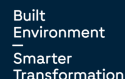


# Meeting Scotland's Retrofit Challenge: solutions from the industry

This document and the recommendations it outlines have all been developed and are supported by the following organisations:



# Introduction

As the Scottish Government has recognised, meeting Scotland's net zero targets will require significant increases to the pace and scale of retrofit projects being undertaken across the country.

Increasing attention is being placed on renewable technologies to achieve net zero targets.

However, retrofit is a complicated, multi-faceted, cross-portfolio challenge for which there is no single, silver-bullet solution.

Furthermore, the effectiveness (warmth) and economics (cost) of clean heat solutions such as heat pumps, heat networks, and direct electric are determined by building fabric. Installing these systems in housing that is in disrepair and/or inefficient risks leaving households with higher energy bills to heat draughty homes.

As such, the prevailing focus on clean heating systems, in the absence of a comprehensive policy landscape that foregrounds a 'fabric first' approach poses risks to the quality and condition of the built environment, undermines our ability to ensure a Just Transition, risks worsening fuel poverty rates and, ultimately, poses risks to public health.

In May 2023, representatives from across the built environment sector met for a 'Retrofit Roundtable' alongside elected officials at Scottish Parliament to discuss Scotland's retrofit challenges and consider solutions.

Following on from initial discussions, an informal group of industry representatives (referred to here as the 'Retrofit Roundtable') has continued to meet regarding issues related to retrofit.

This document has been co-designed by organisations represented at the Retrofit Roundtable meetings to highlight the unique challenges being faced in the widescale uptake of retrofit projects and to identify opportunities to remove or mitigate barriers.

Joined-up, holistic policymaking will be needed to reach our collective targets and ensure that our existing buildings are warm, energy efficient and promote the health and well-being of all who live in and use them.

In the spirit of the collaborative approach that must be taken to tackle the retrofit challenge the Retrofit Roundtable has come together to identify solutions and encourage Government to do the same.



## Key Recommendations

This briefing, and the Retrofit Roundtable group, encourage Scottish Government to take urgent action to strategically meet Scotland's retrofit challenge, making the following key policy recommendations:

### Establish a Ministerial Oversight Group on Retrofit.

Retrofit is a complicated, cross-portfolio issue. We will not be able to meet our objectives by working in silos. As Scottish Government recently recognised with the development of their Ministerial Oversight Group on Homelessness, complex policy challenges require collaborative working. We therefore urge Scottish Government to establish a Ministerial Oversight Group on Retrofit to bring together the relevant ministers to think holistically across the wider system. This group should identify the short- and long-term resources and programmes needed to facilitate widescale retrofit projects and capitalise on the opportunity to work across portfolios to achieve shared goals across the policy landscape.

### Develop, through the Ministerial Oversight Group on Retrofit, a long-term Retrofit Delivery Plan with a joined-up approach to funding, regulating and incentivising retrofit work across Scotland.

This Retrofit Delivery Plan should:

Use the Ministerial Oversight Group to establish cross-departmental funding and scope.

Address existing barriers and bring together multiple strands of policy and programming.

Provide clarity of funding across public and private investment.

Establish long-term targets and measurement tools that are fit-for-purpose and driven by evidence.

Establish the scope of funding eligibility to ensure that retrofit works can be tailored to the needs of each building.

Focus on the 'how' of achieving Scottish Government decarbonisation and energy efficiency targets, with clarity surrounding sources and levels of funding.

This must include consideration of the human resources needed, with the necessary skills, and experience, to undertake these projects properly, without compromising quality, and at the scale and pace needed.

This plan must be designed in collaboration with industry partners.

# What is retrofit?

## Defining retrofit

Retrofit projects are those through which “existing buildings are changed to improve their energy efficiency and reduce emissions.”<sup>1</sup>

Domestic retrofit interventions include improving floor, wall and roof insulation, upgrading windows and doors, installing more efficient and low carbon heating sources and systems (such as Ground and Air Source Heat Pumps) and may extend to the installation of renewable energy generation and storage and EV charging.<sup>2</sup>

## Order is important: repair, insulate, generate (see figure 1)

It is vital that a building is in good repair before retrofit work takes place.

At present, over half of the homes in Scotland don't meet what is considered a good level of energy efficiency.<sup>3</sup>

There is little point for a property owner to invest considerable amounts in renewable energy if the property itself is not fuel efficient and, critically, could risk increasing energy bills at a time when many households are facing fuel poverty.

As such ‘fabric first’ is encouraged as a best practice approach to retrofit.

Fabric first approaches are those which prioritise heat conservation, including repairs, and improvements to insulation, draught-proofing and ventilation, before making changes to heat generation, like installing renewable technologies such as air source heat pumps.

There are many benefits to accompanying fabric first<sup>4</sup> approaches with the installation of renewable energy generation and storage solutions to maximise energy independence and reduce carbon footprints.

As Scottish Government has recognised, a good standard of energy efficiency means we use less energy, reducing greenhouse gases and, critically, helping households to save on their energy bills and reducing rates of fuel poverty.<sup>5</sup>

Figure 1  
**Hierarchy of retrofit:**  
taking a fabric first  
approach



1. Gibb, K., 2022. “Retrofitting the UK Housing Stock: what lessons from Scotland?” Economics Observatory.

2. Centre for Local Economic Strategies, 2022. A roadmap to decarbonisation, p. 14.

3. Scottish Government, 2023. Delivering Net Zero for Scotland's Buildings, p. 14.

4. Built Environment-Smarter Transformation, 2023. Energy Efficiency Market Analysis and Economic Opportunity Assessment, p. 13.

5. Scottish Government, 2023. Delivering Net Zero for Scotland's Buildings, p. 18.

# What do we do?

## Our Approach.

The specific approach taken for each retrofit will vary greatly. Even within the 'fabric first', whole-home framework, the specifications and state of each building are the deciding factors in the most appropriate approach.

We need to be flexible about what successful retrofit projects look like; ensuring policies, programmes and funding streams allow for the consideration of the individual circumstances arising in each project and neighbourhood and support a variety of approaches, materials, and reasonable measures to be undertaken as is best suited for each building and project.

Conducting whole-home assessments prior to undertaking retrofit projects will help to identify the most effective retrofit measures on a case-by-case basis, ensuring a targeted approach that optimises both energy efficiency and cost-effectiveness. There are many drivers for retrofit works from changing the use of a building, to replacing heating systems at the end of their life. Given the significant increase in retrofits required to meet net zero targets, it is imperative that, from now on, any time work is being done to a home or building, it is taken as an opportunity to undertake wider retrofit works and planning for future projects in order to get closer to our net zero objectives.

## Challenges

Meeting increasingly stringent energy efficiency standards will not be possible or practical in some circumstances. Variations in housing type, tenure and location in Scotland may present a significant barrier to retrofitting works as rural, off-grid properties will require a bespoke package of works to ensure retrofit viability. Similarly, tenements are often considered difficult-to-treat properties<sup>6</sup> that may also require a tailored set of measures to secure the best possible outcomes for energy efficiency as are possible and practical.

Establishing the correct course of action requires flexibility and will vary from project-to-project and neighbourhood-to-neighbourhood. We need to ensure we have enough people with the skills and training necessary to support homeowners in identifying the correct approach in each specific situation and geographic region of Scotland. Localised planning for retrofit will be needed.

Currently, the industry is facing skills shortages in critical roles across the sector that impact all areas of work and, as such, hinder the sector's capacity to undertake widescale retrofit projects. These shortages extend to specialist roles, such as retrofit coordinators.

This shortage of specialist roles puts the quality and suitability of retrofit works at risk. It is imperative that all retrofit projects undertaken are as effective as possible for the home as well as taking opportunities to support the wider grid and infrastructure. For example, if direct electric heating is supported as good practice, this should be accompanied by measures such as battery and/or thermal storage to combat fuel poverty and reduce demand on the grid.

## Solutions

Develop and adopt a typology model, based on data and evidence, for retrofitting existing building stock. This will allow practitioners to easily and readily engage with 'best practice' examples and plans for retrofit projects based on the specifications of the building.

Develop tools in collaboration with representative industry bodies to support expanding consumer awareness and understanding of retrofit works. This will support development of consumer retrofit project plans, facilitating a 'fabric first' approach where possible, and ensure incentives are in place to promote confidence and provide choice. This will empower consumers to make decisions for their unique project/circumstances that are aligned with industry best practice and stand the test of time.

Work with industry to develop frameworks and expand accreditation requirements to ensure that those who undertake work are suitably qualified and competent to carry out any design or installation work and that they hold appropriate accreditations and insurances.

6. There is ongoing, industry-led work in this space. The Scottish Parliamentary Working Group on Tenement Maintenance has been meeting since March 2018 with the purpose of establishing solutions to aid, assist and compel owners of tenement properties to maintain their buildings.

# How to we measure our performance? The challenges with EPCs

An EPC – energy performance certificate – is used to provide an indication of the energy efficiency of a building, with rating from A (very efficient) to G (inefficient). Despite the heavy reliance on EPCs when setting regulatory standards, concerns have been raised throughout the industry about the accuracy and suitability of EPC ratings.

## Challenges

EPC ratings are currently not fit for purpose. For instance, they fail to consider elements like varying wall thickness, so buildings are often rated below their actual energy efficiency levels.

As Scottish Government continues to develop policies that rely on EPC ratings as the sole measure of energy efficiency in our homes,<sup>7</sup> this raises serious concerns about the quality and efficacy of the retrofit projects that may be undertaken to meet regulations.

## Solutions

Reform EPC assessment criteria, engaging with industry to agree upon a comprehensive methodology for carbon assessment.<sup>8</sup> This methodology should consider the opportunities available to use smart meters and other sources of data, including 3D modelling and thermal heat mapping, to feed into the modelling process and improve its accuracy.

With consideration to the limitations outlined with the current EPC frameworks, establish a 10-year mandate for performance standards to provide clarity and long-term direction for consumers and the industry about the regulatory environment in which retrofit works are undertaken.



7. Scottish Government, 2023. Delivering Net Zero for Scotland's Buildings.

8. Industry-led frameworks have developed that include metrics for energy efficiency measuring such as the Royal Institution of Charter Surveyors (RICS) Whole-Life Carbon Assessment for the Built Environment.

# Meeting the retrofit challenge

Scotland's built environment needs to be retrofitted at a greater scale and pace than ever before if we are to meet our net zero, energy efficiency and fuel poverty targets. As the Scottish Government has recognised, heating our built environment is the third-largest cause of greenhouse gas emissions in Scotland and meeting our net zero targets will require a significant reduction in emissions".<sup>9</sup>

The industry broadly supports Scottish Government's ambitious climate change targets, but the road ahead is unclear, and many questions remain unanswered.

## Funding & delivery

Retrofit is a complicated issue, and delivering these works at the pace and scale needed requires adequate planning, resource (both financial and human) and cross-portfolio collaboration. Funding and delivery are critical elements of meeting the retrofit challenge and are currently presenting problems.

## Challenges

- Siloed, short-term thinking has hindered our collective ability to ramp up retrofit works, and requires urgent action and Government intervention to change.
- 'Patchwork' retrofit funding is fragmented and complicated.
- Funding levels are insufficient, relative to the scale of the problem and the costs of retrofit projects.
- Programme design problems and limited awareness are limiting uptake of existing funding streams.

## Solutions

### Establish a Ministerial Oversight Group on Retrofit

Retrofit is a complicated, cross-portfolio issue. We will not be able to meet our objectives by working in silos. As Scottish Government recently recognised with the development of their Ministerial Oversight Group on Homelessness, complex policy challenges require collaborative working. We therefore urge Scottish Government to establish a Ministerial Oversight Group on Retrofit to bring together the relevant ministers to think holistically across the wider system. This group should identify the short- and long-term resources and programmes needed to facilitate widescale retrofit projects and capitalise on the opportunity to work across portfolios to achieve shared goals across the policy landscape.

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### This Retrofit Delivery Plan should:

- Use the Ministerial Oversight Group to establish cross-departmental funding and scope.
- Address existing barriers and bring together multiple strands of policy and programming.
- Provide clarity of funding across public and private investment.
- Establish long-term targets and measurement tools that are fit-for-purpose and driven by evidence.
  - Establish the scope of funding eligibility to ensure that retrofit works can be tailored to the needs of each building.
  - Focus on the 'how' of achieving Scottish Government decarbonisation and energy efficiency targets, with clarity surrounding sources and levels of funding.
  - This must include consideration of the human resources needed, with the necessary skills and experience, to undertake these projects properly, without compromising quality, and at the scale and pace needed.
  - This plan must be designed in collaboration with industry partners.

Meeting Scotland's retrofit challenge will not be easy, and change does not happen overnight. We stand ready and willing to work alongside Government to design and implement policies and programmes that will help tackle the retrofit challenge.

9. Scottish Government, 2023. Delivering Net Zero for Scotland's Buildings, p. 1.

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Built Environment  
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Smarter Transformation

