Consumer Scotland
Luchd-Cleachdaidh Alba

Converting Scotland's Home Heating

Growing consumer confidence in the market for low-carbon technologies and energy-efficiency measures

JUNE 2025

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Foreword

The transition to net zero is one of the defining challenges of modern times. In Scotland, converting how we heat our homes will be key to meeting our climate commitments. This is not simply a matter of replacing technologies – it is about ensuring that change works for people and benefits us all as consumers. Embedding consumer interests at the heart of this transition is not optional – it is fundamental.

David Wilson
Chair

Sam Ghibaldan
Chief Executive

Over two million homes in Scotland will need to transition to low or zero-emissions heating over the next two decades. There are significant benefits, given the generally poor energy efficiency performance across Scotland's building stock. For many households, this will mean navigating a complex and unfamiliar sector—often at significant cost and with real risk of disruption. This journey must be made simpler, safer, and fairer.

Consumer Scotland was established to be a strong, evidence-led voice for consumers. This report delivers on that purpose. It provides clear, practical recommendations to help ensure that consumers are empowered, protected, and supported through every stage of the transition—from initial decisions, to installation protections, to redress when things go wrong.

We hope that this report will contribute to the development of government policy and to improvements in consumer protections. In particular, we expect the proposals set out in the Scottish Government's forthcoming Heat in Buildings Bill to provide an important opportunity to align our climate ambitions with the need for greater fairness and accountability in the home energy retrofit sector. Success will depend not just on action from governments – but coordinated action from regulators, industry, and consumer bodies working in partnership.

If we get this right, the benefits will be far-reaching: lower emissions, reduced fuel poverty, and warmer, more efficient homes. This report is an important step toward making that vision a reality.

Executive Summary

Converting Scotland's Home Heating

Cutting carbon emissions to meet UK and Scottish Government targets demands a large-scale shift to zero-emissions heating across Scotland's homes. With buildings accounting for around 20% of total emissions, this transition will require significant investment in low-carbon technologies – such as heat pumps, electric heating systems, and heat networks.

Success will depend on supporting consumers at every stage of the journey: with fair and accessible funding, clear and reliable information, and access to a trusted sector underpinned by robust consumer protections. However, current evidence suggests that adoption is progressing significantly slower than necessary, with overall consumer confidence in the sector lagging.

THE PURPOSE OF THE INVESTIGATION

This report presents the findings of Consumer Scotland's investigation into the energy efficiency and low-carbon technologies sector. It was launched to explore how effectively the sector supports and protects consumers against the backdrop of Scotland's legal commitment to achieving net-zero emissions by 2045.[1]

Achieving the climate targets will place significant responsibilities on consumers—particularly to improve home insulation and adopt low-carbon heating technologies. This shift demands high levels of consumer engagement in markets that are often complex, unfamiliar and fraught with challenges. While the potential benefits are significant, consumers also face substantial financial and practical risks.

This investigation therefore forms part of Consumer Scotland's statutory advocacy role—to strengthen consumer trust, reduce harm, and support informed, sustainable decision-making in the transition to net-zero.

Responsibilities for energy efficiency and low-carbon heating fall between a mix of devolved and reserved powers. In April 2025, the Scottish Government set out plans for a forthcoming Heat in Buildings Bill, expected to be introduced later this year. The Bill aims to retain the 2045 target for decarbonising home heating but with a greater focus on making the transition affordable, flexible, and fair – especially for those in fuel poverty.

Prior to launching this work, evidence from stakeholders suggested that the sector is fraught with risks and challenges that consumers must navigate. The aim of the investigation is therefore to identify how it can function more effectively for consumers. This is essential if they are to develop the confidence needed to engage with the sector at the scale required in the years ahead.

Under the Consumer Scotland Act 2020, Consumer Scotland may undertake investigations into sectors or practices, *"which it considers causes, or may cause, harm to consumers, or otherwise for the purpose of fulfilling our general function"*.

In July 2024 this investigation was launched with the following remit:

"Consumer Scotland will examine a range of issues, including whether consumers have access to:

- *high quality and accessible sources of advice and information*
- *strong consumer protections*
- *fair and affordable consumer incentives*
- *competitive and clear product choices*

As part of the review, Consumer Scotland will issue a call for information across the sector to gather evidence on existing practices.

Following the investigation, Consumer Scotland will make recommendations to help deliver the necessary protections and confidence for consumers to decarbonise and improve their home energy efficiency".

The focus was therefore on the issues facing consumers in domestic properties in Scotland. Drawing on expert evidence from consumer groups and sectoral stakeholders - and building on our growing evidence base on attitudes to net zero and barriers to the uptake of low-carbon technologies – we examined the key challenges encountered by consumers. This work did not review issues in the social rented sector or the non-domestic (business) sector, nor did it evaluate the merits of specific public grants and support schemes.

In line with our statutory obligations, this report sets out the findings and recommendations of the investigation. These are based on views gathered through engagement with consumer, business, and partner organisations.[2] Consumer Scotland looks forward to working with governments, regulators and sectoral bodies in delivering these solutions.

THE SCALE OF THE CHALLENGE

Carbon-intensive heating is the third-largest contributor to Scotland's greenhouse gas emissions. To meet carbon reduction targets, the Climate Change Committee estimates that CO_2 emissions from residential buildings must fall by 66% between 2023 and 2040.[3] According to the Committee, this will require a rapid increase in consumer engagement and the widespread adoption of low-carbon heating and energy-efficiency measures. The financial costs will be significant; the Scottish Government previously estimated that, in total, it would cost c.£33 billion to convert all of Scotland's building stock to zero emissions by 2045, with the average total cost to convert a home to a heat pump around £14,000.

The Scottish Government has announced revised plans to publish a Heat in Buildings Bill in late 2025. The Bill is expected to create the basis for the rollout of energy efficiency and low-carbon technologies, alongside measures to support and incentivise consumer uptake.

Chapter 2 of this report considers the scale of the challenge to reduce carbon emissions from home heating in Scotland. Its key findings include:

- **Climate concerns have barriers to actions:** Whilst the majority of consumers are genuinely concerned about climate change, cost, uncertainty, and disruption are major barriers to uptake of renewable energy and insultation technologies.
- **There's an energy efficiency gap:** Over half of all homes in Scotland do not have a good standard of energy efficiency where this is measured by the fabric efficiency of the building (how well the fabric of the building retains heat).
- **The heat pump rollout is lagging:** Heat pumps are likely to represent a key part of the solution for replacing fossil-fuel heating systems. Currently however, domestic heat pump deployment remains low, with around 8,000 being installed in Scotland in 2024. As context, the Climate Change Committee has indicated that, for residential buildings to play their part in meeting the Committee's balanced pathway for Scotland to reach Net Zero by 2045, annual heat pump deployment would need to increase to nearly 35,000 in 2030 and exceed 120,000 by 2035.

- **Heat networks offer potential solutions:** In the right locations and circumstances, heat networks provide significant opportunities for consumers to utilise more efficient and decarbonised heating than traditional 'gas grid supply' heating systems. Currently, only around 30,000 homes are connected to heat networks in Scotland, whilst statutory targets in the Heat Networks (Scotland) Act 2021[4] set targets equivalent to connecting 120,000 homes from the gas grid to a heat network in 2027 and 400,000 homes by 2030.[5]

Meeting Scotland's low-carbon home heating goals at scale depends on earning consumer confidence. That means making the requirements clearer, reducing upfront costs, and ensuring all solutions are convenient to adopt. The following findings and recommendations set out how to achieve this.

FINDINGS AND RECOMMENDATIONS SUMMARY

Our key findings and recommendations to support and improve confidence are grouped around three key aspects of the consumer journey.

1. **Enabling households to engage confidently in the low-carbon heat transition.**

Despite widespread concern about climate change, this has yet to drive large-scale adoption of low-carbon heating technologies. Many consumers remain unclear about which options suit their homes—and are further deterred by fears of disruption and high upfront costs.

Raising awareness of home heating's role with net-zero targets - and thus demand - requires targeted campaigns to inform, engage, and help address concerns to achieve meaningful actions. When consumers do engage, they should access trusted advice and information, supported by smooth processes reflecting their individual household and personal needs. For example, the planned reforms to energy performance certificates are a welcome chance to shift from passive ratings to practical, trusted information that empowers consumers to make improvements.

Government schemes which reduce upfront cost barriers are central to enabling uptake. The range of support at present may be confusing and should be mapped to ensure impact, coverage and suitability for all consumers - particularly those in fuel poverty and vulnerable circumstances.

2. **Strengthening consumer confidence through clear standards, protections, and robust enforcement.**

Confidence will only grow if consumers are protected and clearly guided through the transition. Experience has shown that government schemes risk enabling rogue traders who misrepresent technologies and seek to exploit public funding. Scams, misleading marketing, and rogue trading continue to hamper the sector and are currently met with an inadequate response. Enforcement needs bolstered to ensure that the significant public investments are not lining the pockets of bad actors – in doing so damaging the very consumer confidence they are intended to enhance.

The sector is largely self-regulated through standards bodies, certification rules and consumer codes - all of which individually play vital roles in protecting consumers and public funds. However, collectively they present a fragmented landscape—marked by multiple schemes and logos—creating confusion and undermining overall confidence. The opportunity to simplify the system should be taken, including consideration of a single standards body to bring greater clarity to all consumers —regardless of how they finance their transition.

3. **Establishing straightforward and accessible systems for remediation and redress when things go wrong.**

The sector is complex and confusing for consumers. This is also reflected in a patchwork of dispute resolution schemes that leave consumers unclear about their routes to redress - which trader may be accountable for their losses - or which body should offer support when things go wrong. This is especially problematic when traders leave the market or cease to be properly certified to a relevant standards body.

A review of the sector should consider simplifying routes for redress, with a single and accessible process and trusted alternative dispute resolution body. This will give all consumers the necessary confidence that, when things go wrong, their investments are protected.

CONCLUSION

Delivering a successful transition will require coordinated action across the Scottish and UK Governments, regulatory bodies, local authorities, and industry stakeholders. The principal challenges identified include ensuring the fair distribution of transition costs, providing consumers with clear and actionable guidance, enabling convenient means of engagement, and, critically, securing consumer confidence. These 'four Cs elements'—cost, convenience, clarity, and confidence—should form the foundation of any consumer-focused approach to the sustainability transition.[6]

We have sought to identify a set of outcomes that are required, as well as specific recommendations to the relevant and appropriate organisations. These are summarised in the table below, with greater details provided in the next chapter.

> **"the Government have inherited a fragmented and confusing system of protections for people who want to insulate their homes—too many organisations with different roles and responsibilities, not enough clarity for consumers about who to turn to if things go wrong… The system is in dire need of reform."**
>
> **Commons statement – ECO4 and Insulation Schemes Wednesday 29 January 2025**

The Transition in Numbers

Net zero by 2045

Scotland's legally binding climate target

2.4 million homes need to decarbonise their heating

66% reduction

in carbon emissions from buildings by 2040 [7]

1.5 million homes

do not meet a good standard of energy efficiency - as measured by their 'fabric' efficiency

34%

of households in Scotland in fuel poverty [8]

of adults in Scotland are concerned about climate change [10]

400,000 homes

to be on heat networks by 2030 – Only 30,000 at present [9]

Heat pump

installations need to reach around 35,000 per year in 2030 and exceed 120,000 per year by 2035 [11]

Key findings	Summary Recommendations
1. Enabling consumers to engage in the market	
Actionable guidance: Energy Performance Certificate reforms are welcome as EPCs don't fully empower consumers to make the sustainability changes required.	**Recommendation 1** - The Scottish Government should make Energy Performance Certificates clearer and more action-focused, supported by robust quality and enforcement systems.
'Clean' heating Awareness: Clear, inclusive public engagement is essential to increase uptake of low-carbon heating.	**Recommendation 2** -The Scottish Government should lead inclusive campaigns around benefits, choices, and support - to empower consumers around the home heating transition.
Independent advice: Access to impartial guidance—like the Home Energy Scotland service —is crucial.	**Recommendation 3** - As demand increases, the Scottish Government should ensure consumers have access to trusted, independent advice.
Financial support: High upfront costs make public support essential. Fair and accessible funding will be key to sustaining demand.	**Recommendation 4** - By the end of 2026, the Scottish Government should review consumer funding for impact, fairness, and effectiveness - and streamline processes to remove unnecessary barriers.
2. Building consumer confidence in the sector	
Consumer protection: Poor workmanship, rogue traders, and scams remain key risks. Confusion and misrepresentation of government funding schemes undermine trust.	**Recommendation 5** - The Scottish Government, working with sector partners, should deliver a robust Quality Assurance and consumer protection policy to build confidence and protect consumers.
Simplified Systems: Complexity creates confusion around quality and accountability (e.g. overlapping schemes, codes, rules and logos) and undermines consumer confidence.	**Recommendation 6** - The UK Government's Warm Homes Plan review should cover all low-carbon technologies to simplify the landscape. It should also consider a single standards and accreditation body with potential regulatory oversight.
Sharing Intelligence: Standards bodies hold key data, but perceived legal barriers may impede sharing details of bad actors.	**Recommendation 7** - Standards and relevant enforcement bodies and regulators should explore improved collaboration and data sharing to help detect and prevent poor trading in the sector.
Universal protections: Consumers who 'self-fund' do not get the same protections as those under government-funded schemes.	**Recommendation 8** - The UK Government should ensure all traders - regardless of funding source - be accredited to ensure consistent consumer protections.
3. Delivering Accessible and Effective Remedies for Consumers	
Resolution pathways: Confusing redress routes and accountability gaps cause problems for consumer complaints, especially when traders exit the market.	**Recommendation 9** - In line with the Warm Homes Plan review (Rec 6), complaints systems should be reviewed thoroughly. Clear and accountable processes, financial protections, and universal ADR with binding decisions would improve outcomes.

Report at a Glance

This section sets out the recommendations in full, each of which follows a specific finding. The delivery of each recommendation will enhance the delivery of the others, forming a mutually reinforcing package of measures to improve the consumer journey.

Main findings and recommendations

MAXIMISING THE IMPACT OF ENERGY PERFORMANCE CERTIFICATE REFORMS

Energy Performance Certificates (EPCs) have the potential to be powerful tools to improve the energy efficiency and heat decarbonisation of Scotland's home. However, they are currently hindered by methodological flaws and presentational weaknesses.

The Scottish Government is reforming the content, design, and supporting operational framework around EPCs.[12] The aims of these reforms are welcome. They will shift the focus from cost-based measurements to insulation efficiency and lower carbon emissions, improve accuracy, and make EPCs more accessible and relevant. The changes present an opportunity to overhaul the market for assessment, quality assurance, and enforcement.

However, the reformed documents need to effectively inform and empower consumers to take action on the basis of a completed EPC. It is also important that the reformed process is underpinned by robust quality assurance and enforcement to enhance the reliability and effectiveness of the EPC system.

RECOMMENDATION 1 – Unlock the consumer benefits from EPC reforms

In developing a revised EPC framework, the Scottish Government should ensure that EPCs empower consumers to take informed action. This can be achieved by presenting clear, accessible information on the EPC itself, alongside effective supporting materials and strong signposting to advice and funding resources. Additionally, the Scottish Government should collaborate closely with local authorities to develop a robust enforcement framework – ensuring that EPCs are produced whenever they are required to be. This framework should ensure EPC assessments meet high-quality standards and address non-compliance effectively. By combining these efforts, the Government can enhance the reliability and effectiveness of the EPC system, supporting Scotland's broader net-zero objectives and encouraging consumer engagement in energy efficiency improvements.

BUILDING CONSUMER AWARENESS

Our investigation found that consumers are concerned about climate change and want to play their part in tackling it, but there is limited awareness of the actions they will need to take to meet net-zero targets around home heating's significant role in carbon emissions.

As and when the Scottish Government introduces specific targets or standards for home heating, it will be essential to align these requirements with a comprehensive and coordinated public engagement campaign to equip consumers with the knowledge and support needed to take the required actions. In advance of that, there is an ongoing need to raise awareness of the broader benefits of clean, affordable heat as part of the Scottish Government's wider net-zero messaging. This would help lay the groundwork for a more targeted awareness campaign should more specific actions from consumers be required.

INDEPENDENT, TRUSTED ADVICE AND INFORMATION IS VITAL

A clear theme in our findings was that consumers need to access to impartial, tailored advice on which technologies best suit their homes and circumstances. Given their general unfamiliarity with the sector, it becomes increasingly important that consumers have easy access to impartial advice on the key considerations and questions they should ask of installers.

The Home Energy Scotland service means that Scotland is often recognised as being ahead of other parts of Great Britain, which currently lack equivalent 'single' sources of independent advice.

The Scottish Government should fulfil its commitment to continue funding free, independent consumer advice. Critically, that provision must be sufficiently resourced in order to respond to anticipated increases in demand over time.

RECOMMENDATION 2: Raise awareness of the clean heat agenda and its benefits for consumers

In the short term, the Scottish Government needs to work with the public, private, and third sectors to build consumer awareness of the role that home heating plays in the wider net-zero agenda - the options and opportunities this creates for consumers - and where further information can be sought. As and when specific standards or targets are brought forward, this awareness raising must be ramped up to clearly articulate the requirements, journeys and impacts for the ways that people insulate and heat their homes. These information campaigns should factor in the needs of seldom-heard communities and those who may be generally underrepresented. It should also detail where people should go for advice and support.

RECOMMENDATION 3: Future proof provision of independent information and advice

All consumers should be able access a single, reliable and adequately resourced source of independent advice and support, such as the Home Energy Scotland service. The Scottish Government should commit to funding the Home Energy Scotland service – or an equivalent body such as the National Public Energy Agency - sufficiently so it can deliver that function to the appropriately high standard as volume in this sector increases.

PUBLIC SUPPORT IS KEY TO OVERCOMING HIGH UPFRONT COSTS

The key low-carbon and energy-efficiency technologies are characterised by high upfront costs, whereas the financial returns—through energy savings—can take time to materialise and can vary between households.

Our investigation found that high upfront costs may remain a significant barrier to widespread adoption of technologies. Funding to support consumers to adopt these technologies is therefore critical, but the range of existing public funding support and incentives may complicate the consumer journey, in addition to perceptions that accessing grant and loan funding requires substantial time and effort.

As uptake of these technologies increases, so too will the need for financial support. As demand increases due to public policy goals, funding will need to be available to support the market growth.

However, whilst recognising the future growth in demand, we also acknowledge the constraints on the broader public sector funding context. The need to maximise the efficiency, effectiveness and impact of public funding support for energy efficiency and renewable heating is therefore paramount.

RECOMMENDATION 4: Review existing funding support to ensure maximum effectiveness, reach and impact.

The Scottish Government should, by the end of 2026, undertake a systematic review of public funding available to consumers in the sector in Scotland. The review must examine if current schemes meet demand, assess their effectiveness, and ensure funding is allocated efficiently to where it is most impactful - including addressing any unfair exclusions in eligibility. In addition, the Scottish Government should also consider eliminating unnecessary frictions in the application process. It should also focus on identifying the right mix of targeted grant and loan support that will effectively meet future demand and contribute to achieving any specific legislative targets or requirements.

TACKLING UNFAIR TRADING THAT IMPEDES CONSUMER CONFIDENCE

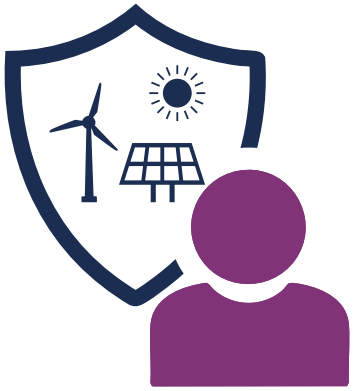
The sector has experienced a high prevalence of scams, unwanted cold calling, misleading marketing and rogue trading. Despite several reviews and recommendations to fix the issues, evidence of significant consumer detriment from a minority of poor traders endures.

Although the breaches vary depending on the products and schemes - without change - there is a risk that unfair trading practices will damage confidence and hinder decarbonisation goals. In particular, the misleading marketing or misrepresentation of government funding schemes should not be tolerated as an enabler of consumer fraud – especially against consumers in vulnerable circumstances. Our analysis of recent complaints and intelligence found that little has improved over the years to stem this weakness. Despite the significant harm caused to vulnerable consumers in Scotland by 'the Green Deal' a decade ago[13] - the current problems with the ECO4 scheme[14] and spray foam scams[15] demonstrate that the response and resources available to tackle unfair trading are insufficient.

The public enforcement resource to advise well-meaning but failing businesses, quickly tackle outright rogue traders, and (where necessary) punish the worst offenders, is insufficient to build consumer confidence in the sector.

RECOMMENDATION 5 – Strengthen the enforcement landscape

Given the anticipated expansion of home retrofit activity, the Scottish Government must act now within its powers to strengthen the enforcement landscape and protect consumers from substandard work, rogue trading, and scams. This requires a strategic focus on ensuring that enforcement bodies—both locally and nationally—are sufficiently equipped and resourced to tackle unfair trading and safeguard consumer interests. Without intervention, rising demand risks exposing consumers to increased harm—particularly through misleading claims about government-backed schemes. To support effective protections, the Scottish Government should engage with the UK Government on relevant consumer protection policy, and as a priority, update its Quality Assurance strategy in collaboration with consumer protection partners to provide a coherent framework that promotes confidence and compliance.



A COMPLEX SECTOR MAKES REACHING THE TARGETS MORE DIFFICULT

A key finding of the investigation is that the sector's complexity is a barrier to confidence. The separate markets for the technologies (with related standards bodies and rules) have grown in a piecemeal fashion to meet the steady rise in demand for home-energy technologies. There is now a confusing array of bodies, memberships, accreditations, and logos. While each individual scheme aims admirably for objectively higher standards in the sector, collectively they create confusion for consumers about quality and accountability.

We acknowledge that standards bodies play a vital role, protecting consumers by vetting and accrediting traders, monitoring installation quality, and in some cases, providing robust redress systems. The protections, although discrete, are also improving in line with a recent review by the Competition and Markets Authority (CMA).[16] Also, while standards bodies can (and do) work together to improve outcomes for consumers – complexity and problems persist.

It is clear that individual sectoral bodies cannot deliver the overall strategic change required, and the UK Government should seize the opportunity to simplify, build and reform the entire landscape under its planned systemic review of the Warm Homes Plan.[17] Above all, reforms should simplify and improve the journey for consumers. In our view this can only happen with the creation of a single, trusted accreditation or licensing scheme, building on - but simplifying - the current system. Such changes could be overseen and administered by a public regulator (e.g. Ofgem, as part of its ongoing review).[18]

RECOMMENDATION 6 – Broaden the Warm Homes Plan review

Consumer Scotland supports the planned review of the insulation sector under the Warm Homes Plan by the Department for Energy Security and Net Zero. We recommend that this review is broadened to include a thorough assessment of all insulation and low-carbon heating technologies, with a particular focus on simplifying and consolidating the roles of standards and complaints bodies for consumers. The purpose should be to establish a coherent and consistent consumer journey through the systems of certification, monitoring, complaints and enforcement. This could be achieved through a regulatory framework, potentially overseen by Ofgem.[19] Operating within such a regulatory framework there would preferably be a single body to oversee standards and consumer protection.

SHARING INFORMATION CAN IMPROVE OUTCOMES FOR CONSUMERS

Our investigation identified gaps in information sharing between standards bodies and public enforcement agencies, reducing the overall effectiveness of consumer protection. This could leave consumers at risk as it may allow bad actors to flourish between the accreditation gaps.

There is a wealth of trader intelligence in the sector owned by accreditation bodies and code providers, including important details of exemplary businesses, rogue traders and expelled members. This is vital information that should be better shared between standards bodies and public enforcers to enhance confidence in the overall system. A review could provide a more robust system of consumer protection from enforcement and perhaps also ensure the best traders are more easily identified.

We acknowledge that this is not a straightforward issue. Addressing it will have implications for membership criteria rules and data protection laws. It will also intersect with requirements to avoid illegal collusion between standards bodies and prevent actions that unreasonably restrain members' legitimate rights to trade.

While there are challenges to sharing information in this way, we believe there is merit in examining the current system to make improvements wherever possible. We heard from stakeholders that they were aware of the issues and remained open to overcoming surmountable issues wherever possible.

RECOMMENDATION 7 – Explore opportunities for enhanced data and intelligence sharing

In partnership with the enforcement landscape (such as trading standards) standards bodies should conduct a review of their information sharing processes so that (as far as legally possible) rogue traders are flagged and prevented from operating. Where possible, the worst examples and most persistent offenders should include referrals to the relevant enforcement agencies – and vice versa.

ADDRESSING THE DISPARITIES IN CONSUMER PROTECTION

Maintaining consumer confidence requires the sector to uphold high standards of quality assurance and consumer protection. These standards, managed by accreditation and code bodies, safeguard both consumers and government investments.

The investigation identified a gap in consumer protection between publicly funded and 'self-funded' consumers. Government-funded installations require the use of accredited traders who must meet strict industry specifications and provide essential consumer protections, including trader monitoring and access to ADR. In contrast, self-funded consumers are not required to use accredited traders - exposing them to the risk of lower-quality installations from unskilled labour and fewer protections when resolving disputes.

Although accreditation through a maintained competency scheme imposes compliance costs on the supply side, it raises overall standards, enhances clarity, and incentivises private investment by offering greater security for finance companies. This is vital in establishing minimum competency standards that promote consumer confidence for the sector.

RECOMMENDATION 8 – Level the accreditation playing field

In order to inform the overall review of the standards sector, the Scottish Government should partner with the UK Government to establish a system of mandatory accredited quality assurance and consumer protection standards for all traders in the energy efficiency and low-carbon heating sector, regardless of how the work is funded.

CONSUMERS NEED CLEARER ROUTES TO RESOLVE COMPLAINTS

Our investigation found that the current system for advice and dispute resolution in the sector is fragmented and overly complex, with consumer complaints often spanning multiple issues under the jurisdictions of different standards bodies, certification schemes, and consumer codes. This complexity creates confusion, leaving consumers without a clear understanding of accountability or a straightforward route to redress. While individual standards bodies have developed processes in line with their specific remits and responded positively to previous recommendations, the lack of a unified system results in overlapping responsibilities and gaps in accountability.

Stakeholders emphasised the need for a simpler, more consistent framework with clear lines of accountability to ensure faster and more effective resolution of complaints. Crucially, there is an urgent need for a more supportive system to protect vulnerable consumers from being passed between multiple bodies, where no single entity takes responsibility for their full installation or complaint journey.

RECOMMENDATION 9 – Improving complaints and redress systems

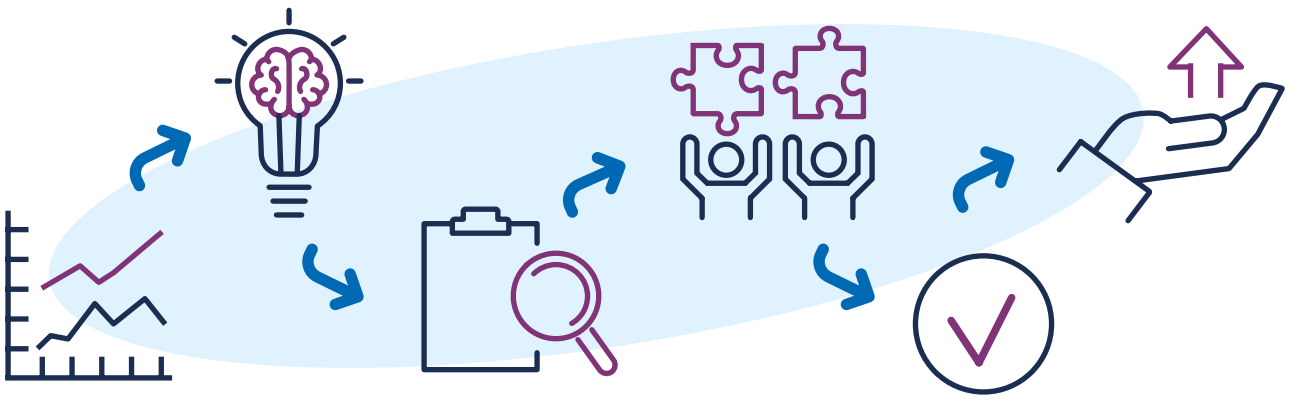
A streamlined, accessible, and consistent complaints and redress system is essential to protect all consumers, particularly those in vulnerable circumstances. The current system is overly complex, with overlapping responsibilities, accountability gaps, and insufficient financial safeguards from Insurance Backed Guarantees. Previous reviews have highlighted these issues, but delivering wholesale reform may not be wholly within the powers of sectoral bodies. To address this, the UK Government, through DESNZ (and Ofgem), should conduct a comprehensive review of the standards landscape to establish a unified and effective complaints and Alternative Dispute Resolution scheme that ensures better outcomes for consumers.

1. Framing the Investigation: Scope and Purpose

This chapter sets out the background to this investigation, and its purpose and aims. It describes the scope of the investigation, and the approach we took to evidence gathering.

Why this Investigation Topic?

1. In July 2024, Consumer Scotland launched an investigation into the energy efficiency and low-carbon technologies sector. The aim was to explore how effectively the sector supports and protects consumers.[20]
2. The investigation considers the full consumer journey—from the information and advice that shape decision-making, to protections against poor-quality work and rogue traders, and finally, the availability and adequacy of redress when things go wrong. The topic was selected in light of Scotland's legal commitment to achieving net-zero emissions by 2045, which will require significant changes in how homes are heated.
3. Meeting these targets will place considerable responsibility on consumers to improve home insulation and adopt low-carbon technologies such as heat pumps, electric heating, and heat networks. This shift demands a high level of consumer engagement in what are often complex and unfamiliar markets. While the potential benefits are significant, consumers also face substantial financial and practical risks.
4. The energy efficiency and low-carbon heating sector operates across a mix of devolved and reserved powers. The Scottish Government is responsible for areas such as home energy-efficiency standards, renewable energy targets, and the provision of advice, grants, and loans to support consumer adoption. In contrast, the UK Government oversees consumer protection frameworks, energy market regulation, and product standards.



Devolved Matters (Scottish Government)	Reserved Matters (UK Government)
Energy Efficiency Initiatives: Development and implementation of programmes to enhance energy efficiency in residential buildings.	**Energy Supply and Regulation:** Oversight and regulation of energy markets, including electricity and gas supply.
Building Standards: Establishment and enforcement of construction and renovation standards to improve energy performance.	**Consumer Protection Policy:** Implementation and enforcement of laws safeguarding consumer rights related to energy services and products.
Fuel Poverty Alleviation: Strategies and programmes aimed at reducing fuel poverty through improved home energy efficiency.	**Competition Law:** Regulation to promote competition and prevent monopolistic practices within the energy sector.
Consumer Advice and Advocacy: Provision of guidance and representation to consumers regarding energy efficiency measures and rights.	**Product Standards and Safety:** Regulation of standards ensuring the safety and efficacy of energy-related products.
Skills and Training Programmes: Development of workforce training initiatives to support the energy efficiency and retrofit sector.	**Employment Law:** Regulation of employment practices and labour relations within the energy sector.

Figure 1.1: Responsibilities of the Scottish Government and the UK Government.

Devolved and reserved matters in the energy retrofit sector.

5. In April 2025, the Scottish Government outlined plans for a future Heat in Buildings Bill, expected to be introduced later this year. The Bill is intended to retain the 2045 target for decarbonising home heating but with a greater focus on making the transition affordable, flexible, and fair – especially for those in fuel poverty. Rather than placing obligations on homeowners following property sales, the proposals suggest a shift toward collective action—particularly offering better options for rural and island communities. The plans include expanding heat networks, setting minimum energy-efficiency standards, and aligning with broader policy reforms such as changes to EPCs and a new Net Zero Standard for social housing.[21]

6. The key goal of these proposals is to reduce emissions from 'polluting' home heating. For example, in February 2025, the UK's Committee on Climate Change (CCC) estimated that emissions from residential buildings would need to fall by 66% between 2023 and 2040 to meet national carbon reduction targets.[22]

7. Prior to our investigation we saw evidence from stakeholders that the markets for energy efficiency and renewable-energy technologies are beset by risks and challenges for consumers to navigate. For example, in recent years a wider number of householders have been mis-sold spray-foam insulation which has damaged their properties; separately the UK Government highlighted in January 2025 the "fragmented and confusing system of protections for people who want to insulate their homes".[23]

8. The aim of the investigation is to identify ways that the sector can work more effectively for consumers. This is critical if consumers are to have the confidence to engage in the markets at the scale that they will need to over the coming decades – both to enhance the warmth, comfort and affordability of heating their own homes, and to contribute to wider emissions reductions targets.

ABOUT US

9. Consumer Scotland is the statutory and independent body for consumers in Scotland. We were established by the Scottish Parliament through the Consumer Scotland Act 2020 ('the Act') to provide consumer advocacy and advice with a view to:

- Reducing harm to consumers in Scotland
- Increasing confidence among consumers in Scotland in dealing with businesses that supply goods and services to consumers
- Increasing the extent to which consumer matters are considered by public authorities in Scotland
- Promoting sustainable consumption of natural resources and other environmentally sustainable practices in relation to the acquisition, use and disposal of goods by consumers in Scotland

10. Established in 2022, Consumer Scotland's purpose, as set out in our Strategic Plan for 2023-2027,[24] is to improve outcomes for current and future consumers in Scotland. Our ambition is that every consumer in Scotland can participate in a fair and sustainable economy, confident their needs and aspirations will be met.

11. Our work is supported by robust data and research and analysis of the issues that matter to consumers in Scotland. By exploiting our growing evidence base, we provide government, regulators, businesses and the wider consumer landscape with insight, advice and recommendations on the actions that are required from them to achieve positive outcomes for consumers.

ABOUT OUR INVESTIGATIONS

12. Under the Act, Consumer Scotland may undertake investigations into sectors or practices which it considers causes, or may cause, harm to consumers, or otherwise for the purpose of fulfilling our general function.

13. The Act also guides the approach we should take to our functions, such as investigations, including having regard to:

- Those with the same, or similar functions to, Consumer Scotland
- The desirability of working in collaboration with others where appropriate[25]
- The interests of vulnerable consumers
- The environmental impact of the actions of consumers
- The importance of communicating in an inclusive way

14. Decisions on which issue or sector to investigate are based on our pipeline analysis of diverse sources of intelligence, including consumer markets, partner intelligence, governments' policies, and consumer complaints data. Relevant topics are then assessed against our prioritisation criteria[26] and strategic priorities.

OUR APPROACH TO THIS INVESTIGATION

15. At the heart of this investigation is Scotland's legal imperative to achieve net-zero emissions by 2045 and the challenge it creates for consumers to convert their home heating. There will need to be a marked increase in consumer engagement in the markets for so-called 'green technologies' such as insulation, heat pumps and solar PV.

PARAMETERS OF THE INVESTIGATION

16. This investigation focuses on the issues facing consumers in domestic properties in Scotland. It does not review the issues faced in the social rented sector (which is subject to different targets, standards, and protections), nor does it cover issues for the non-domestic (business) sector.

17. The investigation does not explore the merits of specific public grants and support schemes, although it does consider the operation of these schemes in totality. Through this work we highlight the barriers preventing consumers from improving energy efficiency and transitioning to low-carbon heating - and make recommendations to improve consumer outcomes in the sector.

18. In line with our statutory obligations this report sets out the findings and recommendations of the investigation.[27] Throughout this work, we have also had regard to any activities carried on by specified persons and any other persons with the same functions as, or similar functions to, Consumer Scotland. Reflecting our focus on collaboration (avoiding duplication), we sought to aggregate evidence from a range of trade, regulatory and consumer stakeholders. A list of key stakeholders with whom we engaged is included in Appendix B.

INVESTIGATION STAGES

19. This work was carried out with the following stages:

- A public launch setting out the parameters of the investigation[28]
- A 'Call for Information' from relevant consumer and trade organisations, and a subsequent analysis of submissions[29]
- An analysis of previous reviews of consumer issues in this market, and of previous research into consumer attitudes to net zero and low-carbon technologies
- A review of relevant consumer complaints and enquiries to Advice Direct Scotland
- An assessment of EPC data to assess the scale of the energy efficiency challenge for households in Scotland
- A series of bilateral meetings with key stakeholders
- An in-person roundtable with key stakeholders to shape final conclusions

REPORT STRUCTURE

20. This report is structured as follows:

- **Chapter 2 examines the challenge:** it explores what current aspirations imply for uptake of key technologies and energy efficiency standards, placing these in the context of recent trends, and consumer attitudes
- **Chapter 3 considers consumers' decisions to enter the market:** it investigates the information, advice and access to incentives for consumers to engage with the market
- **Chapter 4 considers issues around consumer protection:** it highlights the levels of protection from unfair trading, misleading claims, and scams - as well as the adequacy of existing standards and quality assurance
- **Chapter 5 examines remediation and redress:** it outlines the routes to, and adequacy of, remedies and redress when things go wrong

ENERGY EFFICIENCY AND LOW-CARBON HEATING SECTOR – KEY TERMS

21. Throughout this report, references will be made to 'the sector' for energy efficiency and low-carbon technologies.

22. This sector consists of a range of technologies and products which are summarised in Figure 1.2. Some of these improve the energy efficiency of homes, some provide heat through low or zero-carbon heating systems rather than fossil fuels, some (such as photovoltaic panels) are 'supporting' technologies in that they can reduce the price of electricity, making heat pumps more financially viable, whilst heat networks provide heat from one source to multiple properties. Additional information on these technologies is also provided in Appendix A and Chapter 2 sets out recent progress on installation of some of these key technologies in homes in Scotland.

23. The sector is overseen by a range of standards bodies (Figure 1.3). Chapter 4 considers in further detail the role that these standards bodies play in maintaining standards and protecting consumers, while there is a glossary of key terms in Appendix C.

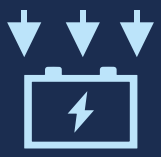
Heat pumps		Heat pumps warm homes and produce hot water by transferring heat from one location to another using a refrigerant cycle, extracting heat from the air, ground, or water, concentrating it to heat or cool a space.
Microgeneration (e.g. Solar PV and wind)		Electricity microgeneration is mainly from solar panels (also wind turbines). It produces renewable electricity on-site by using energy from the sun (and wind) thereby reducing grid reliance and lowering carbon emissions.
Insulation and draught-proofing		Home insulation and draught-proofing work together to minimise heat loss and prevent unwanted air leakage, creating a more energy-efficient home heating system.
Heat networks		A heat network distributes heat generated from a central source through insulated pipes to multiple homes, providing efficient heating and hot water.
Energy storage		Home energy storage systems store excess electricity, typically generated from renewable sources like solar panels, in batteries for later use, ensuring energy availability and reducing reliance on the grid.
Resistive electric heating		Resistive electric heating generates heat by passing an electric current through a conductor, converting electrical energy directly into thermal energy for space or water heating.

Figure 1.2: A range of technologies and products.

Key technologies involved in the transition to low-carbon heating.

TrustMark	TRUSTMARK Government Endorsed Quality	TrustMark is a not-for-profit organisation approved by the DBT to operate an Endorsed Quality Scheme for work carried out in or around the home with the aim that consumers can find competent tradespeople they can trust. TrustMark operates through a network of Scheme Providers and Registered Businesses.
Microgeneration Certification Scheme (MCS)	MCS	MCS is the UK's quality mark for small-scale renewable energy systems like Solar PV, solar heating, heat pumps, biomass, and battery storage. MCS has two main roles – setting and maintaining standards and providing consumer protection. Their Standards define how renewable energy systems should be designed and installed using MCS certified installers and products.
Renewable Energy Consumer Code (RECC)	RECC RENEWABLE ENERGY CONSUMER CODE	RECC is a consumer code that protects consumers through member businesses that sell, lease and install small-scale renewable energy generating systems in the domestic sector. RECC is approved by the Chartered Trading Standards Institute (CTSI) under its Approved Code scheme.[30] Consumers are protected through membership vetting and monitoring, deposit protection, and access to alternative dispute resolution systems.
The Home Insulation and Energy Sytems Contractors Scheme	HIES Consumer Code	HIES is also a CTSI approved consumer protection code covering the installation of renewable energy products. Any products installed by HIES Members must be according to Code standards. Similar to RECC, consumers are protected through membership vetting and monitoring, deposit protection, and access to alternative dispute resolution systems.

Figure 1.3: Standards bodies.

Key standards bodies in the sector for energy efficiency and decarbonised heating.

2. The Challenge: Consumer Engagement and the Scale of the Transition

This chapter sets out that the way consumers heat their homes will need to change over the next two decades. It describes the scale of the policy aspiration and consumers' attitudes to those aspirations.

It then explores the challenge specifically in relation to energy efficiency, heat pumps, and heat networks, the three most significant technologies that consumers will need to become familiar with.

The Scale of the Task Ahead

Key Theme	Summary of Findings
The Scale of the Transition	Scotland must reduce CO2 emissions from homes by 66% by 2040; major policy and behavioural shifts are required to meet net-zero targets.
Consumer Attitudes and Barriers	Consumers are concerned about climate change and support action, but uptake is low due to high costs, lack of awareness, and disruption concerns.
Energy Efficiency Gap	1.5 million homes do not meet a good standard of energy efficiency (when referring to their fabric efficiency).
Heat Pump Uptake Challenge	As a recognised key technology, heat pump deployment is far below what is needed; only 8,000 installed in Scotland in 2024, requiring major scaling to meet targets.
Heat Networks and Consumer Protection	Heat networks are expected to grow significantly, but protections for consumers are only now being introduced, with Ofgem regulation beginning in 2026.
EPC Reform and Consumer Empowerment	EPC reforms aim to shift focus from cost-based to carbon-based efficiency, improve clarity, and better support consumer action and understanding.

24. Scotland's climate targets have a clear legal commitment to reduce the net emission of designated greenhouse gasses to zero by the end of 2045[31] (five years ahead of the equivalent UK Government target).[32] With carbon-intensive heating in buildings being Scotland's third-highest source of polluting emissions, the Scottish Government has made it clear that reducing them is vital to achieving climate targets.[33] In 2021, the Scottish Government estimated that it would cost c.£33bn in total to convert all building stock (domestic and non-domestic) to zero emissions by 2045.[34]

25. In its Seventh Carbon Budget, published in February 2025, the CCC estimates that between 2023 and 2040, CO_2 emissions from residential buildings will need to fall by 66%.[35] While the objective is achievable, it will require, according to the CCC, a rapid increase in deployment of low-carbon heating and energy efficiency measures in homes. This will depend fundamentally on consumers engaging with the sector for energy efficiency and low-carbon technology - such as insulation, heat pumps, and Solar PV - on an unprecedented scale.

REVISED PLANS FOR A HEAT IN BUILDINGS BILL – DUE IN LATE 2025

26. In order to support these net-zero emissions targets, in November 2023 the Scottish Government published initial consultation proposals for a Heat in Buildings Bill.[36] These included potential requirements that all owner-occupiers must meet a minimum energy-efficiency standard by 2034 – and - that all homes should phase out fossil-fuel based heating systems by 2046 (with these requirements triggered by events such as property sales or major renovations).

27. In its response to the plans, Consumer Scotland described the programme as:

"likely to be the single biggest ask that the Scottish Government has made of consumers outside the response to the COVID-19 pandemic."[37]

28. The Independent Regulatory Review Group similarly described the proposals as:

"The most significant piece of regulatory intervention since devolution, affecting every individual and business in Scotland."[38] Regulatory Review Group (2024), letter to Minister on the Heat in Buildings Bill

29. In April 2025 - responding to concerns about consumer affordability and the risk of exacerbating fuel poverty - the Scottish Government announced revised proposals for the Bill, which is now expected later in the year.[39] The updated approach moves away from property sales as 'triggers' requiring low-carbon heating installations. Instead, while upholding the 2045 legal target for zero-emissions heating, the new strategy emphasises collective action, local flexibility, and fairness—particularly for rural and island communities. The revised plans are to adopt a 'technology-neutral' stance and include new powers to expand heat networks and set minimum energy efficiency standards across property types. The proposals are also to align with broader policy reforms, including updated EPCs and a new Net-Zero Standard for social housing.

30. In summary, the Bill marks a shift from a policy that places obligations on householders – to one that seeks to deliver a sectorled transition. Such an approach will fundamentally require consumer demand and confidence to grow significantly if the targets are to be realised.

CONSUMERS RECOGNISE THE CHALLENGE BUT WANT MORE SUPPORT

31. So, what do we currently understand about how consumers feel about the challenge to decarbonise their home heating, and how might they respond to it?

32. The first point to make is that consumers are concerned about climate change and want to be able to play their part in tackling it. Research by Consumer Scotland showed that three-quarters (76%) of adults in Scotland are concerned about climate change.[40] This is consistent with equivalent surveys, including the Scottish Household Survey, and the UK Public Attitudes Tracker, which in 2024 found 80% of the UK population 'concerned or very concerned' about climate change.

33. Additionally, consumers are, in principle, supportive of a policy to improve efficiency and reduce emissions from home heating. The same Public Attitudes Tracker found that a large majority of people agree with the sentiment that individual actions help reduce climate change effects. When asked to identify behaviours and actions that they thought would have the most significant impact, installing low-carbon heating and improving energy efficiency were amongst the most frequently cited actions.[41]

34. However, these attitudes are not in themselves sufficient for behavioural changes to happen at the pace required if climate targets are to be met.

35. Whilst the majority of consumers are genuinely concerned about climate change, they are often – understandably – somewhat reticent to take actions where they perceive them to be disruptive or costly; or where they feel they are uncertain or have insufficient knowledge about the choices they face, and the trade-offs associated with those.

36. In relation to home energy efficiency and renewable technologies specifically, evidence from Consumer Scotland's research shows that cost, uncertainty, and disruption are major barriers to uptake of renewable energy and insulation technologies:[42]

- Cost is the most frequently cited barrier to installation of renewable energy technologies in the home, with around two-thirds of consumers citing this as a major barrier
- Uncertainty and lack of knowledge about which technologies are most appropriate, and how they work, is another major barrier (cited by around one fifth of consumers as the biggest barrier)
- The installation of the technologies is associated with hassle and disruption, with these considerations cited as the major barrier by around one in seven, or 15% of consumers

37. Understandably, Consumer Scotland's research found that only 10% of Scottish adults had considered installing a heat pump (air or ground source), with interest particularly low among households with fewer financial resources.[43]

38. The sentiment of these findings was echoed by the conclusions of the citizens' panel convened by the CCC. Their citizens' panel expressed:

"…a willingness to switch to heat pumps and install home insulation, but often only if upfront costs are made affordable and considerable concerns about the new heating technology are addressed, including ensuring better information is available and the installation process is made easier".

39. Specifically, panel members:

- Expressed concerns about the high upfront cost and the hassle, noise, and reliability of heat pumps
- Supported minimum energy-efficiency standards, provided safeguards are in place to prevent costs being passed on to renters
- Felt there should be more widespread availability of grants for both heat pumps and insulation, due to the significant upfront costs involved.[44]

40. These barriers and challenges aside, there has undoubtedly been a growing momentum around installation of some low-carbon technologies, although this is more particularly the case for solar technologies which are relatively less disruptive and tend to have a clearer cost-benefit trade-off than heat pumps. Whilst Solar PV does produce renewable electricity, it is not in itself a mechanism for decarbonising home heating.

41. Consumer Scotland research with adopters of heat pumps and solar technologies showed that they were generally positive about their experiences of installing and using these.[45] At the same time, however, it reiterated significant challenges around cost and access to finance, uncertainty and lack of information, and disruption as challenges that adopters had found frustrating to overcome.

42. Also, many of the adopters of these technologies to date – particularly when it comes to heat pumps – are enthusiastic early adopters who are strongly motivated by a desire to 'do the right thing' from an environmental perspective, and to be at the forefront of a new technological wave. The concern is that the majority of average consumers will be far less resourced, tech-savvy, and willing to engage in new technologies and complex markets without much greater levels of support and advice.

43. Whilst many adopters of renewable energy and energy-efficiency technologies have positive experiences, these are markets that are characterised by relatively high levels of consumer detriment (issues we explore in subsequent sections of this report).

44. In summary, consumers generally are concerned about climate change and recognise the potential benefits of energy efficiency measures and decarbonised heating in both contributing to climate objectives and potential reducing bills. But concerns about upfront costs alongside general unfamiliarity with the technologies and their suitability, means that uptake remains low.

ASSESSING THE SCALE OF THE CHALLENGE

45. The CCC notes that the key measures that combine to reduce emissions in residential buildings are low-carbon heating and energy efficiency. The former includes heat pumps (described as the dominant solution for replacing fossil fuel heating systems), heat networks, and direct electric heating (particularly in homes with lower heat demand where heat pumps are not an appropriate solution).

46. To what extent will these measures need to be adopted in Scotland? This section reviews the scale of the challenge relating to energy efficiency, heat pump adoption, and heat networks in Scotland, drawing on existing strategy and proposed targets.

OVER HALF OF HOMES IN SCOTLAND DO NOT HAVE A GOOD STANDARD OF ENERGY EFFICIENCY

47. In its consultation on proposals for a Heat in Buildings Bill, the Scottish Government set out its aspiration that all homes in Scotland 'achieve as good a level of energy efficiency as possible'.

48. As part of its EPC reforms, the Scottish Government has decided to create a new rating based on the fabric energy efficiency of the building – i.e. how well it retains heat. This measure is known as the Heat Retention Rating (HRR).

49. The Scottish Government has determined that a 'good level of energy efficiency' is when a home achieves a HRR of less than 120kWh/m2/year. They have also proposed that this HRR measure is translated into an A-G rating scale (similar to that used in the existing Energy Efficiency Rating (EER) on EPCs). On this new scale, ratings of A-C will correspond to dwellings that achieve a HRR of less than 120kWh/m2/year, and as such will be deemed to have a 'good' level of energy efficiency.

50. The new A-G HRR has been explicitly designed to have broad equivalence to the existing A-G EPC rating, in terms of the distribution of homes by rating band. This does not mean that every dwelling that currently achieves an A-C rating on the EPC measure would necessarily have a 'good' level of energy efficiency as defined by the HRR of 120kWh/m2/year or less. But on the whole there is anticipated to be a strong equivalence between the dwellings that score A-C on the existing EPC rating, and those that will rate A-C on the new HRR measure.

51. Specifically, research undertaken for the Scottish Government indicates that 'for a sample of Scottish dwellings, around 80% of homes that are currently in cost-based EPC EER band C also achieve band C in the new HRR. For all properties, we anticipate that around 15% would move to a better band while 10% would move to a worse band.'[46]

52. The same research also indicates that the Government response said that 'In total, around 40% of the sample reached EPC C or better.' The implication of this is that around 60% of dwellings, or **1.5 million**, do not currently achieve a good standard of energy efficiency according to the new fabric efficiency measure, as defined by the HRR (although this number relates to analysis from 2017-2022, and is improving year-on-year).

SPACE HEATING DEMAND VARIES ACROSS SCOTLAND

53. As noted above, the Scottish Government has indicated that its definition of a 'good' level of energy efficiency, and any future standards or targets, is likely to be based on the fabric efficiency of a dwelling – how well it retains heat.

54. It would be useful and interesting to understand how this measure of fabric efficiency varied by dwelling type or geographic area in Scotland. Unfortunately, the data is not available to us to make such an assessment.

55. However, other measures of energy efficiency are available. One alternative metric is known as 'space heating demand'. Space heating demand measures how much energy a home requires to achieve a given level of comfort. Like the HRR, space heating demand is measured in kWh/m2/year. However, space heating demand differs from the HRR because it explicitly takes into account the impact of local climate. Whilst the HRR measures the efficiency of building fabric in a locationally neutral way, space heating demand recognises that it requires more energy to heat homes in colder regions.

56. Both measures are useful. The Scottish Government has indicated that future targets or standards, if introduced, will focus on the HRR (fabric efficiency) in part because this is a locationally neutral measure and thus would not unfairly subject dwellings in some parts of the country to implement higher levels of energy efficiency interventions simply because of the climate in their local area. But the fact that climate does vary geographically does mean that the space heating demand metric is nonetheless of interest to consumers.

57. As part of this investigation, we undertook analysis to understand how space heat demand varies across regions in Scotland. To do this, we analysed data from the register of EPCs in Scotland (the Scottish EPC Register) which is made publicly available by the Scottish Government.[47] The underlying EPC data allows the space heating demand of each property to be established for all homes that have had a valid EPC completed within the last eight years (2017 – 2024). The composition of this group of homes with an EPC can be adjusted so that it is representative of the distribution of the entire housing stock.

58. We used the resulting database of around 1.5 million observations to consider the proportion of homes that achieve a space heating demand of 120kWh/m2/year. This specific threshold was chosen not because it corresponds to any proposed target or policy, but in order to be broadly consistent with the HRR measure.

59. Homes in Scotland have a wide dispersion of space heating demand (Chart 2.1). The majority of homes have a space heating demand of between 80 and 140 kWh/m2/yr. But a significant number have space heating demand under 80 kWh/m2/yr (i.e. particularly strong energy efficiency) and a significant number of particularly poor space heating demand in excess of 140 kWh/m2/yr.

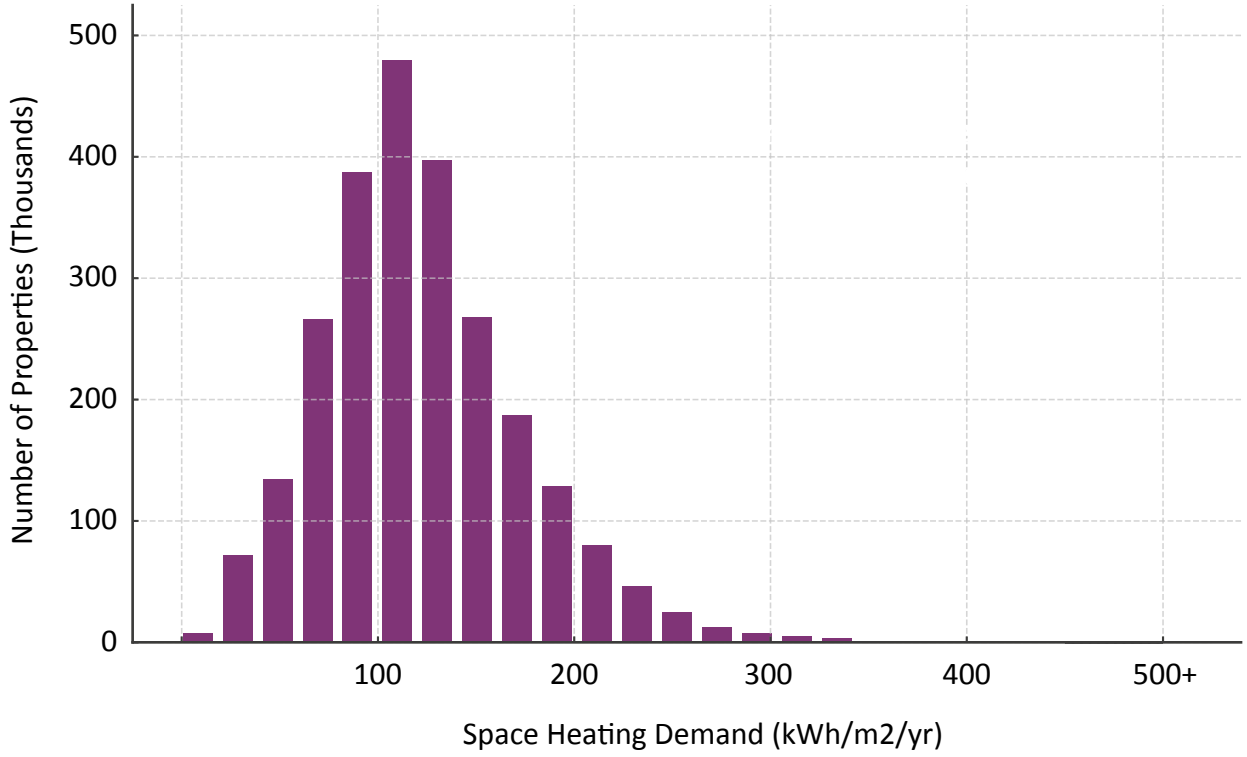


Chart 2.1: There is a wide distribution of space heating demand across dwellings in Scotland. Distribution of space heating demand (120 kWh/m2/yr), in Scotland.
Source: Consumer Scotland analysis of Scottish EPC register, 2017 - 2024

60. Our analysis further reveals that:

- Houses are more likely to have a higher space heat demand than flats. 53% of houses (617,000 properties) have a space heating demand in excess of 120kWh/m2/year compared to 28% of flats (262,000 properties)
- Owner-occupied homes are more likely to have a higher space heat demand than homes in the social rented sector. 52% of owner occupied homes (848,000 properties) have a space heating demand exceeding 120kWh/m2/year, compared to 47% of PRS homes (137,000 properties), and 33% of SRS homes (194,000 properties)
- Homes in the most deprived decile of neighbourhoods are somewhat less likely to have a high space heat demand than most other homes. This reflects that homes in the most deprived decile are more likely to be flats and social rented sector properties. 29% of homes in the most deprived decile of neighbourhoods (76,000 properties) have space heating demand exceeding 120kWh/m2/year, compared to 53% of homes in the fifth decile (144,00 properties), and 51% of homes in the least deprived decile (109,000 properties)

61. The findings also show significant differences across Scotland, when the effects of local climate are taken into account. Homes in more remote and rural areas tend to have a higher space-heating demand on average than those in urban areas (Chart 2.2). This partly reflects the distribution of properties by age and type in these areas. It also reflects the impacts of local climate.

62. It is important to recall that the space heating demand value is not the same as the HRR as it includes the impact of climate variation across Scotland. This means that it cannot be used to predict whether or not dwellings would comply with any future minimum standard that are based on the HRR, which is location-neutral. It does however show that dwellings in different regions would need to undertake different amounts of work in order to reach the same level of performance (though not to meet a government-mandated standard, depending on how this is set).

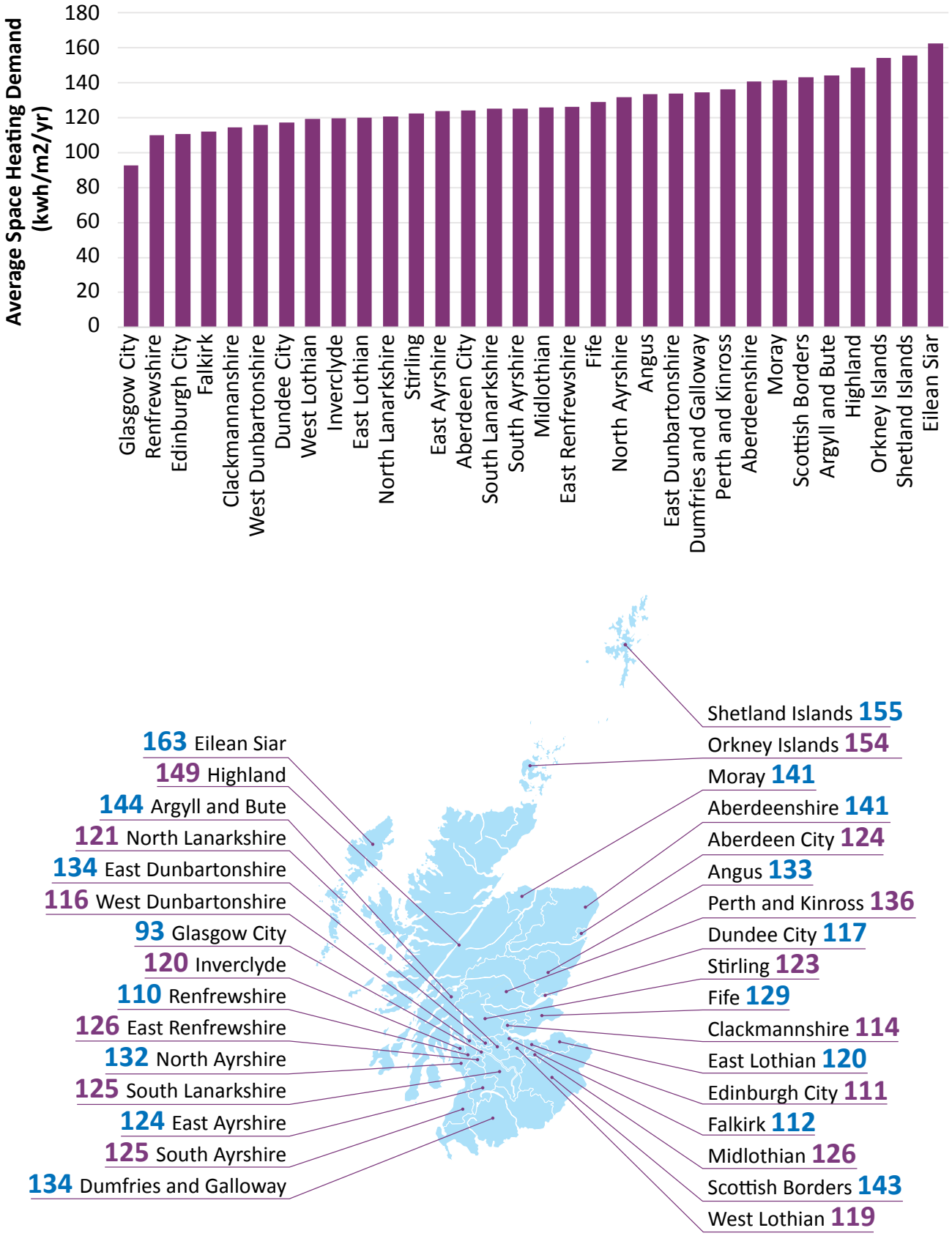


Chart 2.2: Space heat demand is typically higher in remote rural authorities than in more urban areas.
Average space heating demand by dwelling (120 kWh/m2/yr), by local authority area.
Source: Consumer Scotland analysis of Scottish EPC register, 2017 - 2024

HEAT PUMP DEPLOYMENT WILL NEED TO RAMP UP SUBSTANTIALLY

63. Alongside energy-efficiency requirements, the Scottish Government also consulted on targets for all homes to move to non-fossil fuel forms of heating by 1 January 2046. Owner-occupiers can decarbonise their home heating by adopting heat pumps, connecting to low-carbon heat networks, or deploying electric heating.

64. Here, although the timescales are longer, the challenge is particularly stark for consumers. Only around 300,000 of Scotland's 2.6 million homes currently have a renewable or very low emissions heating system, (the majority of these are traditional electric storage heating systems, which have long been associated with the highest rates of fuel poverty of any heating type).[48]

65. As noted by the CCC, heat pumps are the dominant solution for replacing fossil fuel heating systems. Across the UK, domestic heat pump deployment, whilst increasing, remains low. The CCC also notes that the UK significantly lags behind most other European countries in the deployment of heat pumps, including those with a similar reliance on gas, such as the Netherlands.[49]

66. The CCC has indicated that, for residential buildings to play their part in meeting the CCC's balanced pathway for Scotland to reach Net Zero by 2045, heat pump deployment would need to increase (annual installations would need to reach nearly 35,000 in 2030 and exceed 120,000 by 2035).[50] In Scotland, the number of annual domestic installations of heat pumps (combining air and ground source) has been increasing steadily in recent years (Chart 2.3). However, the number of annual domestic installations remains low in the context of the overall dwelling stock. In 2024 there were almost 8,000 heat pumps installed in Scotland. This is the highest annual total to-date, but it is clear that the pace of installation will need to increase substantially if targets are to be met (8,000 heat pumps annually is equivalent to 1,500 heat pumps per million people; this is significantly below the deployment rate in many other European countries, including those such as the Netherlands with similar reliance on gas as UK).[51]

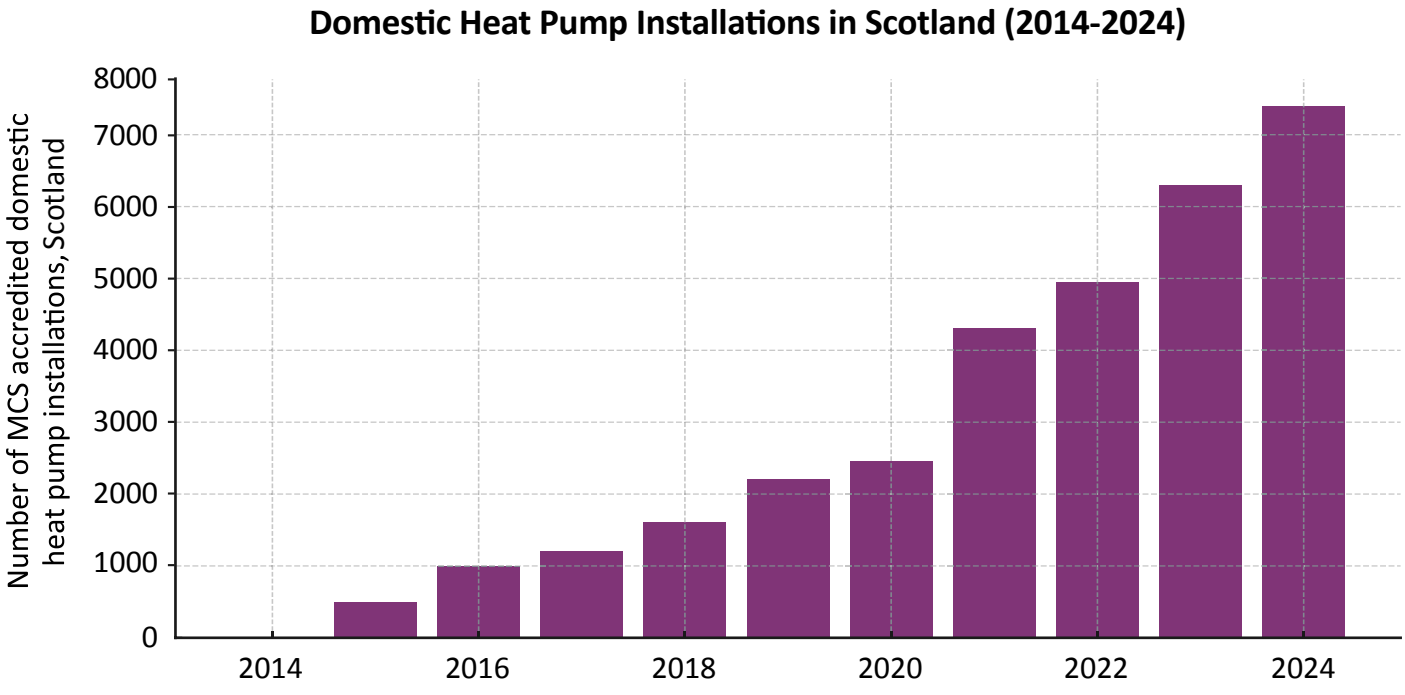


Chart 2.3: Annual installations of heat pumps have increased but remain relatively low.
Annual domestic installations of MCS-accredited heat pumps in Scotland.
Source: Consumer Scotland analysis of MCS data dashboard

HEAT NETWORKS WILL PLAY AN INCREASINGLY IMPORTANT ROLE

67. A heat network is a communal heating system which uses one or more centralised heat sources to provide multiple properties with space heating and/or hot water. These properties may be located in the same building or in separate buildings. Heat is transferred (in the form of hot water) from the heat source(s) to any connected properties through a network of highly insulated pipes. Another set of pipes returns cooler water from those properties to the heat source.

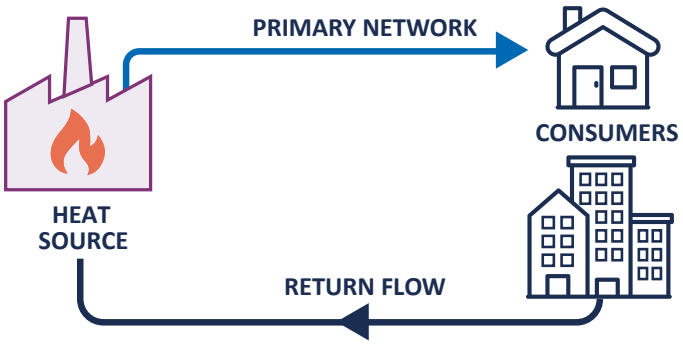


Diagram 2.4: Heat Network.
A simple example of a heat network.

68. Currently, only around 30,000 homes and 3,000 non-domestic premises are connected to heat networks in Scotland. Where heat networks use renewable sources of energy, they have the potential to play an important role in the decarbonisation of Scotland's buildings.

69. The Heat Networks (Scotland) Act 2021[52] sets statutory targets for the amount of heat to be supplied from networks. It requires that the combined supply of thermal energy by heat networks to properties in Scotland reaches the equivalent of connecting 120,000 homes from the gas grid to a heat network in 2027 and 400,000 homes by 2030.[53] It is estimated that heat networks could eventually grow to over 30% of Scotland's overall heat demand.[54]

70. In the right locations and circumstances, heat networks provide significant opportunities for consumers to utilise more efficient and decarbonised heating than traditional 'gas grid supply' heating systems.

71. Scotland's Local Heat and Energy Efficiency Strategies (LHEES) highlight where the development of a heat network may be suitable. Consumers and small businesses in Scotland also have access to financial support to connect to a local heat network through Home Energy Scotland (HES)[55] and Business Energy Scotland.

72. Achieving the aspirational targets for heat network rollout will be extremely challenging. Moreover, heat networks bring considerable risks and challenges for consumers. Recent Consumer Scotland research shows that, whilst heat networks are often associated with lower prices than traditional gas and electricity networks, the fact that heat network suppliers have monopoly power over residents can lead to detrimental consumer outcomes, particularly given the absence of a robust regulatory framework for heat networks (until very recently). In some cases, heat networks have been associated with higher and more volatile prices, and greater levels of supply outage.

73. From April 2025 heat network consumers in Scotland have access to additional support, with greater protections coming in 2026. Consumer Scotland is now the statutory advocate for such consumers in Scotland. It has funded the national consumer advice agency Advice Direct Scotland (ADS) to provide advice, information and support to heat network consumers who need it.[56] Consumers in vulnerable circumstances can also be referred by ADS to the Extra Help Unit (EHU) at Citizens Advice Scotland for additional support.

74. From January 2026 Ofgem will become the regulator for heat networks across Great Britain. The introduction of regulation will help to provide heat network consumers with similar protections to that of the gas and electricity market, ensuring that consumers receive a fair price, reliable supply of heat, and transparency of information.[57]

THE EPC SYSTEM IS UNDERGOING WELCOME REFORM

75. EPCs can, and should, play a vital role in helping consumers understand the energy efficiency, climate impact, and costs of heating their homes.

76. Introduced in Scotland in 2008 as part of the European Union's Energy Performance of Buildings Directive, EPCs provide a standardised rating of a property's energy efficiency, measured on a scale from A (most efficient) to G (least efficient).[58] In Scotland, EPCs are legally required when a property is sold or rented, ensuring that potential buyers and tenants have clear information about energy use and associated costs. They are currently valid for 10 years and are lodged within the Scottish EPC Register.[59] Around 60% of the housing stock currently has an associated EPC.

77. However, as they are at present, EPCs have a number of recognised limitations. These include:

- First and foremost, EPC metrics prioritise cost-based efficiency rather than carbon emissions or the fabric efficiency of the building. As such, they currently account favourably for lower-cost but high-emission systems - like gas boilers and oil heating. This risks undermining the transition to net zero by not incentivising the installation of decarbonised energy technologies such as heat pumps and heat networks
- Second, EPCs also have limitations in terms of usability and understanding. Consumers often view them as overly technical and confusing and as a result they tend not to place enough significance on them[60]
- Third, the quality of EPCs is variable, with limited monitoring or quality assurance of them taking place

78. Other challenges that are levelled at the current EPC framework in Scotland are that the certificates tend to provide relatively generic information about energy efficiency - rather than recommending home-specific measures to improve efficiency.[61]

79. In 2023, the Scottish Government consulted on proposals to reform EPCs, publishing its response in January 2025.[62] The objective of the reforms is to better empower consumers with more comprehensive information on the energy efficiency of their building, and to provide a better picture of a building's contribution to net-zero climate objectives.

80. The Scottish Government's proposed reforms to EPCs can be grouped into three areas: a refocussing of what is measured by the EPC; changes to the useability of EPCs; and a range of changes to their operational governance.

81. In terms of measurement, the reforms will refocus EPCs on the fabric energy efficiency of the property (how well it retains heat) and on its heating systems' emissions and efficiency. The plans will also keep using 'modelled energy costs'—which estimate how much it will cost to heat, light, and provide hot water in a home—as this helps consumers plan their energy use and costs. However, there will be a stronger focus on how well a building holds in heat (known as fabric efficiency) and the emissions it produces.

82. To make EPCs easier to use, the plans include a better layout on the certificates themselves and clearer, more detailed information available through a new online 'dynamic interface'. The validity period of EPCs will also be reduced from ten years to five, so that consumers have more up-to-date and relevant information when making decisions.

83. In relation to operational governance, there are plans to strengthen the EPC system by improving the qualifications and oversight of EPC assessors. This includes standardising skills and qualifications in the aim of having a competent and consistent workforce. The government suggest this will also enhance transparency and accountability within the assessment process through an updated Operational Framework and independent audits of Approved Organisations.

84. For enforcement, the Scottish Government is collaborating with local authorities to develop a stronger framework. This will be done with the aim that EPC assessments meet high-quality standards and that non-compliance is addressed effectively.[63]

85. The Scottish Government has also confirmed that the reformed EPCs will include recommendations (to be renamed 'potential improvement options') to improve the property's fabric efficiency, but that there will be no requirement on homeowners to implement any such options. The rationale is in recognition of the Government's view that EPCs are intended as a basic, standardised assessment and not a substitute for detailed, technical, retrofit assessment and advice. The revised EPCs will signpost consumers to that detailed technical information, rather than specifying it themselves.

86. The EPC reform timetable set out plans to lay revised EPC Regulations in 2025 with redesigned certificates coming into force in autumn 2026 (as per the communication with the Local Government, Housing and Planning Committee in January 2025).

OUR RECOMMENDATION

87. EPCs have the potential to play a crucial role in improving the energy efficiency of Scotland's homes and reducing carbon emissions from home heating. But they are currently hampered by methodological flaws and presentational weaknesses.

88. The aim of the Scottish Government's proposed reforms are welcome. They will shift the focus from cost-based efficiency to fabric efficiency and carbon emissions, improve accuracy, and make EPCs more accessible and relevant. The changes present an opportunity to overhaul the market for assessment, quality assurance and enforcement - to deliver EPCs that are consistent and of real value to individual consumers and the wider Heat in Buildings strategy.

89. Whilst we agree with the proposition that EPCs should contain potential options for the improvement of homes' energy efficiency – rather than enforceable requirements – EPCs should empower consumers to take action on the basis of a completed EPC. This will be determined by the information that is presented on the EPC and supporting material, the way that information is presented, and the links and signposting to other sources of information; more broadly, it also requires relevant advice and funding bodies to be able to respond to any resulting increase in demand for their services. The aspiration to use EPCs to empower consumers to take action will become even more important if and when specific legislative standards of energy efficiency are introduced.

RECOMMENDATION 1: Unlock the consumer benefits from EPC reforms

In developing a revised EPC framework, the Scottish Government should ensure that EPCs empower consumers to take informed action. This can be achieved by presenting clear, accessible information on the EPC itself, alongside effective supporting materials and strong signposting to advice and funding resources. Additionally, the Scottish Government should collaborate closely with local authorities to develop a robust enforcement framework – ensuring that EPCs are produced whenever they are required to be. This framework should ensure EPC assessments meet high-quality standards and address non-compliance effectively.

By combining these efforts, the Government can enhance the reliability and effectiveness of the EPC system, supporting Scotland's broader net-zero objectives and encouraging consumer engagement in energy efficiency improvements.

3. Empowering Consumers: Advice, Convenience and Cost

This section outlines key challenges consumers face around information, advice and incentives to engage with the sector.

Information, advice and incentives

Key Theme	Summary of Findings
Public Awareness and Engagement	Well-funded, inclusive public information campaigns that are tailored to different needs must clarify why change is needed and the actions required around home heating's role in carbon emissions and net-zero targets.
Access to Independent Advice	Independent, impartial advice (e.g. from the HES service) is critical due to consumer unfamiliarity and potential commercial influences.
Financial Incentives	Upfront costs remain a key issue, with public funding central to adoption of technologies. As demand rises in line with net-zero goals, accessible and fair funding will be critical to sustain sectoral expansion.
Confidence and Understanding	Consumers need to trust that low-carbon technologies are reliable, comfortable, and suitable for their homes.
Vulnerable and Digitally Disadvantaged	Vulnerable consumers may face greater harm; digital exclusion exacerbates difficulty accessing information and support.

90. Given the scale of the transition ahead, and the understandable consumer hesitance around changes perceived as disruptive, complex, or costly, building public awareness and confidence is not a secondary task — it is central to success.

91. This section considers the key challenges consumers face when deciding whether to engage - the first stage of the 'consumer journey' – and highlights the importance of:

- Building consumer awareness of the role of home heating in meeting net-zero targets, within the context of potential unfamiliarity with products
- Accessing independent, impartial advice and information to support consumers in making informed choices that are right for them
- The availability of financial support incentives, including grants and loans

BUILDING CONSUMER AWARENESS

92. The UK and Scottish Governments have set ambitious targets for achieving net zero. Our investigation indicated that, whilst there is broad awareness of those aspirations generally, there is a general lack of awareness of the ways in which individual home heating will need to change if the wider carbon-reduction targets are to be met.

93. Much of the evidence gathering for this investigation took place before the statement from the Acting Minister for Climate Action to Parliament of 3 April 2025 (i.e. outlining that the Heat in Buildings Bill to be introduced in 2025 will have moved on from the proposals consulted upon). In that context, many stakeholders who inputted to our investigation emphasised the importance of raising public awareness around any potential legislative requirements, stressing the need for a public information campaign when specific targets were adopted.

94. For example, one stakeholder highlighted an "urgent need" - ideally ahead of any legislation - "to ensure that people understand what is being asked of them, why they're being asked to meet new standards, and where to go for advice and support", while another pointed to information raising having to start from a potentially low baseline of knowledge about those potential requirements.

95. The Scottish Government has since indicated that, "instead of placing prohibitions on every homeowner", targets would be set for the Government.[64] On the basis that the specific proposals previously associated with the planned Heat in Buildings Bill are understood to have been taken off the table, the urgency of raising awareness of those specific regulatory requirements has diminished. However, stakeholders also stressed the importance of the ongoing need to raise awareness of the broader benefits of clean, affordable heat as part of the Scottish Government's wider net-zero messaging. This would also help lay the groundwork for a more targeted awareness campaign if more specific requirements are ultimately enacted.

96. The Scottish Government has acknowledged the importance of consumer awareness raising (including tailoring approaches to diverse communities and ensuring local context),[65] in addition to the value of public support and buy in[66] and enabling public involvement in the move to net zero.[67] It also has a strategic objective that "people are aware of the action that all of Scotland is taking to tackle climate change and understand how it relates to their lives".[68]

97. EST's research of April 2023 for the Scottish Government pointed to the need for a large public engagement campaign about any changes that may be required on the way to meeting net zero.[69] It noted that participants sought clarity on what any regulations would mean for them personally and the need for the Scottish Government to provide advice and clear information that was easily accessible and simple to understand.[70]

98. In April 2025, the Scottish Government reviewed the Public Engagement Strategy for Climate Change at the mid-point of its delivery. The Review summarised activities undertaken since its publication in 2021 to engage the public on climate change and encourage climate action.[71] Steps taken included, among others, developing a national network of Community Climate Action Hubs, launching an annual Climate

Engagement Fund and delivering the national communications campaign "Let's Do Net Zero".[72] The review reflected on progress made and scope for lessons[73] to help inform future engagement,[74] although the challenges of assessing the impact of specific engagement measures was highlighted.[75] The Scottish Government acknowledged that "more could be done to improve the reach and frequency of Scottish Government communications on climate change".[76] In terms of Heat in Buildings specifically, the Scottish Government previously said they would establish a Strategic Public Engagement Delivery Partnership in 2024 to "provide leadership and coordination of public engagement on the heat transition in Scotland across stakeholders and partners".[77]

99. More widely, academic literature has highlighted the importance of consumer awareness around low-carbon heating technologies and reducing emissions. A review of public perceptions of low-carbon heating technologies in Great Britain highlighted strong public support for carbon reduction policies, but relatively low awareness of the specific role of heating in carbon emissions (many respondents were unaware that was a significant contributor to UK carbon emissions). Public knowledge about specific low-carbon heating technologies was also found to be low, with increased public engagement and education needed to bridge the knowledge gap and facilitate uptake.[78]

100. Another review found that, in Sweden, a marketing campaign intended to increase public awareness and knowledge of heat networks significantly increased the public's intention to adopt district heating and led to 78% of households stating they were influenced to adopt district heating.[79]The impact of increased knowledge was further highlighted in a review exploring attitudes toward decarbonised heating technologies in the UK. It revealed that, despite general support for transitioning to greener heating systems, detailed knowledge of the technologies remained limited. The findings suggested that social factors, including perceptions and experiences of peers, influenced public willingness to adopt such systems, indicating the importance of community engagement and social proof.[80]

101. Finally, a stakeholder also felt that "media coverage often focuses on negative stories, perpetuating myths that switching to clean heating is not a realistic option for many households." In terms of technologies more specifically, one stakeholder commented that products such as heat pumps were unfamiliar to most people, while another gave an example of an individual consumer who, although connected to a heat network, had thought they had a heat pump. That is clearly only one example of one consumer, but ClimateXChange have highlighted the importance of familiarity and experience more broadly:

"People want confidence that heating systems will give them what they want, especially in terms of warmth and comfort. Even if people are aware of and look into low-carbon heating as a replacement, a lack of familiarity and experience with low-carbon systems might mean they are overshadowed by conventional alternatives."[81]

OUR RECOMMENDATION

102. There is a need for a clear, well-funded public information campaign to raise awareness of the role of home heating in meeting carbon emissions targets and the implications and potential benefits to consumers of cleaner heat. It is also important not to assume a uniform level of understanding of products and technologies in this sector more widely.

103. The Scottish Government also recognises the importance of raising awareness among consumers and we are keen that this be fulfilled. Consumer Scotland stated previously that, once specific timelines or standards for energy efficiency and low-carbon technologies are brought forward, there will be a need for comprehensive and coordinated public

engagement to support consumers in taking the action that is requested of them;[82] the Strategic Public Engagement Delivery Partnership that is planned may have a role to play with this in future.

104. In addition to people understanding *what* they will be asked to do around the transition to clean heating, it is crucial that they also know *where* they can find support and advice to help with *how* they take the necessary steps (both to meet any requirements and to achieve good outcomes). Ahead of that, there is an ongoing need to raise awareness of the broader benefits of clean, affordable heat as part of the Scottish Government's wider net-zero messaging. This would also help lay the groundwork for a more targeted awareness campaign as and when more specific requirements may be enacted.

RECOMMENDATION 2: Raise awareness of the clean heat agenda and its benefits for consumers

In the short term, the Scottish Government needs to work with the public, private, and third sectors to build consumer awareness of the role that home heating plays in the wider net-zero agenda - the options and opportunities this creates for consumers - and where further information can be sought. As and when specific standards or targets are brought forward, this awareness raising must be ramped up to clearly articulate the requirements, journeys and impacts for the ways that people insulate and heat their homes. These information campaigns should factor in the needs of seldom-heard communities and those who may be generally underrepresented. It should also detail where people should go for advice and support.

Strengthening advice and information

105. A clear theme in the evidence we received was the importance of consumers being able to access unbiased information and advice on the technologies and products that are most appropriate for their homes and needs. As context, a stakeholder noted that:

"Consumers' lack of prior knowledge and the difficulty of comparing different options tends to mean that consumers are largely dependent on installers for information about which system they should install".

> **"I live in fear of my gas boiler breaking down as this seems completely the wrong time to invest in a new one. However, on researching the alternatives, I feel as if I've strayed into a minefield and, even as a fairly savvy consumer, I feel completely disempowered"**
>
> Individual consumer respondent

106. Some stakeholders also highlighted there was a risk of options presented to consumers being limited by installers' preferences or relationships with manufacturers or suppliers. A further complication noted was the differing levels of energy efficiency achieved by heating systems based on a property's individual characteristics (e.g. the impact of a poorly insulated home with small radiators on a heat pump's performance) and the need for bespoke solutions. The CMA have previously noted the potential for consumers to disengage due to product complexity, information being confusing or hard to find[83] and the potential for products' benefits and

performance to be overstated (although, importantly, the CMA also acknowledged that some consumers had positive experiences).

107. In Scotland, independent consumer advice on energy efficiency and renewable technologies is available through the HES service (provided on behalf of the Scottish Government by Energy Saving Trust). Funded by the Scottish Government, the HES service exists to provide householders in Scotland with "free, independent, personalised and impartial advice"[84] about making their homes warmer, reducing energy bills and reducing their carbon footprints.[85] HES also acts as the gateway to Scottish Government funding support.

108. HES gives advice by phone (based on information from the householder and other available sources such as EPCs, where possible), face to face (such as at the person's home or remotely for those identified as needing in depth support) and by email, social media and online.[86] Five regional advice centres cover Scotland, with a view to facilitating locally tailored advice, to leverage local support networks and increase accessibility because outreach staff can visit any part of Scotland.[87]

109. In 2021/22, the HES service provided 1099 consumers with specialist advice via a home visit, 4,211 consumers with remote advice and 507 consumers with a combination of remote advice and a home visit (in addition, the website attracted 3000 users per day).[88] The HES service's role as an independent source of information and advice means that it provides consumers with guidance – it does not recommend or select installers - and HES is not responsible for installations.

110. Key stakeholders viewed the independent nature of the HES service as a significant strength of the landscape in Scotland. One felt that "the current framework of advice and support provides a strong foundation on which to build the kind of comprehensive range of services at a scale needed to support far more customers through successful journeys to zero emissions homes", while the CMA have noted:

"the approach taken by governments to provide centralised information and support to consumers is at different stages with some – particularly Scotland – further ahead than others."[89]

> **"It is extremely difficult nowadays to distinguish between independent advice and companies promoting their products and services when trying to do a web search for impartial information."**
>
> **Individual consumer respondent**

111. Equally, evidence highlighted the importance of consumer awareness of HES's role with advice and support, with the wider environment of online sources of information, of which much is commercially driven and may be of varying quality and accuracy, highlighted as a challenge (we discuss issues with unsolicited direct marketing later in this report). EST's research for the Scottish Government, in highlighting the need for the Scottish Government to provide advice and clear information around requirements consumers may face, noted that information:

"is best suited coming from government sources or trusted and impartial bodies so that the participants know that they are being told what is best for their situation as opposed to just being sold to by someone with a commercial interest."[90]

112. More generally, consumers in vulnerable circumstances may have fewer or less favourable options or may be at greater risk of harm - or of more substantial harm - than typical consumers.[91] The circumstances encountered in everyday life can result in anyone experiencing vulnerability, with this "spectrum of risk" including, among many possible characteristics, relationship breakdown, income shock, indebtedness, illness, literacy, numeracy, bereavement and poor English skills.[92] Chapter 4 highlights a historical case where a specific trader caused considerable consumer harm in Scotland, with a particular impact on consumers who were in vulnerable circumstances. It also outlines our concerns over the scope for increases in rogue trading as the sector scales up and the potential impact that could have on consumers in vulnerable circumstances.

113. Not all consumers will have access to online information and the CMA highlighted that digitally disadvantaged consumers could "struggle to identify available options and to make well-informed decisions" about energy efficiency products.[93] Similarly, Citizens Advice explained that digital disadvantage:

"is closely linked to broader social disadvantage, with digitally disadvantaged people sharing many characteristics around age, education, disability and deprivation as well as other characteristics which contribute to vulnerability".[94]

114. Finally, the Scottish Government has signalled its intention, subject to budgets, to continue funding free and impartial advice for consumers.[95]

OUR RECOMMENDATION

115. Informed decision making is central to good consumer outcomes and easily accessible, impartial guidance is key to that. The importance of consumers being able to straightforwardly avail themselves of independent advice on, for example, the types of issues they should consider and questions they may wish to ask installers is heightened by the general unfamiliarity with the sector.

116. The presence of the HES service means that Scotland is often recognised as being ahead of other parts of Great Britain, which lack equivalent 'single' sources of independent advice. HES's holistic role should simplify navigating the options for consumers and aid informed decision making.

117. In addition, the Scottish Government operates a National Public Energy Agency,[96] Heat and Energy Efficiency Scotland, in virtual form. Its role includes, among other things, "funding for managing and overseeing the operation of our delivery schemes which provide advice and financial support for domestic and non-domestic property owners".[97]

118. In doing more to support consumers, the Scottish Government has options that range from enhancing the HES service to developing its National Public Energy Agency. Ultimately, regardless of the steps taken, the Scottish Government should fulfil its commitment to continue funding free, independent consumer advice; it is also important that the independent advice service is well publicised so that consumers know where to go should they wish to access it, in addition to it having appropriate resourcing to enable it to respond to increases in demand over time.

RECOMMENDATION 3: Future proof provision of independent information and advice

All consumers should be able access a single, reliable and adequately resourced source of independent advice and support, such as the Home Energy Scotland service. The Scottish Government should commit to funding the Home Energy Scotland service – or an equivalent body such as the National Public Energy Agency - sufficiently so it can deliver that function to the appropriately high standard as volume in this sector increases.

CLARIFYING THE FINANCIAL INCENTIVES

119. Consumer Scotland Research[98] indicates that public funding, such as the Scottish Government's Home Energy Scotland Grant and Loan scheme, has been a material enabling factor underpinning consumer decisions to install renewable energy technologies (particularly in the case of heat pumps and battery storage, but also Solar PV). Similarly, the CCC considers that loan and grant funding is necessary for some households to meet the upfront costs to incentivise uptake of low-carbon technologies.[99]

120. A variety of financial support schemes are available to consumers in Scotland, administered at Scottish and UK Government levels. While the provision of financial support is positive, a stakeholder noted that the variety of different schemes contributed to the challenge for consumers to navigate the sector. Table 3.1 summarises a number of those schemes.

Scheme Name	Coverage	Eligibility	Financial Support Available
Home Energy Scotland Grant and Loan Scheme	Scotland only	All owner occupiers in Scotland; credit check for loans.	Grant up to £7,500 (or £9,000 with rural uplift) for energy efficiency and/or clean heating; interest-free loans for top-up.
Warmer Homes Scotland	Scotland only	Homeowners or private rented tenants in / at risk of fuel poverty.	The scheme provides grants to households with a greater emphasis on clean heating.
Private Rented Sector Landlord Loan	Scotland only	Registered private landlords in Scotland.	Up to £38,500 per property, including £15,000 for energy efficiency measures and £17,500 for renewable systems.
Area-Based Schemes (ABS)	Scotland only	Homeowners in areas with high levels of fuel poverty, targeted by local councils.	Energy saving improvements vary by area and project.
Energy Company Obligation (ECO4)	GB wide	Low income, fuel poor, or vulnerable households.	Full or partial cost of energy efficiency upgrades (retrofit assessment for specific measures).
Great British Insulation Scheme	GB wide	Low income and vulnerable households or homes in the least energy efficient bands (D-G).	Full or partial cost of insulation.

Table 3.1: A range of funding support is available.
Key public funding schemes available to consumers in Scotland.

121. The HES service is the sole gateway for consumers to access the Scottish Government's financial incentives, including its Home Energy Scotland Grant and Loan scheme, which is a "universal offer for all owner-occupied households".[100] HES will refer eligible consumers to the most appropriate programme for them.

122. The financial support available through these public schemes can be significant. For example, in terms of the Home Energy Scotland Grant and Loan Scheme:

- Up to £7,500 of grant funding is available for the installation of a clean heating system
- For energy efficiency measures, grant funding is available up to 75% of the combined cost of measures (to a maximum amount of £7,500)

123. An uplift of £1,500 is also available for remote rural and island homes to both the efficiency and clean heating grants. As a maximum grant of £7,500 (or £9,000 with rural uplift) would apply to a clean heating system and energy efficiency measures, the combined grant amount could be up to £15,000 (or £18,000 with the rural uplift). An optional interest free loan is available to help top up any shortfall between grant funding and the cost of installation.

124. The Scottish Government's Home Energy Scotland Grant and Loan scheme launched in December 2022 and updated the HES Loan and Cashback offer. The Scottish Government confirmed that, between the scheme's launch and the end of October 2023, a total of c.£64 million had been issued to householders (that included payment of some funding offers made under the preceding scheme).[101]

125. Table 3.2 shows the number of "unique heat pump installations" supported by the Home Energy Scotland Grant and Loan Scheme and the Private Rented Sector Landlord Loan Scheme since 2019/20. It shows that the average value per household of financial support provided by those schemes is substantial (around £11,000 of financial support per installation in 2023/24, for example).[102] For context, the Scottish Government has estimated that the average total cost to convert a home to a heat pump will be around £14,000.[103]

Financial Year	Number installed	Value of grant funding paid	Value of loan funding paid
2019/20	535	£0	£5,092,225
2020/21	503	£223,318	£4,676,100
2021/22	1286	£7,691,199	£5,004,652
2022/23	1809	£12,959,416	£5,005,659
2023/24	2224	£17,407,118	£7,839,756
2024/25 (to December 2024)	1930	£15,795,161	£9,039,037

Table 3.2: Increasing public funding support for heat pump installations.
Grant and loan funding for heat pumps.[104]

126. For consumers to access governmental funding through the HES service they must use an MCS or TrustMark certified installer (a Green Deal certified installer may be used for certain products if a TrustMark installer is not available locally). Some stakeholder evidence pointed to limited access to accredited installers in certain areas.

WIDER CONSUMER CONTEXT

127. Our investigation found that high upfront costs may remain a significant barrier to widespread adoption of technologies and that government incentives are vital to consumers entering this sector. Stakeholders also highlighted the context of the wider financial pressures faced by many consumers, with the challenges of the cost of living, fuel poverty, energy debt advice and food bank referrals the reality for many people (whether collectively or in isolation). It was also noted that there may be a lack of reliable information over potential savings to be had with technologies.

> **"An early heat pump adopter recounted how their system failed after only nine years, being declared obsolete by the manufacturer, far sooner than their previous gas boiler had lasted. They were then unable to secure a grant for a £10,000 replacement, making them question the value of heat pumps over gas boilers, given the significant difference in lifespan and cost."**
>
> Individual consumer respondent

128. A stakeholder also pointed to the relatively higher cost of electricity compared to gas as a specific barrier to the adoption of heat pumps. Another respondent felt the cost of electricity was "one of the most significant barriers to action", with the slow roll out of smart meters also noted to prevent some households accessing electricity tariffs designed specifically for heat pumps (i.e. pointing to divergent incentives across Scotland). As context, the average price per unit from 1 July to 30 September 2025 will be 25.73p per kWh for electricity and 6.33p per kWh for gas. Similarly, the daily standing charge for electricity will be 51.37p and 29.82p for gas.[105] The key point is that electricity is demonstrably more expensive than gas.

129. The Scottish Government has acknowledged wider cost of living challenges[106] and the relative cost of gas and electricity, albeit highlighting that the levers to control energy prices lie with the UK Government.[107] In 2023, an estimated 34% of households in Scotland were in fuel poverty (c.861k households) and 19.4% were in extreme fuel poverty (c.491k of those 861k households).[108] The Scottish Government indicated recently that a key focus of the Heat in Buildings Bill would be on reducing costs for people, following consideration of reservations around the scope for fuel poverty to be heightened by "burdening every individual householder with an overly onerous responsibility as we decarbonise".[109]

130. EST's research for the Scottish Government also highlighted the importance of widespread financial support:

> **"Many [participants] mentioned that there is an assumption that people who own their own homes have disposable income and money to spend on home improvements, however, given the current economic climate, many people who would be considered financially stable are struggling".[110]**

131. Box 3.3 highlights further consumer motivations and drop out points.

BOX 3.3 CONSUMER MOTIVATIONS AND DROP OUT POINTS

132. Consumer Scotland research indicated that, for heat pumps specifically, current consumers are typically driven by environmental concerns and they tend to "have the time, inclination and ability to carry out significant research to understand how the technology works and also how it can work for them". Stakeholder evidence indicated that changing heating systems is likely to be an infrequent, reactive step for most consumers which echoes research done by Nesta:

"Eighty-five percent of heat pump purchases were planned and 13% were 'distress' purchases (made out of necessity due to the failure of a previous system). In contrast, 51% of gas boiler purchases were planned and 48% were made out of necessity (1% didn't know). The higher proportion of planned heat pump purchases compared to gas boilers is in line with previous research undertaken by Nesta. The research determined that, due to the time taken to design, receive the necessary components and install a heat pump, transitioning to a heat pump is currently all but impossible at times of distress." [111]

133. The CMA previously highlighted potential issues with high costs and funding eligibility as one of various possible consumer journey drop out points in the sector.[112] Consumer Scotland research also notes the importance of services like HES being fully resourced to ensure the best consumer experience and it highlights frictions to accessing funding (e.g. complex paperwork, timescales and installers seeking upfront payment ahead of receiving funding)[113]. Similar issues around timescales and complexity were also highlighted by several stakeholders.

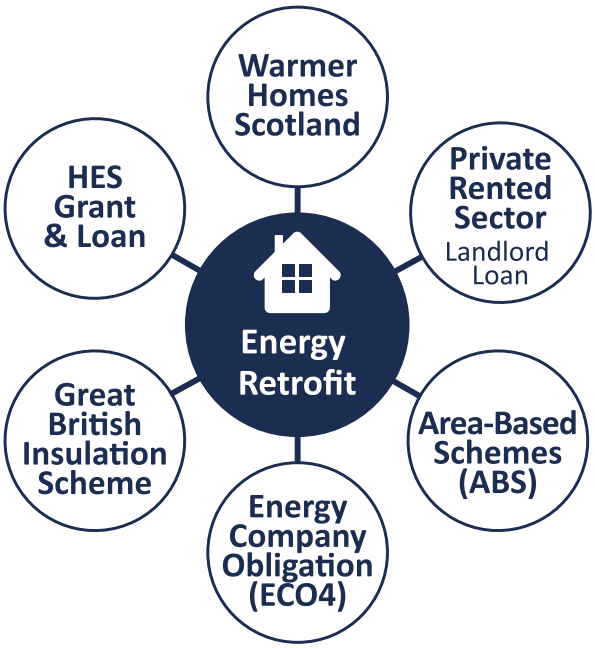


Figure 3.4: Funding for consumers.

Funding open to consumers in Scotland.

PRIVATE FINANCE AND THE GREEN HEAT FINANCE TASK FORCE

134. As well as public funding support schemes, private finance will have an increasing role as the market expands. In 2022, the Scottish Government established a Green Heat Finance Task Force (GHFT) to develop "innovative financial solutions"[114] for building owners in Scotland to support the transition to net zero.

135. In November 2023, the GHTF published its Part 1 report exploring private finance models.[115] It contained nine recommendations for the Scottish Government – including, among others, expanding market engagement within financial services, exploring property linked finance and considering possible incentivisation of homeowners through fiscal and taxation policy - with timelines that spanned 2024 and 2025. The Part 2 Report, published on 3 April 2025, has a collective focus around options for place-based solutions, heat networks and social housing. It contained four key recommendations – including accelerating the development of heat networks - that would ideally be addressed within the next six months.[116]

136. Given the attention of the GHFT on private finance, we took the decision not to consider private finance as part of our investigation. We await the Scottish Government's response to these reports with interest.

OUR RECOMMENDATION

137. High upfront costs and a lack of certainty over the time for financial savings to materialise are potential features of key low-carbon and energy efficiency technologies. Our investigation found that funding to support consumers adopt these technologies is therefore critical.

138. Those high upfront costs could be a material barrier to widespread adoption of technologies and so the fact that there is significant public financial support for consumers is, of itself, positive. The importance of government incentives to consumers entering the sector is heightened by the context of the wider financial pressures faced by many consumers.

139. The HES service being the sole conduit for access to Scottish Government funding should simplify things for consumers, but there is a broader context of schemes administered at the UK level (e.g. ECO4). The mix of grants, loans and eligibility criteria could add complexity and confusion to the consumer journey, potentially accentuated by perceptions that accessing grant and loan funding requires substantial time and effort.

140. As uptake of these technologies increases, demand for funding support will necessarily expand. To the extent that this increase in demand is driven by broader public-policy aspirations, it is important that adequate provision of funding is available to facilitate this future market growth. However, whilst recognising the future growth in demand, we also acknowledge the constraints on the broader public sector funding context. The need to maximise the efficiency, effectiveness and impact of public funding support for energy efficiency and renewable heating is therefore paramount.

RECOMMENDATION 4: Review existing funding support to ensure maximum effectiveness, reach and impact.

The Scottish Government should, by the end of 2026, undertake a systematic review of public funding available to consumers in the sector in Scotland. The review must examine if current schemes meet demand, assess their effectiveness, and ensure funding is allocated efficiently to where it is most impactful - including addressing any unfair exclusions in eligibility. In addition, the Scottish Government should also consider eliminating unnecessary frictions in the application process. It should also focus on identifying the right mix of targeted grant and loan support that will effectively meet future demand and contribute to achieving any specific legislative targets or requirements.

4. Building Consumer Confidence: Protections and Clarity

This section explores the recent and historical unfair trading practices that damage consumer confidence in Scotland's energy retrofit sector.

We analyse evidence submissions, evaluate current enforcement measures (including the role of standards bodies), and propose recommendations to enhance consumer protection.

Raising standards of fair trading

Key Findings	Summary of Findings
Ongoing Issues in the Sector	The sector has suffered for many years from poor trading standards, misleading claims, and scams. This can damage consumer confidence and impede uptake.
Rise in Rogue Trading and Scams	The sector could face increases in rogue trading as it scales up, with scams like spray foam-insulation fraud targeting vulnerable consumers, leading to significant financial losses.
Misleading Marketing of Government Support Schemes	In particular, traders can exploit consumers' lack of understanding about government support schemes, leading to exaggerated claims about energy savings and efficiency.
Need for Strengthened Consumer Protection	The Scottish Government must enhance enforcement provisionsand introduce a more robust framework for consumer protection to address substandard work and rogue traders.

141. The need to remove polluting emissions from heating and improve efficiency will drive a strong demand for consumer engagement in the sector. Unfortunately, however, consumers must navigate markets that have for years been hampered by poor standards of trading, misleading claims, and scams. These are longstanding issues that harm consumer confidence.

142. Several reviews and recommendations have sought to tackle the problems - from the UK Government's sponsored Each Home Counts review in 2016, through to the CMA's Consumer Protection in the Green Heating and Insulation sector and Citizens Advice's Home Safe review in 2023.

143. In April 2024, a coalition of financial, energy and consumer bodies, including Which?, Nationwide, Energy UK, and Citizens Advice, wrote to the then Secretary of State for Energy Security and Net Zero, Claire Coutinho MP. They called for a:

"complete review of consumer protections for those carrying out green upgrades to their home".

144. They argued that enhancing consumer protections to tackle unfair trading is urgently needed. They also suggested that improving safeguards would better encourage private finance as investors are reluctant of the risks from being accountable for substandard work.[117]

145. Informed by responses to our Call for Information, bilateral meetings, and subsequent roundtable discussions, a consensus emerged that consumer protection measures in the sector are currently insufficient.

146. Table 3.1 above highlights key government schemes that provide important retrofit support to consumers in fuel poverty and on low incomes. While these grants and loans undeniably offer positive benefits, they can also lead to serious problems when traders misrepresent and exploit them.

147. We heard that some traders capitalise on consumers' basic awareness of government support schemes - while exploiting gaps in their understanding of the details. This often leads to exaggerated claims about the suitability of the products and the accessibility of the support on offer.

148. The benefits of installations can also be deliberately overstated, suggesting efficiency outputs and energy bill savings that are unrealistic. Consumers are promised lower energy bills for little to no investment, with the criteria for qualifying government support not always clearly stated up front. This is more evident when consumers are targeted through unsolicited email, text messages, phone calls, or doorstep sales.[118] Increasingly, social media is also being used to mislead over official public schemes.[119]

149. These problems are not a recent phenomenon. Just over a decade ago, consumers in Scotland were badly exposed to a highly exploitative 'government approved' retrofit trader, HELMS. Despite the reviews in the years since, evidence persists that bad practices in the sector are causing serious harms to consumers undermining the ambitions of governments to improve domestic energy efficiency.

UNFAIR TRADING – ROGUE TRADING AND SCAMS IN SCOTLAND

150. For over a decade in Scotland, local and national trading standards bodies have worked together to stem growing problems from rogue trading, mis-selling, and scams in the sector.[120] To support this work, the Scottish Government temporarily funded a role with Trading Standards Scotland (TSS) alongside a Heat in Buildings Strategy Quality Assurance policy statement.

151. TSS has maintained a long-standing operation to tackle the problems caused by unfair trading, supporting intelligence gathering, consumer guidance, and enforcement efforts.[121]

> **"The industry continues to be targeted by rogue traders who have identified consumers' lack of understanding of both energy efficiency products and the Government grants and schemes available and exploit these vulnerabilities."**
>
> **Trading Standards Scotland – response to the Call for Information"**

SPRAY FOAM INSULATION SCAMS

152. Over the last two years there has been a rise in spray foam insulation scams as fraudsters target homeowners in Scotland with false promises of energy savings from unsuitable solutions.[122] TSS reported a 42% rise in this issue in 2023 - estimating losses to consumers in Scotland of around £500,000.[123]

153. Allegedly preying on individuals in vulnerable circumstances, the scam involves fake loft inspections and aggressive sales tactics, pressuring consumers into instant decisions to install spray foam insulation.[124] The product frequently proves to be wholly unsuitable - leading to mould growth, structural damage, and mortgage lending issues.[125]

154. In a malicious display of extended fraud, the same traders later revisit their previous targets, masquerading as a different company and charging excessive fees to remove the insulation and fix problems they themselves caused. When they return under their new guise, they further mislead consumers by falsely suggesting an affiliation with 'trading standards' or 'Audit Scotland'.[126]

155. Numerous consumers sought advice regarding spray-foam scams, underscoring the scale of fraudulent activity in the sector. Scotland's consumer advice service (ADS) reported a surge in cases involving elderly individuals and consumers in vulnerable circumstances. They also stated that many of these issues were brought to light by younger relatives who realised their isolated parents had fallen victim to rogue traders.[127]

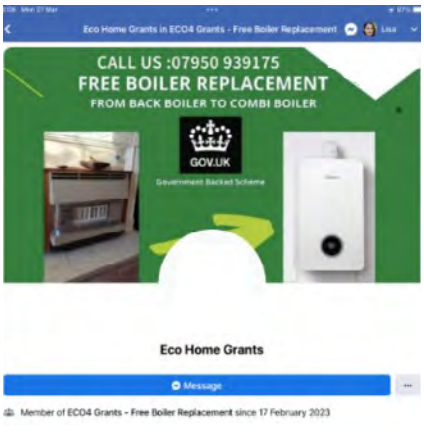
> **"My 86-year-old Grandfather paid £5,400 for insulation, and then was contacted by another firm claiming to be linked with trading standards and advising that the insulation would need to be removed."**
>
> Submission from ADS- Granddaughter of consumer who was allegedly scammed

MISLEADING MARKETING OF GOVERNMENT SUPPORT SCHEMES

156. TSS reported that unfair trading in the sector also extends to the misleading marketing of official government schemes. They suggested that unsolicited direct marketing—such as cold calls misrepresenting government funding – is a key enabler of deceptive practices. They also submitted that AI-driven bots are used to generate automatic leads, while social media adverts collect consumer data for third-party contractors without disclosing that the consumer's details will be passed (or sold) on to other traders.

157. A TSS evaluation report of the work tackling deceptive marketing saw the rectification or suspension of 527 adverts and 57 web pages, preventing an estimated £4.5million in detriment.

158. The proliferation of mis-selling and misrepresentation of publicly funded schemes raises significant concerns about the adequacy of consumer protections. This points to an urgent need for stronger enforcement mechanisms, adequate funding for enforcement bodies, and a renewed commitment to ensuring public money genuinely serves and safeguards households exploring energy efficiency and low-carbon solutions.



TSS forwarded examples of adverts targeting Scottish consumers. They expressed concerns about falsely implied government endorsement of the traders and their work, exaggerated claims about savings, and inaccuracies about the intention of the communications (such as being fronts for lead generation data sharing).

Figure 4.1: Examples of adverts.
Advertising targeting Scottish Consumers.

159. Such has been the prevalence of this problem, that joint consumer education campaigns ("Turn Down Energy Scams" – and "Shut Out Scammers") were launched by TSS with support from HES and ADS.[128] Police Scotland also strongly supported the 'Shut out Scammers' campaign. This included a national TV advertising campaign, supported by Consumer Scotland.

Figure 4.2: Joint consumer education campaign.
Stills from "Shut Out Scammers" and "Turn Down Energy Scams" campaigns.[129]

160. The UK's advertising regulator, the Advertising Standards Authority (ASA), has also begun work to assess how misleading environmental claims in advertising may breach its Code of Practice. This builds on its collaboration with the the CMA in developing the Green Claims Code. As part of this initiative, the ASA will review high-risk sectors known for potentially misleading green claims, including aviation, automotive, and heating.[130]

161. The CMA has also identified misleading claims around "green heating" as a growing concern. It has published guidance for businesses marketing heating and insulation products, emphasising the importance of transparency—particularly when referencing eligibility for government funding schemes.[131]

WIDER POOR TRADING UNDER THE ECO4 SCHEME

162. Alongside scams and misleading marketing, the sector can also struggle with substandard workmanship, even under government-backed schemes. In January 2025, DESNZ issued a press release acknowledging *"widespread cases of poor-quality solid wall insulation installed under inherited Energy Company Obligation 4 and Great British Insulation Scheme"*. DESNZ explained that TrustMark's 'routine checks' had identified deficient installations and that 39 businesses had been suspended from the insulation market.

163. The poor work caused significant losses and damage to properties, generating national media headlines. It also led to a special meeting of the Energy Security and Net Zero Committee to explore the matter with affected consumers and senior representatives from MCS, TrustMark and Citizens Advice. This also led to a debate in the UK Parliament with a consensus reached on the need for greater oversight and accountability in the sector for energy efficiency measures.[132]

HISTORICAL ROGUE TRADING – LEARNING FROM THE GREEN DEAL AND HELMS IN SCOTLAND

164. Rogue trading in this sector is, unfortunately, not just a recent issue. The misuse of 'government-approved' schemes to exploit consumers in vulnerable circumstances has a well-documented precedent in Scotland - notoriously with Home Energy and Lifestyle Management Systems Limited (HELMS) under the Green Deal.[133] The UK's Green Deal was a scheme that aimed at making energy efficiency improvements 'cost-neutral' through equivalent bill savings - the so-called 'Golden Rule' of the policy.

165. HELMS became an approved Green Deal trader and consumer code member (criteria meant to ensure quality assurance and consumer protection). However, they then allegedly perpetrated extensive consumer fraud by exploiting low-income households in Scotland through illegal cold-calling, fraudulent tactics, and false claims of 'free' government measures. By allegedly misusing their assigned authority under a government scheme, they left a lasting legacy of consumer detriment and debt, disproportionately impacting consumers in vulnerable circumstances.[134]

166. The damage caused by HELMS was enabled by weaknesses in the sector's regulation and public enforcement capacity. The Green Deal eventually struggled with low uptake and unfair practices and was largely scrapped in 2015 with the National Audit Office assessing it to not offer value for money.

> **"…the Green Deal, however, was allowed to be abused by criminals who preyed on and exploited households, many of them vulnerable. Ultimately, regardless of one's politics or trust in any Government, no one thinks they are about to be scammed when a Government logo is on the paperwork. We will come back to the Government, who were in effect the enablers of this great fraud, but the actual fraudsters themselves were Home Energy and Lifestyle Management Systems, or HELMS."**
>
> **Gavin Newlands MP – Helms and the Green Deal**

PROTECTING CONSUMERS - PUBLIC ENFORCEMENT CAPACITY IN SCOTLAND

167. The evidence above points to a sector that suffers from problems of widespread unfair trading and misleading marketing - issues that will undermine consumer confidence and detract from achieving a fair transition to retrofit home energy solutions. It is important therefore to look at the laws, bodies and resources that protect consumers from the unfair trading that is prevalent in the sector.

168. The main laws that combat unfair trading in the sector apply UK-wide and are reserved.[135] They derive principally from European Directives devised to eliminate barriers to trade in the EU single market through harmonised rules for fair trading.

169. Although consumer protection laws can be complex to interpret and apply, they are sufficiently broad and flexible to address most forms of unfair trading in the energy retrofit sector—provided they are effectively enforced. Breaches may lead to criminal liability or civil enforcement by local trading standards, TSS, or the CMA. In the most severe cases, criminal prosecution remains the ultimate measure to address serious misconduct and protect consumers.

ENFORCEMENT – CIVIL AND CRIMINAL LAW

170. Evidence from trading standards bodies indicates that prosecuting unfair trading in the sector is often an uncertain process - with consequences limited to either a conviction or no punitive outcome. Specialist Reporting Agencies from local authorities cannot be assured that reports submitted to the Crown Office and Procurator Fiscal Service will result in formal action. Trading standards have noted that many cases involving significant resources and consumer statements can be closed without explanation and deemed not in the public interest.

171. Since the Enterprise Act 2002 (Part 8), trading standards and the CMA have been able to tackle breaches of consumer law through civil enforcement, rather than relying on criminal prosecutions. Originally, this meant they could apply to the courts for orders to stop unlawful behaviour. However, the system has since expanded to allow a wider range of actions—such as requiring businesses to change their practices, provide clearer information to consumers, and offer redress (where appropriate) based on the harm caused.[136]

172. In Scotland, trading standards services have not been able to fully use civil enforcement under Part 8—not because of legal barriers, but due to practical challenges. Many local services are small and often lack the legal resources or risk appetite needed to take cases to civil court. To address this, the body that represents local trading standards services in Scotland, SCOTSS, and TSS have been working to improve enforcement capacity, aiming to make civil enforcement more effective and widely used in Scotland (including in the energy efficiency and low-carbon heating sector).[137]

173. This work gains greater relevance as the powers of civil enforcement were replicated (and enhanced) by the Digital Markets Competition and Consumers Act 2024. Enforcers are now able to seek monetary penalties for infringements of consumer law in appropriate cases.[138] This is a significant new addition to the armoury of enforcers - bringing a flexible and stronger toolkit of options for civil law enforcement.

Civil v Criminal enforcement	Civil Enforcement	Prosecution
Punitive (Penalties imposed for infringements)	✓	✓
Restorative (Possible redress for affected consumers)	✓	[139] ✗
Injunctive (Court orders prevent further breaches)	✓	✗

Table 4.3: Enforcement options available.
Civil and criminal enforcement.

ENFORCEMENT CHALLENGES – RESOURCES AND CAPACITY TO MEET THE CHALLENGE

174. SCOTSS contend that the sector's issues are reflective of wider home improvement works, one of the most significant areas of consumer complaint in Scotland. For example, "home maintenance and improvements" accounted for 13.5% of total case volumes for ADS during the 12 month period to 31 March 2024 - the second highest after "vehicles" at 19.9%.[140]

175. The reasons behind this issue are longstanding, including unskilled labour, rogue traders (commonly known as 'cowboy builders'), and shortages in both skilled labour and materials. Enforcement stakeholders warned that these issues are likely to worsen in the sector over the coming years unless corrective measures are introduced, such as enhanced enforcement resources and mandatory accreditation standards.

176. Even without deliberate wrongdoing, their evidence highlights how poor performance in this developing sector can have serious consequences. Trading standards services acknowledge that, from a consumer perspective, an unintentional poor job can be just as financially damaging as deliberate malpractice.

177. They emphasised that **the capacity of local trading standards teams to provide business guidance and tackle rogue trading has declined over the years. Significant budget reductions, combined with an expanding enforcement remit and competing priorities, have led to a shortage of resources needed to effectively tackle fair trading challenges associated with the expanding heat in buildings sector**.[141]

178. They also contend that many years of funding cuts are now reflected in the age demographic of remaining trading standards capacity - meaning the public enforcement capability to deliver a fair sector for the duration of the transition required over the next 20 years is not in place. Concerns over the future of consumer protection services in Scotland were flagged by Audit Scotland in 2013 and reassessment is now overdue.

SCOTTISH GOVERNMENT – QUALITY ASSURANCE AND CONSUMER PROTECTION

179. It is a major challenge for the Scottish Government's ambitions that the sector it entrusts to deliver energy efficiency and home heating decarbonisation is hampered by unfair trading and insufficient enforcement capacity. The conversion of home heating systems requires a robust fair-trading regime, despite the levers of consumer protection *policy* being reserved to the UK Government.

180. While difficulties do exist, they should not prevent the creation and funding of a framework for consumer protection and quality assurance needed to enhance confidence in the expanding sector. Compared to the funding for the Heat in Buildings programme overall, this would represent a small yet vital investment. For example - from its £1.3 billion budget - the Scottish Government has spent over £575 million this Parliamentary session on energy efficiency and decarbonised heating delivery.[142]

181. The Scottish Government's policy statement on quality assurance and consumer protection[143] (from 2022) set out plans for a bespoke TrustMark scheme specifically for Scotland - focussing on embedding the PAS 2030/35 standards into domestic heat in buildings works, alongside MCS membership requirements for microgeneration systems.[144] The plans included the creation of a Scottish Quality Assurance Consumer Oversight Group to manage their implementation - which in turn would be developed, overseen, and instructed by a new National Public Energy Agency.[145]

182. The main aim for the National Public Energy Agency was to drive the transformation of heating and energy use across homes and buildings, becoming operational by September 2025. Its role was also to include the provision of clear guidance for the public on how to decarbonise heat and provide expert advice alongside coordinating Heat in Buildings delivery programmes.

183. Despite the public consultation on its creation, and it being created in shadow form as Heat & Energy Efficiency Scotland, the lack of further development of the agency suggests a gap in Scottish Government policy to deliver domestic Heat in Buildings conversions.

184. Another central plank of the quality assurance policy was in relation to scams and mis-selling. The Scottish Government's statement acknowledged the seriousness of the issues such as the threat of criminal activity and fraud - recognising the work carried out by TSS and ADS in the sector. That recognition also led to the (welcome) ongoing funding of a post within TSS to specifically tackle these problems. The statement also committed to supporting this work through a coordination role for the Scottish Quality Assurance Oversight Group, including between relevant bodies. To date, there is little evidence that these plans have progressed beyond the stated intentions.

RECOMMENDATION 5 – Strengthen the enforcement landscape

Given the anticipated expansion of home retrofit activity, the Scottish Government must act now within its powers to strengthen the enforcement landscape and protect consumers from substandard work, rogue trading, and scams. This requires a strategic focus on ensuring that enforcement bodies—both locally and nationally—are sufficiently equipped and resourced to tackle unfair trading and safeguard consumer interests. Without intervention, rising demand risks exposing consumers to increased harm—particularly through misleading claims about government-backed schemes. To support effective protections, the Scottish Government should engage with the UK Government on relevant consumer protection policy, and as a priority, update its Quality Assurance strategy in collaboration with consumer protection partners to provide a coherent framework that promotes confidence and compliance.

SELF-REGULATION THROUGH STANDARDS BODIES

Key Findings	Summary of Findings
Self-regulation plays an important role in the sector	In the absence of a public regulator, the sector relies on self-regulation through certification and consumer code bodies to ensure quality and consumer protection.
There's a great deal of complexity	The sector appears fragmented - with multiple standards bodies, leading to confusion among consumers that could undermine their confidence in the overall protections.
There's a need for a holistic review	A review of the standards landscape is essential to simplify accreditation, monitoring, and enforcement, improving consumer protection and confidence as the sector expands.

185. In the absence of a designated public regulator or a suitably resourced enforcement response, standards in the sector fall largely to self-regulation. This is managed through accreditation, certification, and consumer code bodies that deliver quality and consumer protection within the sector across the UK. For consistency we refer to them as 'standards bodies'.[146]

186. Such bodies provide the broad functions of:

1. **Quality assurance** - ensuring businesses are assessed as capable of installing measures to required levels of professional competency and certifying them as such
2. **Consumer Protection** - setting the framework by which traders contract and interact with consumers, protect their investments, and provide redress alongside protection against unfair trading

187. A detailed assessment of the adequacy of individual standards bodies falls outside the scope of this investigation. However, they responded constructively to our Call for Information, and engaged positively in discussions to explore solutions to strengthen quality and consumer safeguards.

188. The CMA's review of consumer protection in the green heating and insulation sector highlighted the benefits standards bodies provide - such as setting standards for the suitability, competency, and ongoing monitoring of traders in the sector. They also perform a vital role of accountability for quality of workmanship for traders that work under government schemes.

189. The CMA expressed some concerns about the system's overall effectiveness, such as variances in the levels of protections provided and unclear and complex complaints handling processes. To address these issues, the CMA published 'principles-based guidance' for standards bodies and later assessed its impact - finding that while progress had been made, significant gaps remained.[147] In particular, dispute resolution remained complicated and financial protections could be further improved in places, such as in governance and scope. Outlined in Table 4.4 are further details of standards bodies and their respective sectoral roles.

Standards body	Summary
The Microgeneration Certification Scheme	MCS is the UK's quality mark for small-scale renewable energy technologies like solar PV, solar heating, heat pumps, biomass, and battery storage. It sets and maintains standards for installations and products, and provides a framework for consumer protection. MCS standards define how renewable energy technologies should be designed and installed using MCS certified products. They are a benchmark for quality developed in close consultation with industry. There are eight UKAS-accredited certification bodies delivering conformity assessments against MCS standards in line with ISO/IEC 17065 requirements. MCS also currently mandates membership of a CTSi approved Consumer Code, of which there are two. MCS is currently reforming its installer certification scheme which goes live during 2025/26 and aims to simplify, streamline, and strengthen the certification process while enhancing standards and consumer protection. MCS is owned by The MCS Foundation, a charity focused on advancing renewable energy and climate action through grant funding and partnerships. Its mission is to drive positive change – decarbonising homes, heat and energy.
TrustMark and Sector Standards	TrustMark is the UK Government Quality Scheme seeking to ensure consumers can find competent tradespeople they can trust. Through a network of Scheme Providers and Registered Businesses, TrustMark aims to raise standards and instil consumer confidence by adherence to standards of technical competence, customer service, and trading practices – all set out in their Framework Operating Requirements. Government funded works must be lodged in a Data Warehouse, quality assurance is supported by desktop and onsite audits allowing analysis of outcomes and targeted interventions into failures. Support is also available via a consumer-to-trader communication platform and a disputes service. Businesses delivering work under the Energy Company Obligation or other Government funded schemes are required to comply with Publicly Available Specifications (PAS) standards from BSI, developed by industry stakeholders. PAS 2035 specifies the requirements on the process for retrofitting domestic dwellings, following a whole house fabric first approach.[148] PAS 2030 specifies the standards for the installation of energy efficiency measures.
Consumer Codes (RECC and HIES)	Both the Renewable Energy Consumer Code and the Home Insulation and Energy Systems Quality Assured Contractors Scheme are approved consumer code schemes overseen by the Chartered Trading Standards Institute. These codes are benchmarks that aim to set high standards of consumer protection through rules and membership requirements for the sector. Through both schemes, consumers are protected by membership vetting and monitoring, deposit protection, and access to alternative dispute resolution systems.

Table 4.4: Standards bodies in the sector.
Standards bodies' have an important role, including with consumer protection.

COMPLEXITY IMPEDES CLARITY AND CONFIDENCE FOR CONSUMERS

190. The complexity that arises from a sector with multiple standards bodies emerged as a key concern among stakeholders, particularly its effects on consumer clarity and confidence. This issue was first acknowledged in the sector's major government review in 2016.[149]

191. This conclusion about complexity being a weakness should not be viewed as a criticism of the individual standards bodies. They play a pivotal role in the sector by enhancing quality standards and strengthening consumer protections—critical safeguards to ensure the effective stewardship of taxpayer funds invested in the industry. However, while each component body operates (largely) independently to certify and deliver quality and protections, their individual development across markets, technologies, standards, and codes has produced a patchwork and confusing overall picture.[150]

192. Complexity has a negative impact on consumers, who will struggle to confidently identify the high quality traders needed for their energy home improvements. They will be unsure what value to place on the protections offered by the membership schemes and the various logos they display (often many on the same paperwork or advertisement). They will be largely unaware where there might be gaps or overlaps in the protection (a trader could be a member of several schemes, for example).[151]

193. There is also evidence of low consumer recognition of the various standards bodies and their respective roles. For example, TSS research in 2023 found that awareness of the key energy membership codes and support organisations was low - with only 2% of respondents aware of MCS, and with consumers codes such as RECC and HIES only marginally more recognisable at 5% and 6% respectively.[152] (This reflects a finding from research commissioned by MCS in 2022 regarding its own brand recognition.).[153]

194. There is now a pressing need to reduce complexity and enhance consumer understanding and trust in reputable brands. The CMA's follow-up assessment of the standards landscape concluded that:[154]

> **"there would be significant benefit in UK government considering carrying out a broader, holistic review of the standards landscape to look at how it could be simplified and protections further improved, informed by the CMA's and others' work in this area"**

195. The calls for a review of the standards landscape to tackle complexity are increasing. For example, the issues with the ECO 4 installations (see above) led to the following statement on the insulation market under the Warm Homes Plan in the House of Commons by the Minister for Energy Consumers, Miatta Fahnbulleh MP, 29 January 2025:

> **"The system can no longer command confidence, which is why we are committed to overhauling it, and to driving up quality and protecting consumers through the Warm Homes Plan. We will look at the entire landscape —from how installers work in people's homes and are certified and monitored, to where home owners turn for rapid action and enforcement if things go wrong—and we will ensure that there is more of a guiding mind overseeing upgrades across the system."**

196. In summary, evidence suggests that the current landscape for insulation and low-carbon heating technologies is fragmented, with overlapping roles and inconsistencies across multiple accreditation and code bodies. This complexity creates confusion for consumers and limits the effectiveness of existing protections.

RECOMMENDATION 6 – Broaden the Warm Homes Plan review

Consumer Scotland supports the planned review of the insulation sector under the Warm Homes Plan by the Department for Energy Security and Net Zero. We recommend that this review is broadened to include a thorough assessment of all insulation and low-carbon heating technologies, with a particular focus on simplifying and consolidating the roles of standards and complaints bodies for consumers. The purpose should be to establish a coherent and consistent consumer journey through the systems of certification, monitoring, complaints and enforcement. This could be achieved through a regulatory framework, potentially overseen by Ofgem. Operating within such a regulatory framework there would preferably be a single body to oversee standards and consumer protection.[155]

INTELLIGENCE AND DATA SHARING, AND GAPS IN PROTECTION

Key Findings	Summary of Findings
Intelligence held by Standards Bodies	Standards bodies hold valuable intelligence on traders, including their accreditation status, performance, and progress towards decarbonisation goals.
Need for Enhanced Data Sharing	Improved intelligence sharing between standards bodies and enforcement agencies is essential to prevent rogue traders from exploiting gaps in the system.
Self-Funders Protection Gap	A significant gap exists between consumers who receive government support and those who self-fund their retrofits, with the latter group facing weaker standards and limited redress options.
Recommendations for Mandatory Accreditation	To close the protection gap, it is recommended that all traders be accredited and required to meet specified industry standards, regardless of how the work is funded.

197. It became apparent from our investigation that standards bodies individually hold a wealth of valuable intelligence about traders and work in the sector.[156] This includes information such as:

1. Those who are accredited and experienced trader members - having good numbers of successful installations to quality standards, yet are subject to very few complaints
2. Those who have achieved accredited membership yet may be subject to several complaints and are under consideration of sanctions
3. Those traders that have been expelled from an accredited body - being deemed not to meet acceptable standards of trading because of numerous complaints of substandard workmanship or trading
4. Those that have been refused membership in the first instance for failing to pass competency or vetted as unfit to trade in the sector for any reason
5. Important data about the progress towards decarbonisation goals through retrofit installation records and numbers

198. While traders that fall under the first category will be sought after as trusted and competent installers, it is important that those falling under categories 3 and 4 do not benefit from any gaps between accreditation processes or intelligence sharing between bodies. For example, if a trader fails to meet competency criteria or is expelled from a standards body, they should then be unable to obscure their history and become approved by another body that has no knowledge of their previous poor trading or membership refusal.

199. Aside from protecting consumers from inadequate standards of trading generally, this will reduce the specific problem whereby a trader falsely claims to be 'approved' to a consumer, persuading them they can access the government funds that flow from approved installations. The consequences for consumers who find that their installations are not by 'approved traders' are significant. This should be avoided as far as possible.

200. Wherever possible, the most severe examples of rogue trading should be referred to local trading standards services in order to consider wider protections for consumers. This will be especially important to avoid traders who 'phoenix' from the failure of a poorly performing legal business entity - seeking to continue without consumers or standards bodies being aware of their poor trading history.[157]

201. We accept that this is not a straightforward issue. In order for this to improve it will require an examination of membership criteria rules and data protection laws. It will also intersect with requirements to avoid illegal collusion between standards bodies and prevent actions that unreasonably restrain members' legitimate rights to trade.

202. There are also restrictions that flow in the opposite direction, i.e. between public authorities and standards bodies. Trading standards services, as public authorities, face a general prohibition on the disclosure of the affairs of an undertaking as it is deemed 'specified information' under Part 9 of the Enterprise Act 2002 – unless that disclosure is permitted under specific gateways. All of these issues would need careful consideration in the case of a revised system of intelligence sharing between the standards bodies themselves - and between standards bodies and public authorities.

203. While there are challenges to sharing information in this way, we believe there is merit in examining the current system to make improvements wherever possible. We heard from stakeholders that they were aware of the issues and remained open to overcoming surmountable issues wherever possible.

RECOMMENDATION 7 – Explore opportunities for enhanced data and intelligence sharing

In partnership with the enforcement landscape (such as trading standards) standards bodies should conduct a review of their information sharing processes so that (as far as legally possible) rogue traders are flagged and prevented from operating. Where possible, the worst examples and most persistent offenders should include referrals to the relevant enforcement agencies – and vice versa.

THE SELF-FUNDERS PROTECTION GAP

204. Alongside the need to overcome complexity (set out above) it was clear that high standards for quality assurance and consumer protection are vital and positive requirements for the sector. These are currently overseen by standards bodies who are mandated as the custodians of quality levels that protect consumers and government investments. However, a key consideration for policymakers is that this can create a gap in protection between consumers who benefit from government support (public-funders) compared to those who will have to pay for retrofit upgrades to their homes through their own funds or finance (self-funders).[158]

205. Simply put, traders that carry out government funded contracts are required to uphold standards of quality through accreditation, whereas traders that currently carry out the work for those who self-fund are not.[159] While consumers can, at the moment, choose to pay for the work and not use an accredited trader, this gap could leave a large number of 'self-funding' consumers at risk of weaker standards of trading and lesser options for redress when things go wrong. It further adds to the complexity of the sector and the risks for consumers who engage.

206. Our investigation heard from stakeholders who believed the gap was a weakness in the system that needs addressed – in particular by mandating that all traders should be accredited and required to carry out installations to specified industry standards, regardless of whether work is paid for by a government scheme or from consumers' own pockets.[160]

207. One pointed out that the lack of regulatory standards and protections for all consumers (especially redress systems) was at odds with other sectors, such as those for energy supply, financial products and communications.[161] In particular, several suggested a better system could be found with something similar to the Gas Safe register by which gas engineers are competently qualified and monitored.[162]

208. Although the current disparity has arisen for understandable reasons, it may not be sustainable in the long term. With significant public investment in insulation and decarbonised heating—targeted at low-income households, those in fuel poverty, and inefficient homes—strong protections for consumers and public funds are essential. We agree this requires engaging only traders who meet accredited standards of quality and consumer protection.

209. However, as the sector expands and requires greater consumer investment to meet carbon reduction targets, self-funding consumers must not be left at risk of weaker protections.

210. In the absence of a universal requirement to ensure that this technically complex and essential work meets acceptable standards, consumers risk engaging unqualified traders who operate outside established sectoral quality frameworks and consumer protection schemes. This gap may encourage cost-cutting practices and result in installation problems and significant consumer detriment, leaving consumers with limited recourse and no access to ADR mechanisms.

211. Although accreditation through a maintained competency scheme imposes compliance costs on the supply side, it raises overall standards, enhances clarity, and incentivises private investment by offering greater security for finance companies. While this will not guarantee flawless installations, it establishes a minimum competency standard that promotes consumer confidence for the sector.

212. The CMA found that the gap was an emerging risk and concern, particularly the lack of accessible ADR it brings for consumers. Consumer Scotland proposes that solutions to close the gap should be put in place before it widens significantly as the sector scales up.

RECOMMENDATION 8 – Levelling the accreditation playing field

In order to inform the overall review of the standards sector, the Scottish Government should partner with the UK Government to establish a system of mandatory accredited quality assurance and consumer protection standards for all traders in the energy efficiency and low-carbon heating sector, regardless of how the work is funded.

5. When Things go Wrong: Remediation and Redress

Having looked at the issues with fair trading, this section explores avenues for redress and support when things go wrong in the sector.

We firstly look at the numbers and reasons why consumer might complain, before exploring the routes to redress both under the law and alternative dispute resolution schemes.

Complaints about low-carbon technologies in Scotland

Key Findings	Description
Complaints in the Sector	Consumer complaint levels remain too high for the sector, particularly related to insulation, solar PV, and heat pump installations. This is due to poor workmanship and lack of accreditation.
Complex and Fragmented Complaints System	The sector suffers from a fragmented system where multiple bodies oversee complaints, leading to confusion and delays for consumers seeking redress or resolution.
Consumer Protection Challenges	Consumers face barriers in asserting their rights, especially when traders have ceased trading or when the installation fails, leaving gaps in accountability and redress mechanisms.
Need for a Unified Complaints Process	There is a strong need for a single, streamlined complaints process and consistent access to a single ADR scheme to simplify and speed up the resolution process for consumers.
Vulnerable Consumers at Greater Risk	Consumers in vulnerable circumstances are disproportionately affected by the complex complaints system, facing difficulties in navigating multiple organisations for resolution and support.
Recommendation for System Overhaul	A comprehensive review of the standards landscape and a unified ADR system is recommended to ensure better protection, faster resolutions, and clearer accountability for consumers.

213. As outlined in previous chapters, Scotland's 2.5 million homes need a substantial overhaul in their heating systems to support the country's climate objectives. The scale of this challenge means that most households will need to improve their energy efficiency and replace carbon-polluting heating systems.

214. This work is important, technical and expensive - and consumers should expect it to be performed by competent traders complying with relevant industry standards. This will improve outcomes and help prevent risks and costly errors. It will also help to deliver better long-term effectiveness of the installed measures.

215. Consumers that engage with this sector are often promised - and should therefore expect - tangible outcomes such as reduced energy bills, increased comfort, and sustainability benefits. However, evidence suggests that unsuitable or poor-quality installations can increase costs or, in the worst cases, can even damage homes. This results in considerable consumer detriment and dissatisfaction, contributing to an increase in complaints and posing a reputational risk to the industry, ultimately hindering sectoral progress.

216. Consumer trust is therefore pivotal to the success of the transition. The sector needs to deliver benefits that uphold high service standards across all stages of engagement, from initial marketing and sales consultations, through to post-installation support.

217. A suitable regulatory framework and clear mechanisms for effective dispute resolution are needed to build consumer confidence. A thriving and reliable sector - capable of advancing Scotland's sustainability objectives and generating meaningful economic gains - can only be achieved through this approach.

218. The sector in Scotland is still growing but has some way to go. For example, in 2023 there were: [163]

- 25,875 Solar PV installations - a 174% increase since 2020
- 6,388 heat pumps installed - a 113% increase since 2020

219. Available data sources suggest that most installations are completed successfully. Despite this, respondents to Consumer Scotland's Call for Information pointed out that the levels of complaints still create significant challenges for consumers.[164]

220. Accurately measuring consumer detriment and dissatisfaction is difficult due to the variety of organisations, advice channels, and complaint systems involved. Existing data probably fails to capture the full extent of issues within the sector. Although most outcomes are positive, the high cost and risks of retrofit home improvements mean that - when problems occur - the resulting detriment can be substantial.

221. In this final section, we look at sources of complaint and underline the importance of after-sales support, with a particular focus on the routes to remediation and redress for the successful adoption of retrofit installations.

CONSUMER SCOTLAND'S ANALYSIS OF COMPLAINT DRIVERS (DATA FROM ADVICE DIRECT SCOTLAND)

222. To gain better insight into complaints within the sector, Consumer Scotland reviewed evidence from the ADS consumer advice database for 2023/24. The analysis focused on three key product groups identified as essential to meeting Scotland's net-zero objectives:

- Solar PV panels and related technologies, such as batteries, inverters and solar thermal (over 250 cases)
- Insulation (just under 200 cases)
- Heat pumps (just over 40 cases)

223. The number of recorded cases in each of these categories is shown in Chart 5.1. The nature of the issues reported in each category are summarised as below (with more detailed analysis contained within the technical report which underpins this report):

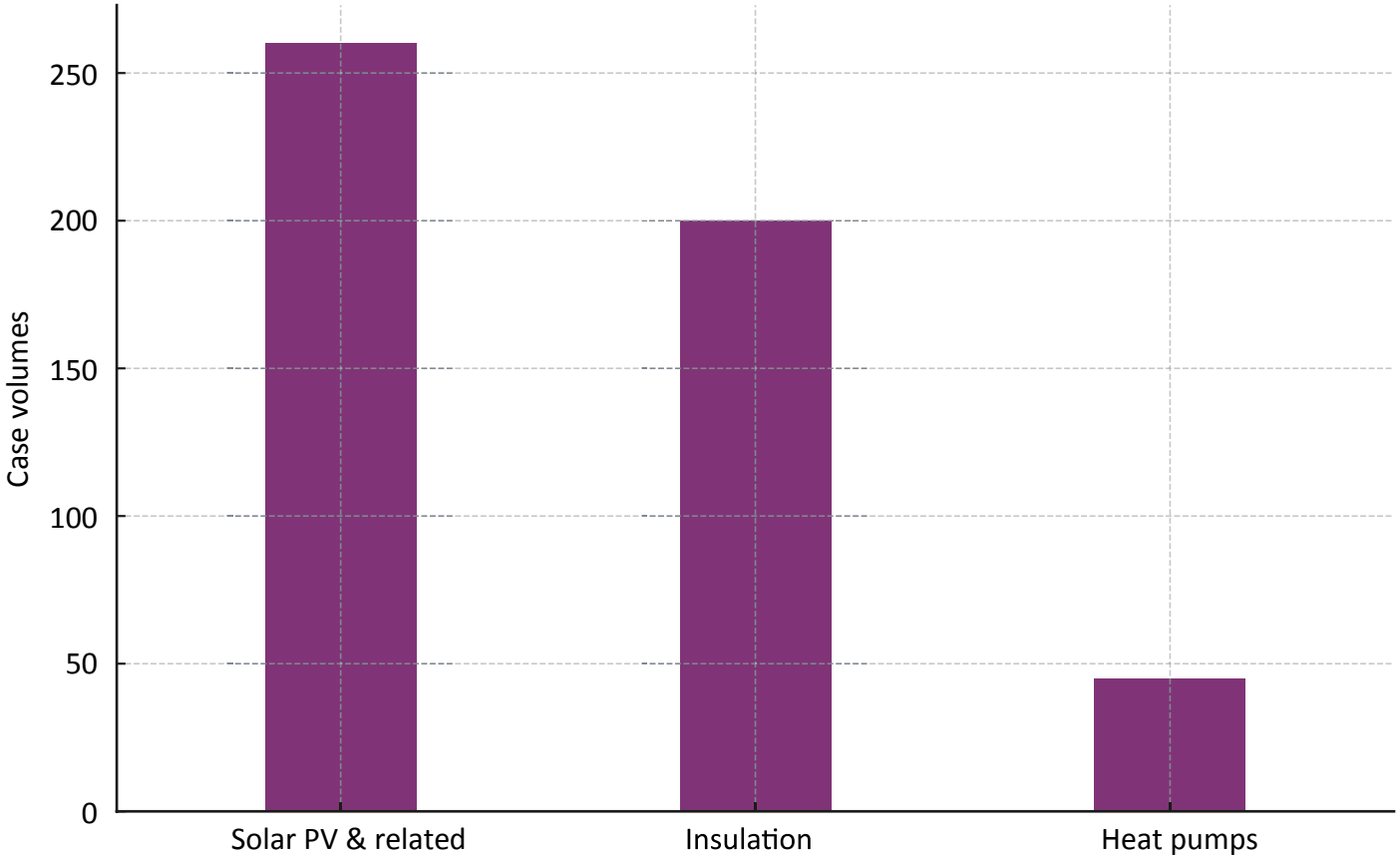


Chart 5.1: Solar PV is the technology raising most enquiries and complaints.
Number of ADS cases relating to low-carbon/energy efficiency product group.

ISSUES WITH INSULATION PRODUCTS

224. In common with the findings from enforcement and advice bodies,[165] the analysis showed a rise in complaints related to spray-foam insulation. This included illegal cold calling, high-pressure doorstep sales, and deceptive tactics. Many instances involved false claims by traders to be 'government' or 'council' backed. Traders would carry out bogus loft surveys then pressure consumers into overpriced installations with promises of public funding that often never materialised.

225. Installations were often rushed after contracts were signed, negating consumers' cancellation rights. This unsuitable work then led to issues like mould and structural damage - problems that left properties unmortgageable. The same traders sometimes later exploited homeowners by charging thousands to remove their own faulty work, falsely claiming to represent official bodies (Couple forced to fork out £11,000 after being targeted in cold call spray foam loft insulation scam | STV News).

ISSUES WITH SOLAR PV

226. We found the main problems with Solar PV work related to accreditation issues, i.e. the installer/trader not being appropriately accredited by MCS as required. A number of cases were recorded where consumers only realised that an installer did not have necessary accreditation after a deposit was paid - or even after the work had been completed.

227. Many of the issues reflected traditional 'home improvement' style disputes, such as allegedly poor workmanship, incorrect installations, weaker system performance against forecasted expectations, and faulty products. In some cases, consumers did not know where to get help for ineffectively performing systems - with a sense that installers and technicians lacked appropriate product expertise on wider issues such as electricity inverters or bird-proofing.[166]

> **"A consumer told us they had Solar PV installed in 2022. The installer was MCS certified when the contract was signed and at installation, but the installer subsequently lost their MCS accreditation before they had issued a Microgeneration Certificate. The consumer was told by MCS that this means they cannot arrange the smart export guarantee without engaging another supplier to certify the work."**
>
> Individual consumer respondent

228. In the Solar PV market, work completed by a trader without appropriate accreditation has very serious consequences for consumers as they will be unable to get certification and support for their system. Failure to have the systems accredited by MCS also means consumers cannot avail themselves of the Smart Export Guarantee and 'sell' their electricity to the grid. In our analysis of complaints there was evidence of traders having lost MCS certification yet fraudulently claiming it remained in place, leaving consumers powerless to source the government loans and grants that only flow from 'approved' installations.

ISSUES WITH HEAT PUMPS

229. Similar to installations for Solar PV, our analysis found that consumers perceived there was a lack of technical expertise shown by traders that sell and install heat pumps. While (overall) complaints and issues for these products were lower than other retrofit technologies, this perhaps reflects the relative lack of 'take-up' of heat pumps so far.

230. The complaints data suggested that there may be a need for greater specialist knowledge among heat pump traders, with the technology being recommended for properties for which they are not always suitable. Some problems arose where heat pumps were installed alongside Solar PV and insulation as a 'retrofit' package. Several cases included allegations of property damage and claims of substandard workmanship, resulting in installations that failed to perform as expected.

THEMATIC ANALYSIS OF ADS COMPLAINTS DATA, 2023-2024

231. Thematic analysis of ADS complaints data for 2023-2024 showed that complaints may occur at any stage of the consumer journey. However, some sector-specific trends can be identified, including a disproportionate number of issues related to:

- Contractual and pre-contractual matters for insulation measures
- The installation and operational performance of heat pumps
- The registration of solar and/or electrical battery storage technologies

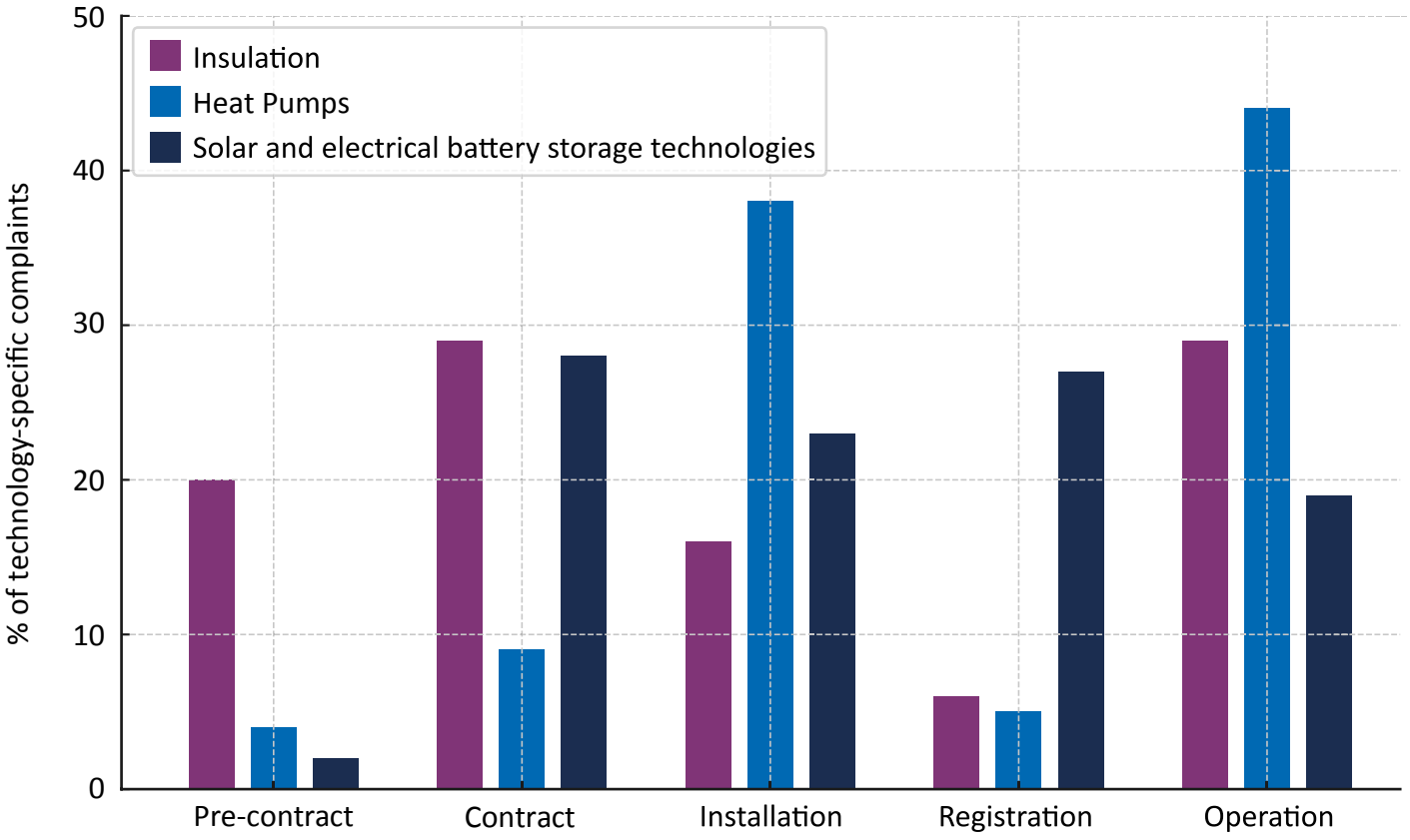


Chart 5.2: Complaints occur at various stages of consumer journey.

ADS complaints data set out by key points.

ADS COMPLAINTS – OVERALL FINDINGS

232. It is worth noting that the data reflects only one year of complaints to ADS and will not represent the entirety of issues from consumers who may seek advice and help from a range of sources. However, the data does show evidence of a sector that is hampered by allegations of mis-selling and unfair trading.

233. Consumers sometimes lack detailed knowledge of the products being installed, making it difficult to make informed decisions or challenge installers. This is compounded by confusion about where to find trustworthy information and advice. Cold-calling practices were identified, with unscrupulous traders seeking to exploit consumers' low awareness of official schemes. Additionally, many consumers are unaware of the acute importance of certification requirements by engaging only with members of quality assurance schemes.

234. Evidence also suggests the industry is not always represented by knowledgeable and skilled technicians – and when disputes arise - consumers can struggle to resolve them due to limited awareness of, or access to, complaints resolution services and ADR routes. Finally, a lack of coordination between government funding schemes, certification bodies, and traders, adds to this complexity, making it harder for consumers to navigate the market confidently.

235. Stakeholder responses to Consumer Scotland's Call for Information echoed the findings from our analysis. Common complaints to standards bodies involved inadequate paperwork and unrealistic performance claims for heat pumps, Solar PV, and battery storage. According to a Solar PV industry representative, non-MCS certified installers often fail to make customers aware that, without proper certification, they will be unable to sell surplus energy to their electricity supplier under the Smart Export Guarantee scheme.

RESOLVING COMPLAINTS – CONSUMER RIGHTS AND PROTECTIONS

236. Having looked at the reasons for complaints in the sector, it is important to reflect the framework for consumers to resolve them. Much like the protections against unfair trading generally (discussed in Chapter 4) consumers enjoy strong statutory protections in their contracts with traders in the sector:

- **Product and Service Quality** - Under the Consumer Rights Act 2015 (CRA) home energy products must be of satisfactory quality, fit for purpose, and as described. Services (such as installations) must be performed with reasonable skill and care. If these terms are breached consumers have a range of legal remedies they can pursue against the trader. The CRA also provides that unfair and prejudicial contract terms in home energy retrofit contracts are not binding on consumers
- **Information and Cancellation** - The Consumer Contracts (Information, Cancellation and Additional Charges) Regulations 2013 require that, before agreeing a contract off-premises (such as in the home), traders must give key information – including the total price and main terms – in a clear and durable format like paper or email. In most cases, consumers have a 14-day cooling-off period during which they can cancel the contract without penalty.
- **Consumer Credit Protections** – The Consumer Credit Act 1974 protects consumers using credit to pay for goods or services when the credit is arranged specifically for that purchase. If the trader breaches the contract or misrepresents what was sold, consumers can make a claim against the credit provider, who shares legal responsibility. This protection is especially important if the trader goes out of business or stops trading.

237. These statutory rights establish some of the minimum statutory protections that consumers should expect within the sector. They give consumers strong rights against unfair trading practices by implying legal obligations that traders must supply quality products and services under fair and balanced contracts. Additionally, these rights provide consumers with the ability to pursue legal action when disputes cannot be resolved through other means.

FINANCIAL PROTECTION PRODUCTS

238. A significant risk arises for consumers when they cannot assert their rights as the business has ceased trading and left the sector. This becomes particularly problematic when the business has collected substantial deposits without completing the work, or leaves unresolved post-installation issues, such as defective products or poor workmanship. In such cases, consumers are left vulnerable to considerable financial losses with limited legal recourse against the defunct business.

239. To safeguard consumers in addition to their statutory rights, certain sectoral bodies insist their members offer financial and consumer protection products, such as Insurance Backed Guarantees (IBGs) and deposit protection guarantees. These are financial products designed to cover the risk of the installer leaving the market - either before the work is completed or in relation to post-installation claims. Where required, the IBG might dictate that the work is completed by another trader or that compensation should be paid to the consumer. However, like all insurance products, they will not cover every eventuality.

240. Stakeholders raised concerns that, because the provision of IBGs is left to the discretion of traders, the balance of incentives is misaligned. They suggested that in effect, the process can become a 'tick-box' exercise with traders securing the least expensive and minimally compliant cover to meet their requirements for scheme membership. This approach may result in little consideration being given to whether the selected policy provides suitable protection for consumers.[167]

241. The CMA has previously raised concerns about IBGs and deposit protection schemes failing to provide uniformly high cover.[168] They found that certain products have limitations, with important exclusions and restrictive requirements in key areas.[169] For example, consumers may not fully understand the cover they provide and may not be aware of their requirements to register the agreement or act within certain parameters. They may also assume (or be led to believe) it gives total peace of mind against all risks when that is not the case. These concerns have been echoed by Citizens Advice.[170]

RESOLVING COMPLAINTS AND ADR IN THE SECTOR

242. Aside from the issues with IBGs, having to enforce consumer rights by going to court is time-consuming, costly, and stressful - making it a measure of last resort. Ideally, complaints should be resolved directly and amicably with traders, or through simpler alternatives.

243. ADR, for example, can provide a faster, more affordable, and less stressful resolution process, promoting fair outcomes and easing pressure on the court system. For maximum effectiveness, ADR processes should be clear, accessible, and easy to navigate.

244. It is of course important that consumers should seek to resolve any complaints directly with the trader in the first instance. However, our investigation found that when consumers do try to raise concerns, they may struggle to identify accountability, followed by a diverse and complex landscape for complaints resolution and ADR in the sector. The primary routes are considered below.

COMPLAINTS UNDER TRUSTMARK

245. Consumers must first address complaints directly with a TrustMark Registered Business and, if unresolved in a reasonable time, the complaint can be escalated to the relevant Scheme Provider. All businesses must have a complaints process and provide financial protections and access to ADR is available through the Dispute Resolution Ombudsman (DRO), provided the complaint is escalated within 12 months. The DRO cannot handle complaints if the business has ceased trading, is no longer registered, or is already under review by another tribunal.

COMPLAINTS UNDER MCS

246. Under the current MCS process, consumers must first raise complaints with the MCS-certified installer. If unresolved after 14 days, they can be escalated to the relevant CTSI Approved Code (for consumer/contractual issues), a Certification Body (for technical installation concerns), or MCS themselves. Complaints sent directly to MCS are referred to the appropriate body - if these processes have been exhausted without resolution and the complaint is related to compliance with MCS Scheme Standards and requirements. The current iteration of the MCS complaints process provides a quality assurance and consumer protection framework across all certified microgeneration technologies and (currently) works in partnership with the RECC and HIES Consumer Codes (the CTSI Approved Codes).[171]

REVISED MCS COMPLAINTS PROCESS TO BE INTRODUCED

247. A revised MCS complaints process is due to launch in 2025/26. This will expand the role of MCS and removes the current mandatory requirement for installers to hold Consumer Code membership. However, until the trader's certification body transfers to the revised MCS scheme,[172] it is a requirement for certified installers to be members of a CTSI Approved Code.

248. Under the redeveloped scheme, MCS will act as a single point of contact for consumers who wish to escalate any complaint they have been unable to resolve directly with the MCS certified installer. This includes MCS taking on responsibility for investigating a much broader range of complaints than has previously been the case – simplifying the process overall. Additionally, agreement has been reached with the DRO to provide a single, regulated ADR provider for all unresolved complaints about an MCS certified installer (which MCS will fund for both installers and consumers).

COMPLAINTS UNDER RECC (CHARTERED TRADING STANDARDS INSTITUTE - CTSI CODE)

249. Under the RECC scheme, if a consumer has a complaint they must first contact the RECC member, who has 10 working days to resolve the complaint. If necessary, the member must inspect the consumer's system within 5 working days (or within 24 hours if the consumer is without heating or hot water). If unresolved after 10 working days, the complaint can be escalated to RECC, to review the complaint, although this is secondary to any investigation by the certification body. Non-binding mediation is offered for free, and the final stage is referral to the Renewable Adjudication Service (CEDR), which charges a fee for both parties. RECC have indicated that their process is currently under review and that their intention is that the adjudication stage will no longer have a fee.

COMPLAINTS UNDER HIES (CTSI CODE)

250. Complaints should be made to the installer in the first instance who should acknowledge the complaint within three working days and aim to provide a resolution within fourteen working days. If the installer fails to address the complaint satisfactorily, consumers can escalate the issue to HIES. They will acknowledge receipt of the complaint and may offer mediation services to facilitate a resolution. If mediation does not lead to a satisfactory outcome, the complaint can be referred to an ADR provider (the DRO).

NAVIGATING THE REDRESS MAZE

251. The above systems summarise the main routes that a consumer may use try to resolve their complaints in the sector (although these will not be exhaustive). Consumers may also seek advice or be referred to a number of different organisations - such as ADS, Citizens Advice, local trading standards services, HES and/or Energy Savings Trust, or the Financial Ombudsman Service.

252. It is evident that the available routes for advice and dispute resolution are diverse and complex.[173] Respondents noted that consumer complaints often span multiple issues, sometimes involving the remits of several organisations. This further complicates the efficient resolution of complaints - leaving consumers confused about which organisations are responsible for overseeing the entire process, or perhaps handling specific elements of their complaint.

> **"From a consumers' perspective, there is a lack of cohesion which may lead to confusion and delays, and some may feel that they are unfairly responsible for identifying which organisation should look at which part of the complaint. The scope of responsibility on the types of issues that each organisation deals with can be unclear and the referral process from one organisation to another may be disjointed."**
>
> Evidence from standards body

253. In particular, respondents highlighted that design-related complaints can often fall between the remit of the standards bodies, certification schemes, and consumer codes - leaving the consumer to be passed back and forth between the various parties involved, with none of them able (or prepared) to take ownership and deliver a positive outcome.[174]

254. One standards body gave the example of the difficulties faced by a young family when an air source heat pump - funded by ECO3/4 - was poorly designed and unsuitable for their home. The system failed to work with their existing pipework and radiators. When the installer left the market, the consumer spent two years working with ten separate organisations to seek accountability for their issues. In the end, the standards body intervened and resolved the problem despite it being outside their usual scope of their scheme.[175] See Figure 5.1 on page 71.

255. Direct evidence from experienced trading standards officers in Scotland echoed these concerns. One officer reported separate complaints involving elderly rural consumers in vulnerable situations—including one case involving a partially sighted person over 80 years old—who were cold-called and mis-sold air-source heat pumps, insulation, and solar panels under the ECO4 scheme.

256. In both cases, their energy bills went up considerably and they were left with systems they could not confidently operate. They then had to navigate a maze of organisations to seek help, including layers of sub-contractor issues. In another case within a rural authority, trading standards intervened after a home was severely damaged by a faulty air-source heat pump installation. However, identifying liability proved difficult, delaying resolution and leaving the consumer in serious distress and financial hardship.[176]

> "In my view there is a lack of oversight and assistance with complaints. If an ECO customer has a complaint then it should be quite obvious who they should contact to try and resolve the issue. We (and they) should not be having to unpick layers of responsibility across various bodies like we all seem to be doing. Some of these consumers are vulnerable either due to health or financial restraint. For that reason alone the methods for complaint handling should be a lot better than for your 'average consumer' which I would suggest they are not. In my view there is a lack of oversight and little accountability for companies who are doing a poor job in this sector."
>
> Trading Standards Team Coordinator

257. Aside from complexity, evidence pointed to gaps whereby accountability drops out when the trader has ceased trading or 'phoenixes'– having left the relevant scheme, perhaps seeking accreditation under another with a new trading identity. There can also be limitations whereby a replacement trader cannot get involved when the relationship between the consumer and the business may have broken down irretrievably.

OUR RECOMMENDATION

258. The overlapping intricacy and gaps in the sector's complaints systems is a weakness. However, this is an overall-system weakness and not a criticism of individual standards bodies. They have developed specific processes under different remits and have responded positively to recommendations from previous reviews.[177]

259. Regardless, the system can be complex with overlapping jurisdictions that impede clarity and accountability for consumers with complaints. Stakeholders highlighted the need for simpler and more common routes to resolution – with clear and direct lines of accountability – and ideally a single ADR scheme available to consumers and installers on consistent terms. This will avoid complexity in the remediation and redress landscape.[178]

260. Above all there needs to be better system of support to avoid consumers who are vulnerable being passed around a maze of confusing bodies that take no direct accountability for the entirety of their installation or complaint. If the trader responsible cannot be identified or has left the sector, then it is especially important that the standards body has the means to advise - and ideally direct another trader to support or assist with resolving the issues – especially where the contract is one backed by government funding. Where that is not possible, then identified weaknesses in IBGs and deposit protection schemes take on far greater significance.

261. Consumer Scotland also agrees that a common complaints route, with a single ADR scheme offered to consumers of all relevant low-carbon technologies and energy efficiency products on equal terms, would significantly improve the consumer experience of the complaints journey and reduce avoidable consumer detriment.

262. Our investigation found that the current system for advice and dispute resolution in the sector is fragmented and overly complex, with consumer complaints often spanning multiple issues that fall under the jurisdictions of different standards bodies, certification schemes, and consumer codes. This complexity creates confusion, leaving consumers without a clear understanding of accountability or a straightforward route to redress. While individual standards bodies have developed processes in line with their specific remits and responded positively to previous recommendations, the lack of a unified system results in overlapping responsibilities and gaps in accountability.

263. We see a need for a simpler, more consistent framework with clear lines of accountability to ensure faster and more effective resolution of complaints. Crucially, there is a need for a more supportive system to protect vulnerable consumers from being passed between multiple bodies, where no single entity takes responsibility for their full installation or complaint journey.

RECOMMENDATION 9 – Improving complaints and redress systems

A streamlined, accessible, and consistent complaints and redress system is essential to protect all consumers, particularly those in vulnerable circumstances. The current system is overly complex, with overlapping responsibilities, accountability gaps, and insufficient financial safeguards from Insurance Backed Guarantees. Previous reviews have highlighted these issues, but delivering wholesale reform may not be wholly within the powers of sectoral bodies. To address this, the UK Government, through DESNZ (and Ofgem), should conduct a comprehensive review of the standards landscape to establish a unified and effective complaints and Alternative Dispute Resolution scheme that ensures better outcomes for consumers.

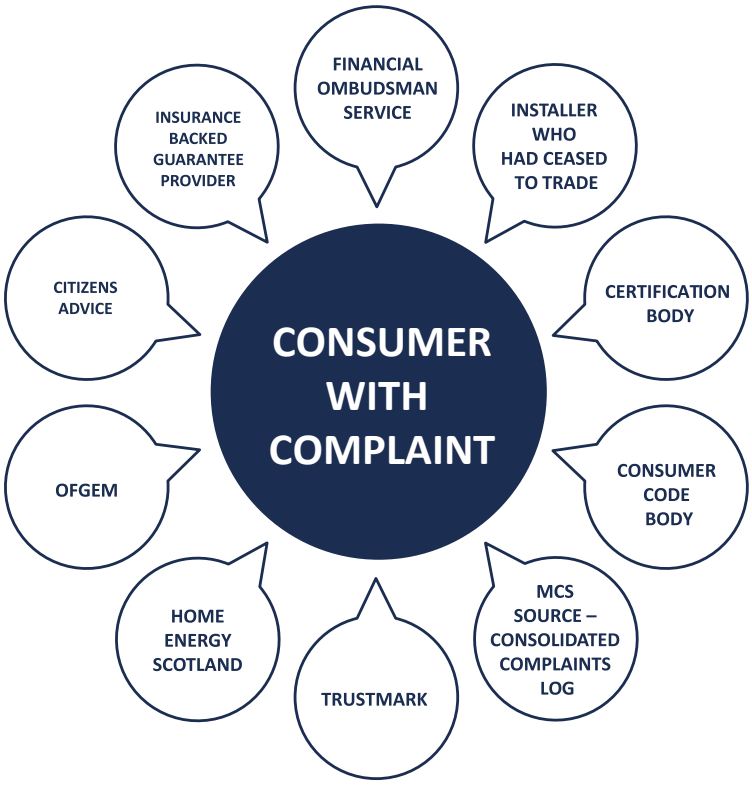


Figure 5.1: The Accountability Gap
One consumer with a complaint had to deal with ten different bodies over two years.

Appendix A

A brief overview of the technologies that are likely to form the basis of affordable heat in buildings for consumers in Scotland.

HEAT PUMPS

264. Heat pumps use electricity to provide a highly efficient source of low-carbon heating (and in some cases cooling) to a building. Operating like a refrigeration unit in reverse, they utilise the latent thermal energy in ambient air, in a body of water, or below ground to evaporate a refrigerant contained within a 'closed loop'. This refrigerant is then compressed – raising its temperature – and passed over a heat exchanger. As the refrigerant gives up its heat, it condenses back into a liquid and is returned to be re-evaporated by the heat source. The majority of heat pumps distribute the heat extracted from the refrigerant via a system of water-filled pipes and radiators, similar or identical to those use in existing central heat systems; air-to-air heat pumps operate like a traditional warm air system to provide space heating to individual rooms or whole properties.

265. Heat pumps can provide heating to individual properties or, when used as the heat source for a low-carbon heat network, groups of properties up to the size of entire towns. Space-saving 'shoebox' heat pumps can be utilised in settings where space is limited (for example: in flats, when connected to a low temperature heat network).

266. Under the right conditions, heat pumps are a means of providing affordable low-carbon space and hot water heating for buildings. Co-location with complementary technologies such as energy storage is likely to assist with operational cost affordability.

RESISTIVE ELECTRIC HEATING

267. Resistive electric heating comprises a range of space heating technologies, including high heat retention electric storage heaters, infrared heating panels, and electric boilers. Much less efficient than a heat pump (but still 100% efficient), they operate by passing an electrical current through a conductor to generate heat, which can then be distributed within individual rooms or to whole buildings, depending on the heating technology employed.

268. Resistive electric heating can provide low-carbon space heating for buildings, but operational cost affordability is often likely to depend on the availability of complementary technologies, such as energy storage.

HEAT NETWORKS

269. Heat networks are large systems of insulated pipes which connect multiple buildings (or multiple units within the same building) to one or more centralised heat sources. Heat is transferred from the centralised source as hot water or steam and is used to provide space and hot water heating. Currently unregulated monopolies, all heat networks in Great Britain will be regulated by Ofgem from January 2026. The Energy Act 2023 appoints Consumer Scotland as the statutory advocate for heat network consumers in Scotland – a role which will take effect when regulation of the sector comes into force.

270. Under the right conditions, heat networks are a means of providing affordable low-carbon space and hot water heating for dwellings and non-domestic buildings.

271. Under the Heat Networks (Scotland) Act 2021, the Scottish Ministers have a duty to deliver the equivalent of 3% of all non-electrical heat demand (assessed against a 2021 baseline) through heat networks in 2027, and 8% in 2030.[179] Heat networks in Scotland currently deliver 1.8% of all non-electrical heat demand when assessed against the same baseline.[180]

MICROGENERATION

272. Microgeneration is defined in the Energy Act 2004 as any technology that generates no more than 50 kWe (for electricity generating technologies) or 45 kWth (for heat generating technologies).[181] Electricity generating technologies include solar photovoltaics ("Solar PV"), small-scale wind turbines, small-scale hydroelectric turbines ("micro-hydro") and small-scale 'combined heat and power' units ("micro-CHP"). Low-carbon heat generating technologies include solar thermal collectors (which absorb heat from the sun and transfer this heat to be stored as hot water in a hot water cylinder via a system of insulated pipes), heat pumps, and bioenergy. 'Hybrid' solar panels can act as both an electrical generator and a thermal generator.

273. Low-carbon heat generating technologies can provide affordable low-carbon space and/or hot water heating for dwellings and non-domestic buildings. Electrical generating technologies do not assist with decarbonising heat in buildings directly, but can support the affordable operation of low-carbon heating technologies.

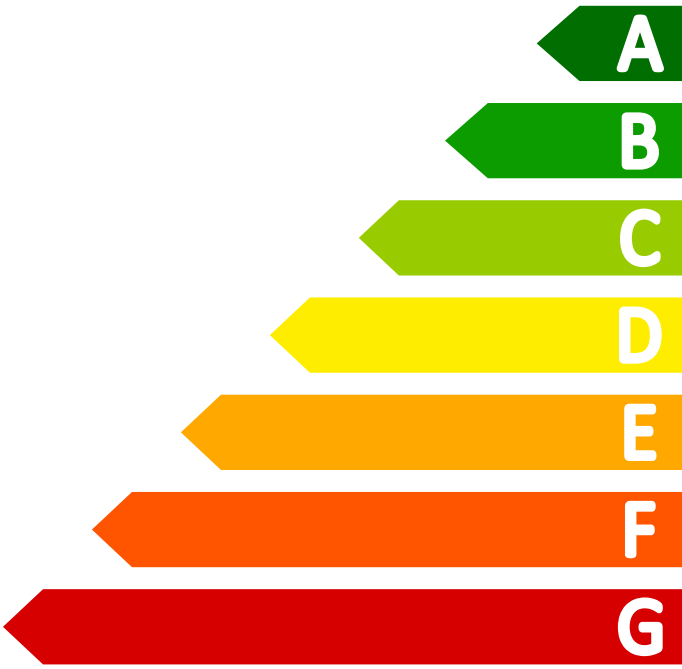
ENERGY STORAGE

274. Energy storage includes a range of electrical and thermal storage technologies, including smart hot water cylinders, heat and electrical storage batteries, and high efficiency electric storage heaters. In general, energy storage technologies do not assist with decarbonising heat in buildings directly, but they can support the affordable operation of low-carbon heating technologies by improving efficiency and/or providing the flexibility to take advantage of fluctuating electricity prices.

INSULATION AND DRAUGHT-PROOFING

275. Insulation and draught-proofing includes a range of materials designed to improve the thermal efficiency of a building. These include energy efficient windows and doors, and products designed to reduce heat loss through a building's floors, walls, and roof. The age and construction of a building is a key determinant of which products are appropriate for use in any given case.

276. In Scotland (but not in England and Wales) it is legal requirement to obtain a building warrant before installing wall insulation to the exterior of any building.[182] Under current planning rules, listed buildings and buildings located in a conservation area can be further restricted in the improvements that can be made.



Appendix B

We collected evidence from various sources, including trade, regulatory and consumer stakeholders.

277. Our Call for Information was open from 24 July 2024 to 30 September 2024 and we received 22 submissions. We also held a roundtable event, we met with other stakeholders bilaterally and four individual consumers contacted us directly. This meant we were able to consider a broad base of views, perspectives and experiences.

278. We have set out a list of stakeholders in Table C.1 and we would like to take this opportunity to thank them for their participation.

Stakeholder
1. Advertising Standards Authority
2. Advice Direct Scotland
3. Citizens Advice
4. Citizens Advice Scotland
5. Competition and Markets Authority
6. Consumer Codes Approval Board / Chartered Trading Standards Institute
7. Energy Saving Trust
8. Existing Homes Alliance
9. Heat Pump Association
10. Heat Trust
11. HIES Consumer Code
12. Individual professional
13. Microgeneration Certification Scheme
14. Qualitymark Protection Ltd
15. Renewable Energy Consumer Code
16. Royal Incorporation of Architects for Scotland
17. Safe World Insurance Group UK
18. Scottish Government
19. Society of Chief Trading Standards Officers in Scotland
20. Thermal Storage UK
21. Trading Standards - Angus Council
22. Trading Standards Scotland
23. Trading Standards - South Ayrshire Council
24. TrustMark
25. UKIFDA & OFTEC
26. Which?

Table C.1: Evidence was gathered from various stakeholders.

List of stakeholders.

Appendix C

GLOSSARY OF KEY TERMS

Term	Description
Climate Change Committee	Established under the Climate Change Act 2008, the Climate Change Committee advises the UK and devolved governments on reducing emissions and adapting to the impacts of climate change.
Competition and Markets Authority	The CMA helps people, businesses and the UK economy by promoting competitive markets and tackling unfair behaviour.
Department for Energy Security and Net Zero	DESNZ is a ministerial department of the UK Government, responsible for UK energy security, protecting billpayers and reaching net zero.
Energy Performance Certificate	A document that provides information about how energy efficient a property is and what measures could be installed to make it more efficient.
Home Energy Scotland	Home Energy Scotland provides an impartial advice service to support homeowners in Scotland to make their homes warmer and reduce their energy bills. The Home Energy Scotland Grant and Loan Scheme provides homeowners in Scotland with a grant, interest free loan or a combination of both to install clean heating systems and energy efficiency measures. Energy Saving Trust manages the Home Energy Scotland Grant and Loan Scheme and the advice service on behalf of the Scottish Government.
Insurance backed guarantee	A financial product designed to cover the risk of the installer leaving the market, either before the work is completed or in relation to post-installation claims (i.e. in relation to workmanship guarantees).
Net zero	This is when the level of greenhouse gases that are emitted into the atmosphere is the same as the amount that is taken out of the atmosphere.
Retrofit	Adding something that was not included when the property was built, such as a different type of heating system, double glazing, or insulation.
Sector	Used to collectively describe the individual product markets listed in Figure 1.2 (e.g. heat pumps and Solar PV), as these are as distinct technologies that deliver different outcomes for householders.
Standards bodies	Used to describe bodies that provide the functions of consumer protection, standards for installations, and accreditations or approvals for various aspects of the sector. While this implies independent self-regulation from government, the work of these bodies intersects strongly with government support schemes.

Table D.1: Glossary.

Key terms used in this report.

Endnotes

1. Consumer protections in the green home heating market to be investigated | Consumer Scotland
2. Consumer Scotland Act 2020 - section 15
3. The Seventh Carbon Budget - Climate Change Committee
4. Heat Networks (Scotland) Act 2021, s92
5. Draft Heat Networks Delivery Plan
6. A consumer framework for addressing climate change - toolkit for policymakers | Consumer Scotland
7. Climate Change Committee estimates - The Seventh Carbon Budget
8. Scottish House Condition Survey 2023
9. Scottish Government - Heat Networks Delivery Plan
10. Consumer Scotland Commissioned Research
11. Climate Change Committee - Scotland's Carbon Budgets
12. Energy Performance Certificate reform consultation - gov.scot
13. HELMS and the Green Deal - Hansard - UK Parliament
14. ECO4 and Insulation Schemes - Hansard - UK Parliament
15. Spray Foam Customers Warned About Removal Scams - Trading Standards Scotland
16. Consumer protection review update on the standards landscape
17. Written questions and answers - Written questions, answers and statements - UK Parliament
18. Review of Ofgem: call for evidence - GOV.UK
19. That could be a body appointed in a similar way to the Energy Ombudsman as the ADR body in the energy sector. The Ombudsman is appointed by Ofgem under the Alternative Dispute Resolution for Consumer Disputes Regulations 2015, and is assessed every two years
20. Consumer protections in the green home heating market to be investigated | Consumer Scotland
21. Meeting of the Parliament: 03/04/2025 | Scottish Parliament Website
22. The Seventh Carbon Budget - Climate Change Committee
23. Written statements - Writeen questions, answers and statements - UK Parliament
24. Consumer Scotland Strategic Plan 2023-2027
25. See sections 7(3)(a)(b) and 15(1)(c) of the Consumer Scotland Act 2020
26. Investigations Prioritisation Criteria (HTML) | Consumer Scotland
27. Consumer Scotland Act 2020 - section 15
28. Converting Scotland's home heating | Consumer Scotland
29. ibid
30. An approved code by the Chartered Trading Standards Institute is one that has met the creiteria to abide by its strict, customer-centric and sector-specific Codes of Practice framework

31. The designated greenhouse gasses are: carbon dioxide (CO2); methane (CH4); nitrous oxide (N2O); hydroflourocarbons (HFCs); perfluorocarbons (PFCs); sulphur hexafluoride (SF6); and nitrogen trifluoride (NF3)
32. Climate Change Act 2008
33. Heat in Buildings Strategy - achieving net zero emissions in Scotland's buildings
34. Heat in Buildings Strategy - achieving net zero emissions in Scotland's buildings - at page 80
35. The Seventh Carbon Budget - Climate Change Committee
36. Delivering net zero for Scotland's buildings - Heat in Buildings Bill: consultation
37. Consumer Scotland response - Heat in Buildings Bill: consultation
38. Heat in Buildings Bill: letter to Minister - gov.scot
39. Decarbonising homes and buildings - gov.scot
40. Consumer perceptions of and engagement with the transition to net zero | Consumer Scotland
41. DESNZ Public Attitutes Tracker: Summer 2024 - GOV.UK
42. Consumers and the transition to net zero | Consumer Scotland
43. Consumer Outlook 2024/2025 | Consumer Scotland
44. The Seventh Carbon Budget - Climate Change Committee, p169
45. Heat in Buildings - supporting the rollout of heat pumps and solar PV in Scoltand | Consumer Scotland
46. Scottish Government response to the EPC Consultation, January 2025, p.15 Supporting documents - Energy Performance Certificate reform consultation - gov.scot
47. Scottish Government (2024) Domestic Energy Performance Certificates - Dataset to Q3 2024
48. Heat in Buildings Strategy - achieving net zero emissions in Scotland's Buildings
49. The Seventh Carbon Budget - Climate Change Committee, p. 164
50. Scotland's Carbon Budgets at page 77 https://www.theccc.org.uk/wp-content/uploads/2025/05/Scotlands-Carbon-Budgets-1.pdf
51. Chart 7.2.3 of CCC 7 carbon report.
52. Heat Networks (Scotland) Act 2021, s 92
53. Draft Heat Networks Delivery Plan
54. Delivering Net Zero for Scotland's Buildings - A Consultation on proposals for a Heat in Buildings Bill
55. Home Energy Scotland Grant and Loan
56. Energy Act 2023 section 61
57. Heat networks regulation - implementing consumer protections: consultation document
58. The Energy Performance of Buildings (Scotland) Regulations 2008 - introduced to comply with EU Directive 2010/31/EU on the Energy Performance of Buildings 59. The Scottish EPC Register
60. Transforming EPCs: Consumer Researcg Insights and Recommendations - Which? Policy and Insight
61. Energy Performance Certificate Reform Consultation 2023
62. Energy Performance Certificate reform consultation - response - gov.scot

63. Local Authorities are the enforcers of the Energy Performance of Buildings (Scotland) Regulations 2008
64. Decarbonising homes and buildings
65. Starting a National Conversation on the Heat Transition in Scotland: Introducing a Strategic Framework for Public Engagement 2023-2026 (at page 4)
66. Net Zero Nation Public Engagement Strategy for Climate Change (at page 11)
67. Net Zero Nation Public Engagement Strategy for Climate Change (ministerial forward)
68. Net Zero Nation Public Engagement Strategy for Climate Change (at page 7)
69. Qualitative research into domestic property owners' attitures to net zero heating and energy efficiency standards - Summary report April 2023
70. Qualitative research into domestic property owners' attitures to net zero heating and energy efficiency standards - Summary report April 2023
71. Heat Transition: Public Engagement Strategic Framework (at page 16)
72. Net Zero Nation Public Engagement Strategy for Climate Change (mid-point review April 2025) at page 2
73. Net Zero Nation Public Engagement Strategy for Climate Change (mid-point review April 2025) at page 35
74. Net Zero Nation Public Engagement Strategy for Climate Change (mid-point review April 2025) at page 3
75. Net Zero Nation Public Engagement Strategy for Climate Change (mid-point review April 2025) at page 10
76. Net Zero Nation Public Engagement Strategy for Climate Change (mid-point review April 2025) at page 20
77. Chapter 3: Our Strategic Approach to 2045 - Heat transtion: public engagement strategic framework - gov.scot
78. Becker, S., Demski, C., Smith, W and Pidgeon, N., 2023. Public perceptions of heat decarbonization in Great Britain. Wiley Interdisciplinary Reviews: Energy and Environment, 12 (6), p.e492
79. Mahapatra, K. and Gustavsson, L., 2009. Influencing Swedish home-owners to adopt district heating system. Applied Energy
80. Smith, W., Demski, C. and Pidgeon, N., 2025. Public perceptions of heat decarbonisation in Great Britain: Awareness, values, and rthe social circle effect. Energy Research and Social Science, 119, 103844
81. Public awareness of and attitudes to low-carbon heating technologies (at page 25)
82. Consumer Scotland response to heat in buildings bill consultation (paras 9.2-9.4)
83. CMA: Consumer Protection in the green heating and insulation sector (Call for Information: findings report 31 May 2023) at page 28
84. EST - Supporting Scotland's Green Ambitions (page 12)
85. HES website (accessed 6 December 2024)
86. EST - Supporting Scotland's Green Ambitions (page 12)
87. EST - Supporting Scotland's Green Ambitions (page 12-14, accessed 6 December 2024)
88. EST - Supporting Scotland's Green Ambitions (at pp 18-20)
89. Consumer protection in the green heating and insulation sector at page 4

90. Qualitive research into domestic property owners' attitures to net zero heating and efficiency standards - Summary report April 2023
91. Consumer Scotland's apprach to working with consumers in vulnerable circumstances (HTML) | Consumer Scotland
92. Finalised Guidance (FG21/1 February 2021): Guidance for firms on the fair treatment of vulnerable customers (pp 9-10)
93. Pp 4-5: Consumer protection in the green heating and insulation sector (Call for information: findings report 31 May 2023)
94. Access Denied (Digital disadvantage and exclusion in the energy market November 2022) at page 3
95. Starting a National Conversation on the Heat Transition in Scotland: Introducing a Strategic Fraemwork for Public Engagement 2023-2026 (at page 24)
96. The Scottish Government's Call for Evidence noted the intention to establish the National Public Energy Agency by 2025 that would lead a transformational change "by taking a people-centred approach to delivery, supporting people and business to switch their heating systems and improve the energy efficency of buildings, while working with the public, private and third sectors to ensure a coordinated apprach across the wider heat decarbonisation delivery agenda in Scotland"
97. The National Public Energy Agency - Energy efficiency - gov.scot
98. https://consumer.scot/publications/heat-in-buildings-supporting-the-rollout-of-heat-pumps-and-solar-pv-in-scotland/
99. The Seventh Carbon Budget - Climate Change Committee
100. Acting Cabinet Secretary for Net Zero and Energy (28 February 2025): Heat in buildings scheme capital allocatins
101. Fossil fuel boilers, Home Energy Scotland Grant and Loan scheme and heat pumps statistics: FOI release - gov.scot
102. Note: MCS's figures on heat pump installations (chart 2.5) include all installations including those receiving funding from sources other than the Scottish Government's Home Energy Scotland Grant and Loan Scheme - such as ECO4 - in addition to installations in new build properties and social housing, and self funded installations
103. Fossil fuel boilers, Home Energy Scotland Grant and Loan scheme and heat pumps statistics: FOI release - gov.scot
104. Heat pump installation funding and statistics: EIR release - gov.scot
105. Those figures are based on the England, Scotland and Wales averages for those who pay by Direct Debit. The prices include 5% VAT.
106. Delivering Net Zero for Scotland's Buildings - A Consultation on proposals for a Heat in Buildings Bill (pp8-9)
107. Heat in Buildings Strategy: Achieving Net Zero Emissions in Scotland's Buildings (p 87)
108. Scottish House Condition Survey: 2023 Key Findings - gov.scot
109. Decarbonising homes and buildings - gov.scot
110. Qualititive research into domestic property owners' attitudes to net zero heating and energy efficiency standards - Summary report April 2023

111. Heat pumps: a user survey (Nesta). Available online at Heat pump user survey report May 2023.docx
112. CMA: Consumer Protection in the green heating and insulation sector (Call for information: findings report 31 May 2023) at page 28
113. https://consumer.scot/publications/heat-in-buildings-supporting-the-rollout-of-heat-pumps-and-solar-pv-in-scotland/
114. Heat in Buildings: Green Heat Finance Taskforce - gov.scot
115. Green Heat Finance Task Force Report Part 1
116. Green Heat Finance Task Force Report Part 2
117. For example: through connected lender liability under section 75 of the Consumer Credit Act 1974
118. For example: Citizens Advice (2021) 19 million targeted by a green scam
119. For example: Trading Standards Scotland (2020) Trandings Standards Scotland suspends misleading energy advertising accounts
120. Trading Standards Scotland is the national enforcement and intelligence team for local authority trading standards services in Scotland. In addition to specialist workstreams, they coordinate and enforce cross-boundary fair-trading cases with local trading standards teams, working with the Society of Chief Officers of Trading Standards in Scotland (SCOTSS). Supporting TSS - and vice-cersa - are thirty-one local authority trading standards teams that constitute the primary frontline consumer protecton resource in Scotland. Local teams have a duty to enforce fair trading law within their area to protect consumers from unfair commercial practices. This work is led collectively by SCOTSS who are the professional managers representing every trading standards service in Scotland
121. TSS Business Plan 2024-25
122. For example: STV News (2024) Couple forced to fork out £11,000 after being targeted in cold call spray foam loft insulation scam
123. Scottish Consumers Urged to Turn Down Energy Scams - Trading Standards Scotland
124. Beware of scammers peddling dodgy spray foam insultaiton - Which? News. This was not limited to Scotland
125. Spray Foam Insulation: Why it's Risky and Could Impact the Sale of Your Home | Scottish Property Centre
126. Evidence from TSS and ADS
127. Evidence submission from Advice Direct Scotland
128. Scottish Consumers Urged to Turn Down Energy Scams - Trading Standards Scotland
129. The advertisement has run at various times on Scottish Television since August 2023. Turn Down Energy also featured a media pack for partner organisations
130. ASA statement on the regulation of environmental claims and issues in advertising - ASA | CAP
131. Marketing green heating and insulation products Consumer law compliance advice for businesses See principle 5, page 11
132. ECO4 and Insulation Schemes - Hansard - UK Parliament
133. Citizens Advice Scotland (2018) Bad Company
134. HELMS and the Green Deal - Hansard - UK Parliament

135. Consumer Protection from Unfair Trading Regulations 2008 sets out a requirement for fair trading in 'business to consumer' relationships through a number of unfair commercial practices prohibited by law. (The UK has since broadly replicated and in certain areas enhanced these provisions in the Digital Markets, Competition and Consumers Act 2024). The Consumer Contracts (Information, Cancellation, and Additional Charges) Regulations 2013 sets out rules for providing consumers with pre-contractual information and the cancellation rules and rights for contracts concluded in consumers' homes or online
136. For example, under compliance measures a trader may be required to be instructed to implement ongoing staff training and internal audits to ensure compliance with fair trading laws and prevent future deceptive practices. Under information measures the business could be mandated to issue a public notice clarifying the full costs of its services and correcting any misleading claims made in previous advertisements. Under redress measures the company may be required to establish a compensation scheme to refund consumers who were misled by false advertising about hidden fees
137. Evidence from TSS and SCOTSS
138. See Digital Markets, Competition and Consumer Act 2024 section 158
139. Except in narrow circumstances where the court makes criminal compensation orders. Disposals and appeals | Scottish Sentencing Council
140. Source - ADS compaint data analysis
141. MSP warns on future of trading standards - Journal of Trading Standards
142. A letter from the Minister for Climate Action, Heat in Buildings
143. Scottish Government policy statement on quality assurance and consumer protection (2022)
144. PAS 2030 and PAS 2035 are British standards that set out the requirements for the installation of energy efficence measures in buildings (PAS 2035). MCS have their own standards that set the technical and quality requirements that govern the installation, performance, and maintenenance of microgeneration technologies
145. The National Public Energy Agency - Energy efficiency - gov.scot
146. Consistent with the CMA's review of the sector - Consumer protection in the green heating and insulation sector
147. Consumer protection review update on the standards landscape
148. PAS 2035:2019 / PAS 2035/2030:2023 - TrustMark
149. See Each Home Counts - December 2016
150. One standards body acknowledged the complexity consumers face from the variety of schemes, accreditations and logos. However, they contend that only very few of the logos related directly to consumer protections and are of value to be promoted directly to consumers
151. The net zero protections puzzle: Helping people piece together home energy improvements
152. A ScotPulse Survey on behalf of TSS, 1,148 responses, 18+ years weighted to reflect gender and agenda, between 8th and 11th September 2023
153. rbm-Consumer-Research-Report-Final.pdf
154. For example, the work by Citizens Advice 'Home Safe' (December 2023) and the Which? report Empowering homewoners to inulate their homes through improved awareness and information, September 2023.

155. That could be a body appointed in a similar way to the Energy Ombudsman as the ADR body in the energy sector. The Ombudsman is appointed by Ofgem under the Alternative Dispute Resolution for Consumer Disputes Regulations 2015, and it is assessed every two years
156. For examole MCS MID hold details for every relevant installation since 2008, while TrustMark's Data Warehouse holds vast records with the ambition to eventually turn it into a consumer-facing platform where homeowners can access a property 'logbook'. RECC and HIES and numerous certification bodies will also hold very important data about relevant businesses and individuals
157. Phoenixing is a practice whereby rogue traders shut down their businesses in an effort to avoid penalties or liabilities, then restart under a new name - seeking to escape accountability and continuing harmful practices
158. Some upgrades may require a mixture of both public and self-funding. The gap in accreditation requirements been highlighted as an emerging issue by the CMA and others
159. As has been stated, accessing public funds through HES' grants and loans schemes requires traders to be either a member of TrustMark or MCS, depending on the technology being installed and the trader concerned
160. Evidence sumission from MCS, TrustMark, Which?, SCOTSS, CTSI and Citizens Advice (discussions)
161. The net zero protections puzzle: Helping people piece together home energy improvements
162. The Gas Safe Register is the legally required registration body for gas businesses and engineers. Engineers must work under a registered business and hold up-to-date qualifications. The register conducts complance inspections, reviewing 38% of businesses in 2023-2024. It also investigates unregistered gas work, imposing sanctions on those who fail to comply and referring serious cases to the Health and Safety Executive (HSE) for prosecution
163. Record year for heat pumps and solar panels in Scottish homes and businesses - MCS Foundation
164. Call for information submissions from HIES, RECC, MCS and TrustMark
165. Evidence from Trading Standards Scotland and Advice Direct Scotland
166. A solar inverter, also called a photovoltaic (PV) inverter, converts the direct current (DC(electricity generated by solar panels into alternating current (AC) which can be used by homes, businesses, or fed into the elctrical grid. Bird-proofing solar panels involves installing physical barriers, like mesh or spikes, around the perimeter of the panels to prevent birds from nesting underneath and potentially damaging the system or reducing its efficiency
167. Rountable discussion with stakeholders
168. Consumer protection f=in the green heating and insulation sector see pages 79-82
169. For example - only narrowly covering the originally agreed guarantee from the business that left the market; having strict requirements to register the insurance and provide key documentation; only offering limited compensation and not remedial works; only covering 'ceased trading' scenarios - and not any other disputes over installation or quality product failures; deposits may only be protected for limited timescales out of step with current sectoral practices
170. Zero guarantee? Net Zero homes need better financial protections | by Nicola Bailey | We are Citizens Advice
171. The CTSI Approved Codes scheme is run by the Chartered Trading Standards Institute. Traders who are members must adhere to the Code's high standards of consumer protection – including fair trading, clear communication and ADR systems

172. MCS anticipates that it will take 12-18 months for all MCS certified installers to transition to the redeveleoped Scheme
173. See also Hitting a Wall: Protecting consumers who install net zero technologies
174. Evidence from MCS
175. Evidence from MCS - the consumer had contacted the installer, the Certification Body, the Consumer Code, MCS, TrustMark, Home Energy Scotland, OFGEM, Citizens Advice, an Insurance Backed Guarantee Provider and the Financial Ombudsman Service
176. Evidence from senior trading standards professionals in Scotland
177. The CMA highlighted improvements made in their update on the standards landscare. For example, MCS' revised scheme takes a simpler, direct, route to complaint handling with a clear ADR ombudsman route, while TrustMark too made changes with a single online reporting form
178. HIES, TrustMark and the revised MCS all utilise the services of the DRO for ADR, and respondents to Consumer Scotland's Call for Information noted that: "Significant progress is underway to address these issues by creating an ombudsman within the sector to provide a single point of contact for consumers to seek redress." (RECC)
179. Scottish Government (2022) Heat Networks Delivery Plan p 11
180. Scottish Government (2022) Consultation on a 2025 heat networks target, p4
181. Energy Act 2004, s 82
182. Condition 17 of Schedule 3 to The Building (Scotland) Regulations 2004