

How to Optimise Heat Pump Deployment and Installation in Scotland:

Local Authority Perspectives

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Acronyms

BETTA	British Electricity Trading and Transmission Arrangements
BM	Balancing Mechanism
CAES	Compressed Air Energy Storage
CapEx	Capital Expenditure
CEGB	Central Electricity Generating Board
CfD	Contracts-for-Difference
CLD	Causal Loop Diagram
CM	Capacity Market
DESNZ	Department of Energy Security and Net Zero
EGL2	Eastern Green Link 2
EtGPR	Electricity-to-gas Price Ratio
GB	Great Britain
GPP	Green Power Pool
GST	General Systems Theory
EV	Electric Vehicles
HVDC	High Voltage Direct Current
kWh	Kilowatt hours
LCCC	Low Carbon Contracts Company
LDES	Long Duration Electricity Storage
LMP	Locational Marginal Pricing
MW	Megawatt
NETA	New Electricity Trading Arrangements
NGESO	National Grid Electricity System Operator
Ofgem	Office of Gas and Electricity Markets
OpEx	Operating Expenses
OTC	Over the Counter Contracts
REC	Regional Electricity Company
REMA	Review of Electricity Market Arrangements
ROI	Return on Investment
SCoP	Seasonal Coefficient of Performance
SMP	System Marginal Pricing
SPF	Seasonal Performance Factor
TOU	Time-of-Use (tariff)
TWh	Terawatt hour

1. Executive Summary

This report investigates the issues that influence the rate of heat pump installation across the social housing controlled by local councils in Scotland. The data was collected in January 2025 via semi-structured interviews with senior managerial staff directly responsible for their authority's clean heat strategy, and triangulated with issue specific empirical, statistical, and public policy information. This research has found that the rate of heat pump installations across local authorities in Scotland is influenced by material, regulatory, and managerial factors.

Principal Findings

Because local authorities have the autonomy to determine their own housing strategies and budgets – and, aside from new-build homes are not obliged to install heat pumps or replace gas boilers – senior management responsible for local authority heating strategy exhibit significant diversity in their approach to heat pump deployment and installation. Local authorities staffed by Net Zero housing managers, who are specifically motivated to increase their heat pump installations, will seek to replace existing gas boilers with heat pumps wherever possible, given budget constraints. In contrast, local authorities led by conventional housing managers limit their heat pump installations to off-gas properties and new builds.

All local councils in Scotland report financial challenges that limit their ability to increase the rate of heat pump installations. Concerns about the running costs of heat pumps—especially in the context of high electricity prices relative to gas—underpin housing managers' preference for improving the energy efficiency of their stock before or alongside heat pump installations.

Even if financial challenges related to heat pump installation were set aside, several logistical and technical barriers would remain. Heat pump installations as part of whole-house retrofits (a key component of the fabric-first approach) often take months to complete. Local authorities would need a practical relocation strategy to decant tenants during this period, while still fulfilling their duty to house vulnerable households amid a housing shortage. Additionally, there is a shortage of properly skilled heat pump engineers, installers, surveyors, and retrofitters in Scotland. As such, increasing the rate of heat pump installations would require a corresponding increase in the volume of skilled labour available.

- 1. The professional stance of housing managers is a key factor influencing the rate of heat pump installations within a local authority. At one end of the spectrum are proactive housing managers who actively seek opportunities to install heat pumps wherever possible (Net Zero housing managers). At the other end are those who remain sceptical that heat pumps are necessarily the most appropriate heating systems for their tenants (Conventional housing managers).
- 2. While both Net Zero and Conventional housing managers will increase their heat pump installations over time through new builds and off-gas retrofits, conventional managers are not actively seeking to install heat pumps in homes connected to the gas network at this time.
- 3. The primary reason Net Zero housing managers had not installed as many heat pumps as they would have liked is the lack of financial resources, given a funding environment where only partial financing is available. Installing heat pumps in their existing stock presented additional financial challenges, as housing managers highlighted the need to make fabric improvements to homes that were often cost-prohibitive.
- 4. Net Zero housing managers highlighted challenges related to the physical access required for installation, explained that retrofitting heat pumps involved a degree of disruption and inconvenience that most tenants could not tolerate. Consequently, decanting tenants was an important element of the heat pump retrofitting process.
- 5. Although the fabric-first approach and heat pump installations are complementary strategies for decarbonising homes and advancing Net Zero objectives, the prioritisation of fabric first, in the context of limited council resources, has slowed the rate of heat pump installations. Because councils are prioritising energy efficiency upgrades first, large-scale deployment of heat pumps may only occur sometime in the future.
- 6. Conventional housing managers were reluctant to replace gas boilers with heat pumps in their existing stock. They tended to prioritise affordable rents, lower heating bills, ease of maintenance, and minimal disruption to tenants' heating routines.
- 7. Conventional housing managers repeatedly highlighted the unit cost discrepancy between heat pumps and gas boilers as a significant barrier to adoption.
- 8. Conventional housing managers do not view housing stock decarbonisation as their primary mandate. Instead, they prioritise providing access to healthy, affordable, and warm homes. Consequently, they are wary of any new technology (whether clean heat or otherwise) that may impose burdens on their tenants without a clear household benefit.
- 9. Conventional housing managers were adamant that any program to retrofit heat pumps across their existing stock – in the absence of full government funding – would require tenant rent increases.
- 10. Conventional housing managers highlighted tenant concerns about the efficacy and performance of heat pumps. They reported complaints of higher-than-expected heating bills, inadequate heating, and unreliable heat pumps that required frequent maintenance call-outs.

Policy Recommendations

- 1. To address the financial barriers to heat pump installation across existing local authority housing stock, the government may consider increasing funding rates for heat pump units, their installation, and the associated system and fabric upgrades to between 75% and 100%.
- 2. Before funding increases, it would be prudent to accurately determine the minimum levels of insulation required, as well as the optimal system design features (such as emitter sizing, operational settings, and flow temperatures), to ensure optimal heat pump performance.
- 3. To address the variance in housing management priorities regarding the deployment of heat pumps, the government could consider mandating the replacement of gas boilers with clean heat technologies (including heat pumps), once the necessary funding framework is in place.
- 4. The Scottish Government could explore a nationwide relocation (i.e., decanting) program to support local authority clean heat and retrofit strategies. Potential options might include, but are not limited to, public private partnerships (PPPs), incentivised voluntary moves, the use of vacant properties, adaptive building reuse, and joint council initiatives.
- 5. Tenant choice and consultation are crucial to engaging communities in co-designing relocation plans, enhancing tenant well-being, and minimising resistance.
- 6. The Scottish Government could consider revising engineer licensing requirements to expand the pool of qualified heat pump installers. For example, transforming the Gas Safe Register into a 'Gas and Clean Heat Safe Register,' where engineers are licensed to install both gas boilers and heat pumps, consolidating the qualification process under one system.

2. Introduction

This report presents findings arising from a series of semi-structured interviews with local authorities across Scotland. The research sought to investigate and understand the issues that influence the rate of heat pump installation across the social housing controlled by these local councils. In February, 2025, the Climate Change Committee suggested that to meet climate targets, half of all homes in the UK will need to have heat pumps fitted – requiring around 450,000 heat pumps to be installed annually by 2030 (CCC 2025). A considerable increase from current levels of around 60,000 per annum. If Scotland is to achieve Net Zero by 2045, local authorities will need to increase their rate of heat pump deployment significantly. The evidence suggests, however, that there are regulatory, managerial, financial, logistical, and labour factors that combine to limit the number of heat pumps local authorities install each year.

Even though these Net Zero targets are otherwise mandatory, local authorities are not obliged to install heat pumps or replace gas boilers with clean heat technologies across their existing stock, decisions around heat pump deployment are discretionary at the local level and driven by commercial considerations as well as social priorities. Given the existing funding landscape is insufficient to cover the total cost of heat pump installations for local authorities (providing a maximum of 60% for the unit and installation, and a maximum of 50% for fabric upgrades), housing managers balance a desire to decarbonise their stock at pace against limited housing budgets. Heat pump installations are around three times more expensive than gas boiler replacements and often necessitate additional retrofitting work such as new pipework, larger emitters and improved building fabric.

Not all housing managers are convinced that heat pumps are the best option for tenants on fixed or limited incomes who presently receive a gas connection to their homes. Therefore, local authority decarbonisation strategies can be broadly distinguished between those that make a specific effort to install heat pumps in their existing on-gas homes, and those councils that direct their efforts exclusively to off-gas regions.

Regardless of whether a local authority is actively seeking to replace gas boilers with heat pumps or not, all housing managers are faced with similar challenges: heat pumps are considerably more expensive than gas boilers and often require additional retrofitting work and insulation. These facts mean councils require additional financing, as well as logistical solutions for decanting tenants if they are to increase their rate of heat pump installations in the near term. Local authorities may also gain economy of scale commercial advantages if they integrated heating systems (i.e., heat pumps) into their broader retrofitting programmes.

3. Background

According to the latest government figures, there are some 36,000 heat pumps installed in Scotland, representing around 1.4% of all dwellings (Scottish Government 2024c). While the number of installations has been steadily increasing year on year (as indicated by Table 1), the rate of heat pump installations falls short of what is required to decarbonise Scottish housing stock by 2045 – as suggested by the proposed Heat in Buildings Bill (Scottish Government 2025b).

Table 1. Number of Heat Pumps Installed in Scotland per Year (2019–2023).

Year	2019	2020	2020	2022	2023
Heat Pumps	2,448	2,993	4,667	5,146	6,388

Source: Scottish Government 2024c.

Part of the government’s Net Zero strategy is to have local authorities decarbonise their housing stock by replacing gas boilers with clean heat technologies including heat pumps. There are 32 local authorities across Scotland with a combined total of 323,146 dwellings, accounting for almost 12% of the nation’s total housing stock (Scottish Government 2024d). Six of these councils (Argyll and Bute, Dumfries and Galloway, Western Isles, Glasgow City, Inverclyde, and Scottish Borders) transferred all their housing stock to housing associations between 2003 and 2007 through a process known as stock transfer, leaving 26 local authorities in Scotland with social housing.

The Scottish Government directs local authorities to decarbonise their stock through the Energy Efficiency Standards for Social Housing (ESSH 2014 and 2019), the Local Heat and Energy Efficiency Strategies (LHEES 2022), the New Build Heat Standard (NBHS 2024), and the proposed Heat in Building Bill.

Table 2. Housing Decarbonisation Mandates and Recommendations for Local Authorities in Scotland in 2025, by Legislation.

Legislation	Mandates (Required Actions)	Recommendations (Encouraged Actions)
Energy Efficiency Standard for Social Housing (ESSH) (2014 & 2019)	<ul style="list-style-type: none"> - ESSH (2014): Social landlords, including local authorities, must meet specified energy efficiency ratings by 31 December 2020. - ESSH2 (2019): Social rented homes, under local authority management, must achieve EPC Band B or equivalent (or the best possible standard) by December 2032. - From December 2025, local authority homes below EPC Band D cannot be re-let (subject to exemptions). 	<ul style="list-style-type: none"> - Local authorities are encouraged to continue improving energy efficiency in their housing stock to contribute to Scotland’s net zero goals. - Consideration of installing renewable heating systems where feasible.
Local Heat and Energy Efficiency Strategies (LHEES) (2022)	<ul style="list-style-type: none"> - All Scottish local authorities are mandated to prepare, publish, and update a Local Heat and Energy Efficiency Strategy (LHEES) and Delivery Plan by the end of 2023, with updates every five years thereafter 	<ul style="list-style-type: none"> - Councils should prioritise areas with the highest fuel poverty and carbon reduction potential. - Authorities are encouraged to collaborate with private sector stakeholders for large-scale decarbonisation projects.
New Build Heat Standard (NBHS) (2024)	<ul style="list-style-type: none"> - From April 2024, local authorities must ensure that all new build properties within their jurisdiction are constructed with zero-emissions heating systems, including heat pumps, heat networks, or electric heating systems. - Prohibits the installation of traditional fossil fuel heating systems (e.g., gas or oil boilers) in new builds. 	<ul style="list-style-type: none"> - Local authorities are encouraged to support the transition to clean heating by offering guidance to developers and homeowners. - Authorities may explore local energy networks (e.g., district heating) as part of planning for new developments.

Heat in Buildings Bill (Proposed, 2024)	<ul style="list-style-type: none"> - While specific mandates for local authorities are under consultation, the bill proposes overarching requirements that may impact local councils, such as: - Transitioning all buildings to zero-emissions heating systems by 2045. - Setting minimum energy efficiency standards for buildings by 2033. 	<ul style="list-style-type: none"> - Local authorities are advised to support public awareness campaigns on decarbonisation and available grants. - Encouragement to facilitate early adoption of clean heating systems within their jurisdictions.
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Source: Scottish Government 2019; 2022a; 2025b; 2025c.

As indicated by Table 2, the Scottish Government has not mandated the installation of clean heat technologies (including heat pumps) in existing homes. It is only since April 2024, under the New Build Heat Standard (2024), that clean heat technologies have been mandated for new build projects. Table 3 details the public funding available to Scottish local authorities to promote the installation of clean heat technologies including heat pumps. At present, a maximum of 60% of the cost of the heat pump unit and its installation costs, and a maximum of 50% of any additional fabric upgrades undertaken alongside the installation are covered.

Table 3. Scottish Government Funding Initiatives Available to Local Authorities to Promote Clean Heating Systems in 2025, by Policy.

Government Policy	Funding Details
Social Housing Net Zero Heat Fund (August 2021)	Up to £200 million available until 2026, offering up to 60% of total capital expenditure (CAPEX) for zero direct emissions heating systems and up to 50% for energy efficiency projects, with a maximum grant of £5 million per project.
Scotland's Heat Network Fund (2021)	Provides financial support for the development of heat networks and the decarbonisation of existing ones, potentially incorporating heat pump technology. Specific funding amounts vary by project.

Source: Scottish Government 2024a; 2024b.

Given the adoption of clean heat technologies such as heat pumps has been (and remains) at the discretion of local authorities, while they must cover a substantial portion of the costs, understanding their perspectives is critical to explaining the low rate of heat pump installations overall in Scotland.

4. Methodology

The research relies on interview data collected in January 2025 via semi-structured interviews with four (4) local authorities across Scotland. The interviews lasted between 45 minutes and an hour, were recorded and transcribed, and undertaken over Microsoft Teams. To enhance the quality of the data, the interviews were undertaken anonymously and subjects were invited to speak freely based on their personal and professional experiences.

Table 4. Sample Description: Stock Size and Heat Pump Installations by Interviewee.

Interviewee ID	Role	Portfolio size (homes)	Total heat pumps installed	Heat pumps (retrofit)	Heat pumps (new build)	Heat pump stock coverage (%)
LG1	Senior Housing Development Officer	10,500	50	4	46	0.5
LG2	Senior Housing Manager	10,000	86	6	80	0.9
LG3	Senior Housing Manager	5,100	12	12	-	0.2
LG4	Head of Housing & Property Services	6,400	1,003	250	753	15.6

All interviewees were senior managerial staff directly responsible for their authority's clean heat housing strategy. The sample is representative as the four local councils were geographically and socio-demographically varied. As indicated by Table 4, the housing managers were each responsible for housing stock portfolios of average size for Scotland.

The interviews began with several predetermined questions (see Appendix A). Once these had been addressed, follow-up questions and further probing were initiated to gain more detailed information about the issues raised.

Once the interviews had been transcribed, the data was sifted using manual thematic coding (where recurring ideas, patterns, and themes were identified). Following the thematic coding of all interviews, axial coding was undertaken where the initial codes were organised into relationships (e.g., cause-effect, similarity, contrast) and critical patterns and interactions were identified.

As illustrated by the forthcoming discussion of results and presentation of findings, all interview data were further contextualised and validated empirically through research triangulation with government and local authority statistics, as well as the body of academic and research literature.

5. Research Findings

The following section presents the findings from interviews with senior housing managers across local authorities in Scotland. It begins with a broad overview of the interviewees' perspectives on the heat pump installation strategies they influence and implement.

The report then offers the researcher's reflections and interpretation of these findings, followed by a concluding summary and a list of recommendations based on the evidence.

5.1. Local Authority Perspectives

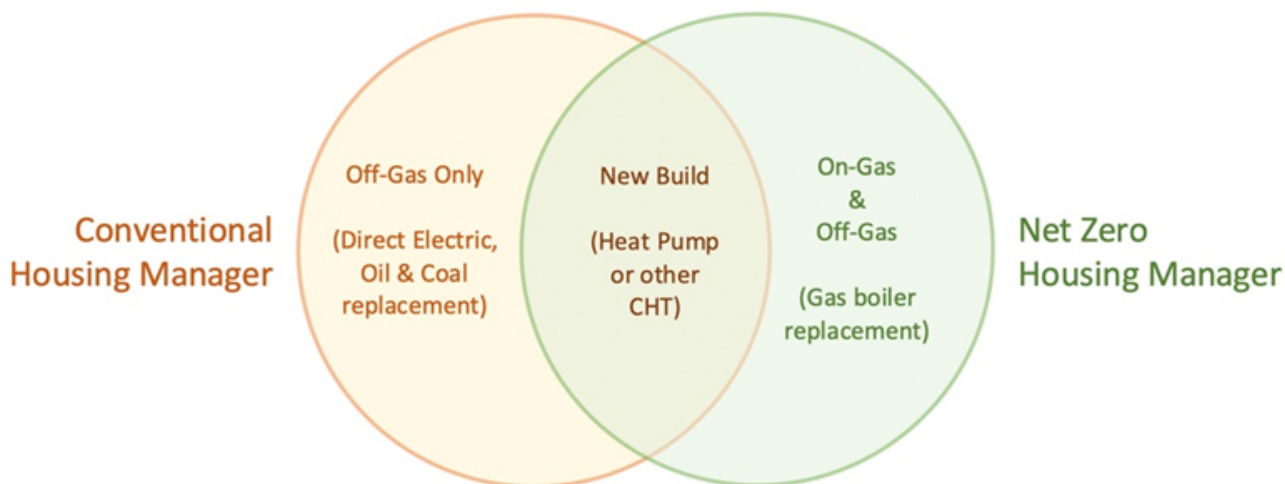
Under the Housing Act (2001) and Local Government Act (2003), local authorities have the autonomy to determine their own housing strategies and budgets. Interviews with senior management responsible for local authority heating strategy revealed significant diversity in the approach to heat pump deployment and installation. These authorities operate independently in this area, not pursuing a unified approach to clean heat, nor adopting the same decarbonisation strategies or sharing common beliefs or understandings about heat pump deployment, installation, operation, and maintenance.

At one end of the spectrum are proactive housing managers

who actively seek opportunities to install heat pumps wherever possible (Net Zero housing managers). At the other end are those who remain sceptical that heat pumps are necessarily the most appropriate heating systems for their tenants (Conventional housing managers). This research has found that a key factor influencing the rate of heat pump installations within a local authority is the professional stance of housing managers. In the absence of government mandates, housing managers have the discretion to allocate their limited housing budgets as they see fit, which may or may not include the installation of heat pumps.

The clean heat strategies reported by housing managers can be characterised across three domains: new builds, existing stock on-gas, and existing stock off-gas. Some housing managers had been installing heat pumps in all their new builds over the past three to five years, systematically replacing off-gas heating systems with heat pumps, and replacing gas boilers with heat pumps as part of whole-house retrofits where possible. Other housing managers had continued to install gas boilers in their new development schemes (until the 1st April 2024 NHBS mandate came into force), were only replacing direct electric off-gas heating systems with heat pumps, and were, in principle, opposed to replacing gas boilers with heat pumps across their existing stock.

Figure 1. Venn Diagram of Heat Pump Installation Strategies.



The interviews revealed that there is no single, consistent local authority clean heat strategy across Scotland. Figure 1 illustrates the basic distinction between net zero and conventional housing managers in terms of their broad heat pump installation strategies. While both categories of housing managers will increase their heat pump installations over time through new builds, conventional managers are not actively seeking to install heat pumps in homes connected to the gas network at this time.

When discussing the barriers and drivers to heat pump deployment encountered by local authorities, it is helpful to distinguish between those staffed with housing managers who actively seek to install more heat pumps across their jurisdiction and those that are not specifically motivated by this concern. The following section delimits its discussion of these barriers and drivers according to 'Net Zero' housing managers on the one hand, and 'Conventional' housing managers on the other.

5.2. Net Zero Housing Managers

It is fair to say that the pace of change at the local authority level has been slower than desired. As shown in Table 3, most local authorities have installed heat pumps in less than 1% of their housing stock. This is in line with the broader situation in Scotland, where 1.4% of all dwellings have heat pumps (Scottish Government 2024c). Net Zero housing managers confirm that the rate of heat pump installation across their portfolios has been lower than they would like, with one manager reporting:

“The pace of heat pump installations is definitely slower than we would like”

(LG3 2025).

Clearly, then, the motivation to increase the rate of heat pump installations alone is not sufficient to drive greater numbers. Various material and real-world factors impede the deployment of heat pumps, despite the interest at the local authority level in doing so.

Based on the interview data, the following issues emerged as the most significant barriers to the widespread deployment of heat pumps within local authorities staffed by Net Zero housing managers:

- 1. Costs, Funding & Subsidies
- 2. Tenant disruption, Decanting & Voids
- 3. Fabric first

5.2.1. Costs, Funding & Subsidies

The primary reason Net Zero housing managers had not installed as many heat pumps as they would have liked is the lack of financial resources, given a funding environment where only partial financing is available. These local authorities tended to prioritise heat pump installations alongside their new build programmes, as the Scottish Government subsidy regime under the Affordable Housing Supply Programme (AHSP) incentivised and supported this approach. One housing manager stated:

“... for every new build that we build, we will get a subsidy from the Scottish Government for doing so. Compared that to every retrofit you do, where you get no subsidy. So, from a subsidy point of view, you’re going to be steered towards brownfield development”

(LG1 2025).

Installing heat pumps in their existing stock presented additional financial challenges, as housing managers highlighted the need to make fabric improvements to homes that were often cost-prohibitive. Previous CaCHE research found that heat pump installations often incur additional

fabric upgrade costs of around £14,000 (above and beyond the unit, system, and installation costs) (Harrington 2024). One housing manager explained:

“Consider that example I gave you of the retrofit... the cost of that project was £165,000. And that was on top of a house that we’d already bought for £80,000. The market value of that house is probably about £100,000... So, the economics don’t add up... The Council needs to think with a commercial hat on, and we can’t be making decisions like that... the Council needs to think commercially”

(LG1 2025).

The general local authority position is that homes need to achieve an appropriate level of insulation and thermal efficiency before heat pumps can be installed. This approach, colloquially termed ‘fabric first,’ is based on the view that if heat pumps are installed in properties with an EPC rating below ‘C,’ for example, the occupant would likely face household heating costs higher than they experienced with their existing gas boiler. Although EPC ratings are an imprecise measure of a home’s thermal efficiency, previous CaCHE research confirms that, generally speaking, the lower a home’s EPC rating, the more expensive a heat pump is to run (all else being equal) (Harrington 2024). Therefore, if gas boilers are to be replaced with heat pumps, housing managers believe that a home must be upgraded before or at the same time as the installation. This means that, in the majority of cases, any plan to install a heat pump is not simply costed by the price of the unit and its installation, but also includes retrofitting and fabric upgrade expenses. Another local authority noted:

“We are about to embark on a full-scale stock condition survey, which will have an assessment to look at the work required to bring the homes up to a decent sort of thermal efficiency and what measures would be required in terms of zero emissions heating systems... the feedback we are largely going to get back from the surveyors is that we will need to bring properties up to at least a really decent EPC C-rating in terms of the insulation factor before they suggest we consider installing a heat pump... Other councils have mentioned figures about £25,000 per property that they are looking at in terms of their investment. It’s likely that our surveyors are going to come back with similar measures, particularly our flats will need substantial EWI to significantly reduce the heat demand of the properties”

(LG3 2025)

A separate issue that emerged from the interviews was the challenge of securing funding for retrofit works to existing stock, which might then include the installation of heat pumps. Despite the availability of such funding schemes

from the government, local authorities pointed out a financial misalignment between the sums offered by the Scottish Government and the actual costs of these projects. Under the Social Housing Net Zero Heat Fund (SHNZHF), social landlords (including local authorities) receive a 'maximum of 60% of the total capital expenditure (CAPEX) for the zero direct emissions heating elements only,' and a further 'maximum of 50% of eligible capital expenditure (CAPEX)' for additional fabric upgrades (Scottish Government 2024b). One housing manager stated:

"Local government gets less funding than other registered social landlords like housing associations. We are being given I think around £4,500 if we are Net Zero. And I think we get a few hundred pounds if we put in a solar panel. But the cost of an air source heat pump is more like £10,000, and PV panels are another £3,000 to £5,000. By the time you put in all the kit and the installation costs, the Councils are paying out around £18,000. We're getting a subsidy of about £6,000. The government subsidy is not aligning. And there's no subsidy for retrofit... I think they're acting more like a stick effect. Whereas we need more of a carrot incentive"

(LG1 2025).

From a local authority perspective, it becomes a simple issue of economics. If each retrofit heat pump installation incurs a net cost to the council of around £12,000 (the £18,000 estimate minus the £6,000 reported subsidy), the number of such installations they can undertake each financial year is greatly constrained by their fixed housing budgets. Importantly, this shortfall does not include the costs of any additional fabric upgrades that may be required to bring the home up to an appropriate level of insulation.

Although the Scottish Government's Heat Network Fund (Scottish Government 2024a) is specifically designed to support the development of heat network projects (rather than retrofit projects involving individual heat pumps), the experience described by one housing manager highlights application challenges and is worth repeating:

"The Scottish Government have a fund called the Heat Network Fund where you can apply for funding if you think your project is not viable without funding to get it to Net Zero. I have applied to this fund twice, and both times I've been unsuccessful because you need so much information to apply... And one of the questions within the form as you get to the last section is, 'so if you can't use air source heat pump, what will you use?' Now I answer that by saying that we would use gas, but we're not permitted to use gas... So, this is sort of a void question... And then they ask, 'will your project proceed if you don't get the funding' – and I say 'yeah,' and then they say 'you're not getting the funding'... You need to submit full

details of the design. What the cost of consumption were going to be, how much electricity was being generated by the PVs you're having. You're having to pull in information from your whole design panel, your whole design team, who then all feed into this presentation, which because you say that your project's viable without the funding they discard it in the end anyway... I was working at that on and off for three months"

(LG1 2025).

Because local authorities do not have access to sufficient funding to cover the cost of heat pump units and their installation (let alone the cost of additional fabric upgrades that may be required), they do not consider their existing stock—the majority of which is currently on-gas—to be an economically viable target for heat pump deployment. One council representative confirmed:

"With regards to retrofitting, we haven't fitted any air source heat pumps"

(LG2 2025)

In practice, this means that even local councils staffed by Net Zero housing managers are leaving their gas boilers in place, maintaining the carbon emissions generated by space and water heating across the majority of their stock. Another housing manager explained:

"I think the future will just be more of the same piecemeal retrofitting. Using the Buy Back policy to clear out owner occupiers so that the Council have control of a whole block of flats, for example. Or a whole row of terraces. Concentrating more on detached properties, of which we hardly have any. So more like asset management"

(LG1 2025).

Due to the costs involved in retrofitting homes with heat pumps and the funding and subsidy landscape within which local councils operate in Scotland, housing managers who are actively seeking to increase their deployment of heat pumps prioritise installations in new builds, making little progress in transitioning their existing stock away from gas boilers. As shown in Table 3, the vast majority of heat pumps (76% of the total) have been installed in new build homes.

5.2.2. Tenant Disruption, Decanting & Voids

Beyond the financial barriers affecting the deployment of heat pumps, local authorities highlighted challenges related to the physical access required for installation. Net Zero housing managers explained that retrofitting heat pumps involved a degree of disruption and inconvenience that most tenants could not tolerate. Evidence suggests that comprehensive

retrofit projects can take several months to complete (Wheeler 2024). Expecting tenants to remain in a property undergoing a retrofit was unrealistic. Consequently, decanting tenants became an important element of the heat pump retrofitting process. One council representative described the challenges of such an undertaking:

"I think to do a retrofit successfully, you need to decant your tenant. Now that's a huge problem for council tenants. We've got nowhere to put them. We're at capacity and we've got thousands of people on a waiting list. We just don't have properties that you could decant them into for 20 weeks. We rip apart their house and put it all back together again. So, that's a big problem"

(LG1 2025)

Given the challenges of decanting tenants for months at a time, councils tended to view the void period between tenancies as the most appropriate time for retrofits. This strategy significantly slows the process of decarbonising existing council stock, as housing managers reported property turnover rates of around 8% per annum. One manager stated:

"By and large, we would be looking to retrofit properties when they become void. We might not necessarily upgrade the actual boiler or change the heating system, but what we might do is the actual works which cause the most upheaval, which is the pipe working radiators during that period"

(LG3 2025)

Furthermore, housing managers discussed the tension between the ideal circumstances for heat pump installation—i.e., when the property is void between tenancies—and their statutory requirement to keep void periods to a minimum in the context of a prevailing housing shortage. In Scotland, the Housing Act (2001), Homelessness Act (2003), and Scottish Social Housing Charter (2017) indirectly impose a duty on councils to minimise void periods, especially given the housing shortage. The senior officer explained:

"I know in a year we have a turnover of houses of about 800 per annum... So that's about 8%... But all registered social landlords are under pressure for this void period to be as short as possible, because that has been flagged as a major cause of the housing crisis that we're in at the moment"

(LG1 2025).

This is fundamentally a logistical problem. Because heat pump installations often require retrofitting work of varying degrees, councils need somewhere to house tenants while they carry out these months-long programmes. However, in the context

of a housing shortage, suitable properties for temporary accommodation are often unavailable. Although waiting for turnover voids is the preferred option, this is not always feasible. Once again, the housing shortage forces housing managers to balance their long-term goal of decarbonising their stock with the immediate need to find shelter for vulnerable households.

5.2.3. Fabric First

The local authority interviews revealed a prevailing approach known as 'fabric first.' Fabric first is the belief that before clean heat technologies are installed, a home's insulation must first be improved to a suitable level. The approach is not solely concerned with optimising heat pump performance; rather, its goal is to enhance the thermal and energy efficiency of homes overall, thereby reducing heat demand regardless of the heating system used (Scottish Government 2022).

While replacing gas boilers with heat pumps will reduce carbon emissions from space and water heating, improving the thermal and energy efficiency of a home lowers its overall energy consumption. Additionally, a fabric-first approach brings important health and well-being co-benefits. Better insulated and ventilated homes are less prone to damp and mould, retain heat more effectively, and provide more consistent warmth to occupants—all of which are proven to improve key health markers (IEA 2025).

Although the fabric-first approach and heat pump installations are complementary strategies for decarbonising homes and advancing Net Zero objectives, the prioritisation of fabric first, in the context of limited council resources, has slowed the rate of heat pump installations. This is because improving the energy efficiency of existing stock—as required under the Scottish Government's Energy Efficiency Standards for Social Housing (EESH 2014 and EESH2 2019)—is a significant undertaking for local authorities (Scottish Government 2025a). While fabric first aligns with government mandates for energy efficiency improvements, no similar obligation exists for local authorities to install clean heat technologies in existing stock. This may change in the coming months, however, as the Scottish Government is consulting on the forthcoming Heat in Buildings Bill, which could include a provision requiring "all homes and businesses to transition to a clean heating system by the end of 2045" (Scottish Government 2025b).

Fabric first is the dominant strategy being pursued by local authorities in Scotland to reduce the energy demand of their housing stock. Because councils are prioritising energy efficiency upgrades first, large-scale deployment of heat pumps may only occur sometime in the future. All the housing managers we spoke to confirmed that their local authority had adopted fabric first. One council representative remarked:

"Fabric first for us. Yeah, definitely. Fabric first for the retrofits"

(LG1 2025).

Another stated:

“Obviously the fabric first approach is critically, regardless of whether what the heat source is, you’re reducing that heat demand and the heat loss from the property. So, regardless of the heating system we would be making the tenant be able to rely on less energy requirement to heat up their homes and keep a nice temperature. That’s to be welcomed. So, if the world is on our trajectory where energy prices are rising, then doing anything to reduce that heat loss through the heat demand, it has to be to be welcomed”

(LG3 2025).

A third noted:

“We’re going through a significant stock improvement programme. Our energy efficiency standard for social housing attainment as of the 31st of March last year was the lowest in Scotland, at 65. I have been throwing considerable resources at that issue to catch up with the pack ... The hope and expectation is that by the end of this reporting year we will be well into the 80s. It’s a massive staircase, you know”

(LG4 2025).

While fabric first is undoubtedly a force for good, promoting energy efficiency and health and well-being—and, in many cases, the right approach before installing heat pumps—there is no consensus on how much fabric is needed to optimise heat pump performance. This question is further complicated because a home’s thermal performance relates to its period and materials of construction, factors that vary across a local council’s housing stock. Two issues arise. First, if local authorities delay heat pump installation until all their homes meet a certain energy efficiency standard, large-scale deployments may be a long way off. Second, because the level of insulation required to ensure that heat pumps provide both thermal comfort and reasonable running costs is unclear, many homes that could be transitioned away from gas heating may be overlooked in the meantime.

5.3. Conventional Housing Managers

As discussed in the introduction, the barriers to heat pump installation reported by conventional housing managers differ from those raised by managers who actively seek to increase the number of heat pumps across their housing stock. Conventional housing managers tended to prioritise affordable rents, lower heating bills, ease of maintenance, and minimal disruption to tenants’ heating routines. As a result,

these managers were reluctant to replace gas boilers with heat pumps in their existing stock. Aside from new build schemes (where recent policy mandates the installation of clean heating technology), they directed their heat pump installations to off-gas locations, replacing direct electric, oil, and coal heating systems—situations where they believed tenants would experience lower heating bills and similar thermal comfort.

The interview data revealed the following barriers to the widespread deployment of heat pumps within local authorities staffed by conventional housing managers:

- 1. Unit cost, Reliability & Maintenance
- 2. Rent increases & Government funding
- 3. Tenant perceptions and permissions

5.3.1. Unit Cost, Reliability & Maintenance

The unit cost discrepancy between heat pumps and gas boilers was repeatedly highlighted by conventional housing managers as a significant barrier to adoption. According to the latest data from the Department of Energy Security and Net Zero (DESNZ), the median cost of installing an air-source heat pump (ASHP) was £12,969, while a ground-source heat pump (GSHP) installation cost £25,000 (DESNZ 2025). In contrast, gas boilers could be installed for between £1,500 and £5,000 (GreenMatch 2025). From a commercial perspective, housing managers equated the installation of a single heat pump to the installation of three gas boilers. Seen in this light, installing one heat pump meant they could install two fewer gas boilers. One manager explained:

“The other thing for us is the cost of installing. So, you look at a gas system, you’re probably averaging £4,000 – £5,000 for one system, whereas the heat pumps, I think the cheapest one we’ve had recently was £12,000... So, you’re sort of talking about 2 to 3 times more expensive. Gas boilers are a third of the price for us... So, I mean we’re looking at that because we’ve obviously got a budget every year... I think it was £1.2 million this year. If you were to go down the line and try to change everything to heat pumps, you’re going to be cutting your numbers, that you can do by a half or two thirds really... 100 heat pumps or 300 boilers”

(LG2 2025).

These local authorities also raised concerns about the servicing and maintenance of heat pumps, which they felt were generally less reliable and required more attention than gas boilers. Servicing an air-source heat pump costs between £150 and £300, while repairs range from £150 to £2,000 (depending on parts) (Checktrade 2024a). In comparison, gas boilers can be serviced for between £80 and £150, with repairs ranging from £100 to £500 (Checktrade 2024b). The evidence suggests that repairs and maintenance for heat pumps are at least twice as costly as those for gas boilers. Although the managers acknowledged that problems with heat pumps

could arise due to user behaviour rather than the technology itself, they argued that tenants' difficulty in operating heat pumps was another factor working against them. As one housing officer explained:

"You know there's also our ability to service. We have insufficient in-house and external resources at our disposal for servicing when it comes to the air source heat pumps. The maturity of that market is not there at the moment. While we are trying to train, both sides of the workforce, it's usually the younger workforce that's amenable. The older boys are less keen to change their skill base"

(LG4 2025).

Regarding the challenges of adapting tenant behaviour to heat pumps, one manager reported:

"It can be quite difficult if somebody's going from gas. That's one of the big issues we've found. If they're going from a gas central heating system to an air source heat pump, it's trying to get out and meet the tenants and explain how these things work. The heat pumps don't operate the same as what a gas system does. People are used to getting up in the morning, putting the heating on for an hour, warming the place up enough, and then it goes off again. It's trying to explain to the tenants that, no, you can't use it like that. That won't work. Just keep it at a low temperature all the time, so you're not letting the whole house cool down... And I mean there's the typical arguments, 'but if I do that, my electricity jumps from £50 a month to £75 a month' and it's trying to explain to them, 'yes, but you're not paying gas, you're paying for electricity'"

(LG2 2025).

The housing officer went on to discuss a situation unique to heat pumps that would not affect a gas heating system. If a home experiences a power outage, the heat pump's operating system may reset, causing the tenant's timings and temperature settings to be lost. Research suggests, however, that many modern heat pumps do not reset and return to normal operation after a power outage (Baxi 2025). It is, therefore, unclear whether these reports are due to the heat pump or user behaviour. Nevertheless, given the complexity of the system and the typical tenant's unfamiliarity with its operation, power outages may require additional council call-outs. The manager elaborated:

"And we get tenants that run out of electricity. Could be that they're on prepayment metres. So, we find that if the tenant might run into electricity cuts, the whole system reset and the settings are

lost, and then the system doesn't run right. So, you're getting callouts for that. Whereas a boiler tends to just fire back up again when the electricity comes back on"

(LG2 2025).

In summary, because heat pumps are considerably more expensive than gas boilers and require specialised servicing and maintenance, conventional housing managers viewed them as a risk rather than an asset. As a result, these local authorities were opposed to installing heat pumps in homes connected to the gas network. One representative confirmed:

"We've not looked at doing the areas where there's gas. If it's gas, we still swap gas to gas. So, it's only really only in rural, non-gas places that we would install heat pumps... As I said, it's usually done on if there's gas here or not. If there's gas here, they get a gas boiler"

(LG2 2025).

Another stated:

The main issue me is if there's a gas metre box at the property. If there is, it'll be a gas boiler... It's easier and it's cheaper as well. It's the cheaper option... Like I said, it's three times the price sort of thing for a heat pump... There is no desire from my end to be replacing gas fired systems with heat pumps... The targeting is very much those least efficient off grid properties"

(LG4 2025)

5.3.2. Rent Increases & Government Funding

As previously discussed, conventional housing managers do not view the decarbonisation of their housing stock as their primary mandate. Instead, they prioritise providing access to healthy, affordable, and warm homes as their foremost duty. Consequently, they are wary of any new technology (whether clean heat or otherwise) that may impose burdens on their tenants without a clear household benefit. Although these managers acknowledged that heat pumps could provide equally or potentially better heating conditions for occupants, they were not convinced there was a strong enough economic argument in favour of their adoption in homes currently using gas heating.

These local authorities were adamant that any program to retrofit heat pumps across their existing stock – in the absence of full government funding – would require tenant rent increases. Since housing budgets are funded through rents, any increase in costs would necessitate a corresponding rise in rents to balance revenue and expenditure. Conventional housing managers were opposed to such a situation in

principle. One manager explained the dilemma:

“To greatly increase the installation of heat pumps, the funding would have to be there to make that happen... The marginal benefit to the tenants of a heat pump is not there for us to fund that. In effect you would take what’s currently affordable housing, and if you were to impose the cost of that transition and tenants, it would quite quickly become not far off market rates, if not even higher than market rates you’d have to charge to justify those installations. That just breaks the model of the social housing set up – the social contract, if you like, between tenants, landlords, and the government... I have a finite amount of investment money at my disposal based on current rents to keep them within the affordable levels. If I expand heat pump installs, I either need to cut back costs somewhere else or I need to increase the revenue”

(LG4 2025)

If, on the other hand, the council had access to government funding to cover the cost of heat pump units and their installation, they would quickly withdraw their opposition to such a deployment program. Conventional housing managers indicated that they would support largescale heat pump installation strategies to decarbonise their stock through the replacement of gas boilers – but not at the expense of increasing rents. The council representative continued:

“And that’s why I’m making the point that if there’s an external funder – if the Scottish Government decided to give me £10,000 per of property to do the installs, that’s a definite game changer... But if I have to, for the sake of argument, find that £10,000, times 6,000 homes, I am going to need to put a premium on the rents. There’s no doubt about it”

(LG4 2025)

Local authorities staffed by conventional housing managers do not believe the Net Zero benefits of heat pumps outweigh the budget risks associated with their installation. In the absence of comprehensive funding to cover the costs of the units and their installation, these councils believe that increasing the rate of heat pump installations will directly and proportionally impact the rents they charge tenants. Since their primary objective is to provide access to safe and affordable homes, they are not inclined to increase the number of heat pumps across their existing on-gas housing stock.

5.3.3. Tenant Perceptions and Permissions

Tenant concerns about the efficacy and performance of heat pumps emerged in the interviews with conventional housing managers in a way that did not occur with their Net

Zero colleagues. While Net Zero housing managers tended to view negative tenant experiences with heat pumps as ‘teething problems’ that could be overcome with appropriate information and guidance, conventional managers saw these reports as further evidence of the unsuitability of heat pumps for widespread deployment at this time.

Councils reported that tenants complained of higher-than-expected heating bills, inadequate heating, and unreliable heat pumps that required frequent maintenance call-outs. One manager stated:

“With the older retrofits, they get dampness, they’re cold. And then there’s the cost of running the heat pump for them. It’s the ***** units that they’ve installed and some of the homes have got backup heaters internally as well. So, effectively it’s trying to explain to people that they can get really high electrical costs with heat pumps, especially if the house isn’t insulated correctly... They get warm eventually, but then it loses its heat instantly”

(LG2 2025)

The issues reported with heat pumps were not limited to homes that had been retrofitted and may have lacked adequate insulation. Managers reported that tenants in new homes also raised complaints about their heat pumps. In these cases, the problem was often that the engineers contracted to install the heat pumps lacked proper training and had not designed the heating systems correctly. One council representative reported:

“We’ve had a couple issues with the new builds. I think they’re all install defects as companies are being told that they’ve got to fit air source heat pumps because obviously legislation changed. The guys that are fitting them are gas engineers that are maybe only trained up in that way. They’re not as knowledgeable as they should be... So, we’re finding quite a lot of install defects. It’s guys not fitting them right, on the sites... The majority of the issues come from new builds. Like I said, with a lot of them, it’s just the guys. It’s just general install knowledge... They’ve just fitted them in the new builds and we’ve had a lot of issues reported by tenants that their houses aren’t warm enough... and when we went out we saw the radiators were massively under sized... and it had even been pointed out during the pre-install survey, though it hadn’t been done correctly”

(LG2 2025)

These negative tenant experiences impacted heat pump deployment strategies in two key ways. First, conventional housing managers tended to view the technology with scepticism, which dampened their enthusiasm for increasing

its use across their stock. Second, these managers were more likely to yield to push-back from tenants who were uncertain about the benefits of having heat pumps installed. Rather than counter tenant reluctance by highlighting the potential heating advantages of heat pumps, the managers often aligned with tenants' concerns about disruption, heat quality, dampness, or higher running costs. One manager explained:

"There are a lot of tenants who would refuse point blank to lift the floors for the piping... There's a lot of them where... even when the heating doesn't work, they're refusing us access to put in any form of clean heating in because of the extra work. Or they'll say 'you can do it when I die' or 'when we move out' sort of thing. So, they don't want to lift the floor and sometimes even things like space for the hot water cylinder... If the tenant refuses, we won't force a clean heating system on them... And that's another factor, I think the tenants weigh up the cost between saving money on heating but then also how much will I have to spend to get my house back up to the standard that it is now... We'll lift the floorboards and we've got carpet contractors that will put carpets in and stretch them and stuff, but when it comes to laminate floor, that's the tenant's own responsibility"

(LG2 2025)

Negative tenant reports regarding heat pumps were more prominent in the interviews with conventional housing managers. These complaints, which often focused on issues such as home heating, dampness, maintenance, and running costs, coupled with the higher installation costs, led the managers to view heat pumps as a less-proven and reliable heating technology compared to gas boilers. One manager described the situation:

"I think you just have the anxiety of the cost of both the operating and the installation, and I think that's not unreasonable. I think more research is good and I'm inviting that... To keep testing things to make sure we're not just blindly following ideology. I think we need to make sure we're on the right side of whatever, you know, the future in terms of what the predominant heating types are going to be"

(LG4 2025).

6. Reflections & Interpretation

Although this report has divided its findings according to two distinct types of local authority housing managers – i.e., net zero and conventional – the interviews revealed a common context shared by all Scottish local councils. Regardless of whether a local authority actively seeks to increase the number of heat pumps in their stock, they all face financial, housing, tenure, and occupancy constraints that significantly limit their ability to do so.

6.1. Costs & Finance

Local authority housing budgets are funded through the rents they collect, which means the heating systems they install must be chosen with commercial considerations in mind. Heat pumps are significantly more expensive than gas boilers and often incur additional costs beyond the unit and installation. In many cases, homes need new pipework, water cylinders, and radiators to ensure optimal heat pump performance. Installing new pipework may require lifting floorboards or skirting, while water cylinders may require repurposing space used for other purposes. In some instances, pre-installation surveyors may recommend additional cavity, external, or loft insulation. Evidence suggests that retrofitting a heat pump into an existing dwelling can cost a local authority between £12,000 and £25,000, depending on the level of fabric improvements made alongside (Palmer & Terry 2023).

Under the Social Housing Net Zero Heat Fund, the Scottish Government offers social landlords (including local authorities) up to 60% of total CAPEX costs for zero direct emissions heating elements, and an additional 50% for eligible CAPEX costs related to fabric upgrades (Scottish Government 2024b). This means retrofitting a heat pump could still cost local authorities between £4,800 and £10,000 after external funding is applied.

Rather than viewing this as an upfront cost, it can be considered in terms of annual debt repayments over time. The key question is how such a programme impacts rents—does the additional borrowing lead to rent increases, or can operational savings offset the cost? Additionally, councils must weigh the trade-off between retrofitting existing homes and investing in net zero new builds, balancing affordability, emissions reductions, and housing supply.

Given that an efficient gas boiler can be installed for between £2,500 and £3,500 (Checktrade 2024c), heat pumps remain commercially uncompetitive for local authorities under the current funding framework. It's no surprise, therefore, that all housing managers interviewed stated that:

“The principal barrier at the moment for larger scale deployment is definitely finance”

(LG1 2025).

In a hypothetical scenario where financial constraints were no longer an issue, two other significant barriers to the widespread deployment of heat pumps would remain: (1) the capacity to decant tenants during the work periods, and (2) the availability of skilled labour for installations.

6.2. Decanting Tenants

The local authority interviews highlighted that installing heat pumps while tenants occupy homes is often impractical. Heat pump installations typically require extensive retrofitting, which causes significant disruption to homes and can take several weeks to complete. Therefore, it is preferable that these work programmes are carried out when a property is unoccupied.

Unfortunately, local authorities do not have housing reserves available to accommodate tenants who need to be decanted during retrofitting. As a result, heat pump installations have generally occurred between tenancies or after a home has been purchased by the council, but before a tenant moves in. This has significantly limited the opportunities for Net Zero housing managers to replace gas boilers across their existing stock.

For local authorities to undertake large-scale heat pump deployment, they will need practical decanting strategies, including alternative housing arrangements for tenants whose homes are undergoing retrofitting. For example, this may include hotels or access to student housing. Without decanting programmes that match the scale and pace of anticipated installations, heat pump deployments will continue to be handled on an ad hoc basis, prioritising home buybacks, new builds, off-gas properties, and intertenancy voids. If tenancy turnover rates are 8%, as reported by one council, it would take 12.5 years to access their entire stock for installation based on natural vacancy. This statistic does not account for homes with lifetime tenants, which may remain occupied for decades. Additionally, it overlooks the challenge that councils cannot realistically undertake weeks-long retrofit projects each time a home becomes vacant, given their statutory obligation to house long waiting lists of those in need.

Alongside the challenge of finding accommodation for tenants during installation periods is the issue of securing adequate skills and labour to support large-scale heat pump deployment programmes at the local authority level.

6.3. Skills & Labour

In 2021, the Scottish Government reported that 210 companies were operating in the heat pump sector (Scottish Government 2021b). Based on these figures, Nesta estimated there were between 200 and 400 heat pump installers in Scotland (Nesta 2022). Given that the Heat Pump Association reported a 166%

increase in UK-wide installer numbers between 2022 and 2023 (HPA 2024), it is reasonable to estimate that there may now be as many as 800 installers in Scotland. In 2023, 6,388 heat pumps were installed in Scotland (Scottish Government 2024c), suggesting each installer averages around 8 installations per year.

The local authorities interviewed had housing inventories ranging from 6,000 to 10,000 properties. If heat pumps were to be installed in all existing homes over 10 years—completing a local authority clean heat strategy by 2035—each authority would need to install between 600 and 1,000 heat pumps annually. With an average of 8 installations per installer, this would require between 75 and 125 installers per council. Given there are 32 local authorities in Scotland, achieving a clean heat strategy by 2035 would require between 2,400 and 4,000 installers. Nesta suggested that Scotland should aim for 4,000 installers by 2033 (Nesta 2022).

It is important to note that heat pump installers are just one part of the broader skills gap in Scotland needed for widespread heat pump deployment. In addition to installers, surveyors are required to assess properties, along with plumbers, electricians, and other contractors necessary for completing insulation and fabric upgrades. Describing the scale of this challenge, one local authority stated:

“Well, if funding was unlimited – if you if didn’t need to worry about that thing called money – I don’t think we’d even have enough engineers in the area to install heat pumps in all our stock. Let’s say just now we’ve got a stock of 5,000. So, we’ve got about 3,000 houses. Let’s just say you want to do all 3,000 houses at 1,000 a year. I don’t think there’s a labour force to even call upon to do them – to change all the pipe work and the radiators. Never mind do all the heat loss calculations for the 1,000”

(LG3 2025).

7. Conclusions

This research has found that the rate of heat pump installations across local authorities in Scotland is influenced by material, regulatory, and managerial factors.

First, we must consider whether housing management prioritises heat pump deployment and the decarbonisation of their housing stock. Local authorities staffed by Net Zero housing managers, who are specifically motivated to increase their heat pump installations, will seek to replace existing gas boilers with heat pumps wherever possible, given budget constraints. In contrast, local authorities led by conventional housing managers limit their heat pump installations to off-gas properties and new builds.

Regardless of management orientation, all local councils in Scotland report financial challenges that limit their ability to increase the rate of heat pump installations. Concerns about the running costs of heat pumps—especially in the context of high electricity prices relative to gas—underpin housing managers' preference for improving the energy efficiency of their stock before or alongside heat pump installations. In many cases, a clean heat project, including the heat pump unit, system and fabric upgrades, and installation, can cost around £25,000. Since the government currently covers a maximum of 60% of the cost of the unit and installation, and 50% of retrofit costs, local authorities typically pay between £10,000 and £12,500 after external funding.

Local authority housing budgets are primarily funded through social rents. As a result, the comparatively lower cost of gas boilers often influences decisions regarding heating systems at the local level.

Even if financial challenges related to heat pump installation were set aside, several logistical and technical barriers would remain. Heat pump installations as part of whole-house retrofits (a key component of the fabric-first approach) often take months to complete. Local authorities would need a practical relocation strategy to decant tenants during this period, while still fulfilling their duty to house vulnerable households amid a housing shortage. Additionally, there is a shortage of properly skilled heat pump engineers, installers, surveyors, and retrofitters in Scotland. As such, increasing the rate of heat pump installations would require a corresponding increase in the volume of skilled labour available.

Based on these material, managerial, regulatory, logistical, and labour factors, this report offers the following recommendations to the government to help increase the rate of heat pump deployment at the local level in Scotland.

8. Recommendations

Costs & Financing

To address the financial barriers to heat pump installation across existing local authority housing stock, the government may consider increasing funding rates for heat pump units, their installation, and the associated system and fabric upgrades to between 75% and 100%.

Before any increase in funding, however, it would be prudent to conduct further research and analysis to accurately determine the minimum levels of insulation required, as well as the optimal system design features (such as emitter sizing, operational settings, and flow temperatures), to ensure optimal heat pump performance. Defining these parameters would help minimise the government's financial exposure through retrofits.

Regulatory mandates

To address the variance in housing management priorities regarding the deployment of heat pumps, the government could consider mandating the replacement of gas boilers with clean heat technologies (including heat pumps), once the necessary funding framework is in place. A mandate similar to the one outlined in the New Build Heat Standard (NBHS 2024) could then be extended to existing social housing stock, once financial barriers have been overcome.

However, such a policy carries some innovation risk. The rollout will take more than a decade, and by the mid-2030s, more advanced heating systems may be available, potentially leaving local authorities locked into earlier decisions.

Decanting strategy

Once an appropriate funding and regulatory framework is established, the Scottish Government could explore a nationwide relocation program to support local authority clean heat and retrofit strategies. Potential options might include, but are not limited to, public-private partnerships (PPPs), incentivised voluntary moves, the use of vacant properties, adaptive building reuse, and joint council initiatives.

Further research is needed to determine the most appropriate policy mix for such a program. Lessons may be drawn from international experiences, as countries like those in Scandinavia and the Netherlands have successfully enacted relocation schemes in the past.

Regardless of the approach, tenant choice and consultation are crucial to engaging communities in co-designing relocation plans, enhancing tenant well-being, and minimising resistance.

Skills & Labour

In addition to funding, regulatory, and decanting frameworks, the Scottish Government could consider revising engineer licensing requirements to expand the pool of qualified heat pump installers.

Currently, under the Gas Safe Register, all gas engineers must be qualified and licensed to install gas heating systems. A potential solution could involve transforming the Gas Safe Register into a 'Gas and Clean Heat Safe Register,' where engineers are licensed to install both gas boilers and heat pumps, consolidating the qualification process under one system. Organisations such as Skills Development Scotland and the Chartered Institute of Building (CIOB) would be valuable partners in such an effort.

Any such registration would need to encompass competencies in heating system design (including appropriate emitter sizing, plumbing, setup, and flow temperatures), as well as installation, configuration, repairs, and ongoing maintenance to ensure optimal heat pump performance.

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Appendix A

Semi-Structured Interview – Predetermined Questions

- 1. Please introduce yourself, your role, and your organisation.**
 - a. What is the size of your housing stock portfolio?
 - b. How many heat pumps do you currently have in operation?
 - c. What is the distribution of heat pumps between new builds and retrofits?
 - d. Approximately how many heat pumps have you installed in the last 3 years?
- 2. What types of properties in your portfolio typically receive heat pumps?**
 - a. Why have you prioritised these particular homes for heat pump installation?
- 3. What is your heat pump installation strategy for the foreseeable future?**
- 4. How have you found the deployment and installation of heat pumps so far?**
 - a. Has it been an easy process or a challenging one?
- 5. What barriers have you encountered when deploying and installing heat pumps?**
- 6. When thinking about a home, what does the term "heat pump ready" mean to you?**
 - a. What distinguishes a "heat pump ready" home from one that is not?
- 7. In your view, what is the appropriate relationship between heat pump installation and a 'fabric first' approach?**
- 8. How has fuel poverty influenced your decisions regarding heat pump installations?**
- 9. If we could wave a magic wand and retrofit 100% of the eligible homes in your portfolio with heat pumps within the next 3 years, what changes would need to occur to make that happen?**