herbicides and pesticides.
Land use	Minimising the environmental damage of land development by carefully selecting sites on which to build new housing developments and avoiding any areas of high biodiversity value.

Sustainable procurement	Incorporating the concept of sustainable procurement into AHB's procurement policy and sourcing i.e. sourcing goods and services that have a reduced social and environmental throughout their life cycle compared to alternative products/solutions. Also sourcing from suppliers with positive environmental credentials and/or from local suppliers.
Circular construction	Closing the building material loops by reusing, sharing, leasing, repairing, refurbishing, upcycling or recycling rather than continuing the traditional take make consume dispose process. Achieve this by considering how to maximise the lifespan and reusability of entire buildings or materials at the very start of the design process e.g. designing out and building new homes using sustainable materials (e. FSC wood, recycled materials), using sustainable methodologies (e. modern methods of construction) so as to reduce waste and carbon emissions over the whole lifecycle of the home/development.
Sustainable innovation	Enabling the development of new and retrofit low/zero housing by applying innovative technologies (e.g. smart home systems), advanced materials (e.g. concrete that can sequester carbon) and innovative approaches (e.g. modern methods of construction) across the system to make it more sustainable.
Climate resilient communities	Empowering communities to live in environmentally sustainable ways. Communicating the benefits of energy and water efficiency and involving residents in caring for the natural environment (e.g. maintaining landscaped areas). Facilitate access to resources such as community renewable energy, allotments/community gardens.
Financing for a Just Transition for AHB	Enabling AHBs to be part of Ireland's Just Transition through the provision of sustainable and affordable housing for all by ensuring the availability of state funding, and where possible encouraging innovative lending and investment products for social and affordable homes for both retrofit and incremental CAPEX on energy efficiency measures in new build homes.
Green certifications/ labels	Achieving green certifications/labels for new homes/developments whether for compliance issues or to achieve AHB's own strategic objectives or in response to requests from investors/lenders.

SustainabilityWorks.

About SustainabilityWorks

SustainabilityWorks is a mission-driven consultancy that works with businesses to accelerate Ireland's shift to a sustainable future. The SW team has decades of experience working across different sectors on a range of environmental and social issues. Their multi-disciplinary approach combines expertise in sustainability strategy, finance, policy, communications and innovation, working with organisations across the private, public and non-profit sectors. We make sustainability **simple**. We make it **actionable**. We make it **work**.

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**An Ghníomhaireacht
Tithíochta**
The Housing Agency