Financing and funding the decarbonisation of Scotland's social housing

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SCOTTISH FUTURES TRUST

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1. Introduction

This report was prepared by the Scottish Futures Trust (SFT) for the Scottish Government to consider possible alternative mechanisms for financing and funding the decarbonisation of existing social housing.

Delivering energy efficient housing with clean heating systems not only reduces carbon emissions but has the potential to deliver various socio-economic benefits. Warmer, more comfortable housing can significantly improve health, support longer independent living, and enhance life chances and community strength amongst residents. If implemented effectively, it could minimise negative outcomes on future tenant living costs[1]. Finding a way to finance the required work and deliver it on a timely basis is therefore not just essential for net zero ambitions but also has the potential to deliver wider societal benefits.

The Scottish Government estimated in its Heat in Buildings Strategy that it will cost around £33 billion to decarbonise heat in buildings by 2045. The final cost will be influenced by many factors, several of which are difficult to predict. For example, inflation rates, the future price of clean heating systems and the impact of proposed new legislation.

This report does not attempt to address the level of funding support that may be required specifically for social housing, although this has been considered by others, including Scottish Government[2]. More broadly, the Scottish Government is currently reviewing the estimated total cost of its Heat in Buildings Strategy and anticipates the outputs of that work will be made available soon.

The sector has made significant strides in improving Scotland's social housing stock by implementing the Energy Efficiency Standard for Social Housing (or EESSH1).

The outcome of the public consultation on the Social Housing Net Zero Standard (SHNZS) will inform the future course to net zero.

1 Clean heating conversions (e.g. natural gas boiler replaced with heat pump), especially when installed alongside a package of energy efficiency improvements, can result in operating costs for users which are comparable to those of existing systems but unlikely to deliver significant savings in many cases, at this time given current electricity and natural gas prices. Where buildings are currently heated with other fossil fuels (e.g. fuel oil) or presently electrically heated, there may be more potential for cost savings. This can vary depending on specific circumstances and will change as energy unit prices themselves change due to market conditions or changes in policy e.g. Electricity Market Reform.

2 The consultation paper for the Social Housing Net Zero Standard (SHNZS) estimates that converting the remaining social housing stock for net zero may cost in the region of £6 billion (see Cost and Funding Section of Consultation). If, for example, the Scottish Government were to provide 50% (comparable with historic levels of grant support) to social housing providers (although this is not stated policy of the Scottish Government) it would suggest a funding requirement for grant support of circa £3 billion. Irrespective of the precise value or the nature of any future support offer, the cost will be significant.

This exploration of feasible financing routes will add to the delivery picture, helping to inform the process. The scope of this work aimed to encompass the following:

- Articulate the barriers constraining Registered Social Landlord (RSL) and Local Authority investment in clean heat and energy efficiency measures.
- Identify and describe the overarching features of different delivery financing models which could help unlock investment in clean heat and energy efficiency measures in social housing.
- Develop and apply an appraisal tool to consistently assess each delivery financial model against its potential to drive investment in clean heat and energy efficiency measures across social housing stock.

Our findings based on this scope are set out in Section 2 and Section 10.

2. Executive summary

This report was prepared by the Scottish Futures Trust (SFT) for the Scottish Government to consider possible alternative mechanisms for financing and funding the decarbonisation of existing social housing.

Overview of sector

Social landlords own and manage social housing. The landscape of social landlords in Scotland is varied, with twenty-six local authorities and 138 Registered Social Landlords (RSLs) currently performing this role. Landlords range from large, concentrated, and urban to small, dispersed, and rural. They can be responsible for more than 60,000 houses or a few hundred. Some operate extensive new housing supply programmes, whereas the programmes of others are much more limited. They report to elected bodies and boards and have varying positions of financial capacity. In addition, there are also fundamental differences in how RSLs, as private sector entities, and local authorities, as public sector bodies, approach the role of social landlord. As such, it is unlikely that there is one generic solution that can be applied to all landlords; what is relevant to one may be impractical for another. Any future model development should recognise this and ensure that appropriate options are taken forward to offer something to cover the breadth of the landlord base.

Landlords' capital expenditure plans are focused on their core business operations whilst trying to deliver the transition to net zero. They also share the Scottish Government's ambition to construct more affordable homes while scheduling routine stock maintenance, lifecycle replacement, and improvement programmes. Both net zero and new build aspirations will require substantial funding, regardless of how sourced. In principle, this funding can largely be drawn from two sources, namely government grant or income from tenants (used as a revenue stream to repay finance). These sources are constrained and therefore there is a need for clarity to prioritise investment.

Key challenge of retrofit

There are many challenges to the decarbonisation of heat in social housing and these are explored fully in Section 4.

Of particular relevance when considering financial models is the fact that investing to support improvements in energy efficiency and clean heat will not necessarily result in any reduction in overall energy costs. However, investments in energy efficiency alone should, assuming no change in behaviours, deliver energy cost savings to tenants. Even in instances where the investment is cash positive (in the sense of cost savings), the costs of the investment lie with the landlord while the benefit accrues to the tenant. This could be equalised, of course, by adjusting rents, but the key points are whether any savings are likely to be made, how these savings are measured and what represents equitable distribution of those savings.

Social landlords must consider affordability and demonstrated provision of value to tenants when setting rents and rent increases. Therefore, any additional rental fees considered by landlords to fund necessary works would likely need to be offset by corresponding reductions in tenant energy bills so the tenant's overall housing or living cost remains cost neutral as a minimum, but hopefully improved.

As technological advancements continue and macroeconomic factors, such as electricity market reform (a UK Government power), are addressed, energy and cost savings from interventions (including clean heat) are anticipated to become more commonplace. In parallel to these advancements, if we are to deliver at pace and scale, it is imperative that both financial models and the emerging financial markets develop further so that third parties can assume energy savings and clean heat performance risk and use it to finance the requisite capital expenditure. The successful development of such models could establish non-recourse private investment as a significant supplementary source of government and landlord funding.

Existing support and stakeholder engagement

Landlords, alongside the Scottish Government, are already investing in net zero schemes within social housing, either independently or through other initiatives. A key collaborative initiative is the Social Housing Net Zero Heat Fund (SHNZHF) which provides financial support to social landlords for implementing net zero measures and has supported many individual projects since its introduction. Feedback from stakeholders engaged as part of this report has indicated that information regarding the cost, implementation, and performance of previous projects is invaluable in aiding landlords to define and finance efficient net zero solutions and to accurately inform tenants about the likely outcomes of these interventions. Although individual landlords may possess project outcome information, systems and processes, there is an opportunity for the comprehensive collation and dissemination of project data across the sector.

Stakeholder engagement has also identified a keen interest in strengthening and developing the current support available, by establishing a centrally coordinated support resource, which could serve as a benchmark for assessing the effectiveness of past projects and provide various support services such as technical solutions, procurement, and supply chain matters, amongst others. This would be particularly beneficial for smaller landlords needing more resources to amass the specialised knowledge and skills required for successful retrofitting. Such a service could either be integrated into any future financing models or operate as an independent unit, separate from any financing.

Model analysis and prioritisation

Model no.	Title	Evaluation score	Viability assessment summary	Outcomes
7b	**Super-aggregator**	**9.6**	**Lower funding requirement, shorter timelines**	**Prioritised for further exploration.**
7a	**Financial-aggregator**	**9.0**	**Lower funding requirement, shorter timelines**	**Prioritised for further exploration.**
6	Modified Charitable Bond Programme for retrofit	8.4	Higher funding requirement, shorter timelines	Not prioritised due to Scottish Government funding requirement.
4	Third party takes energy savings risk	8.2	Lower funding requirement, longer timelines	Not prioritised for government activity, as it is an area already being led by the private sector, and requires longer timelines for development and implementation.
10	**Loan guarantee scheme**	**8.2**	**Lower funding requirement, shorter timelines**	**Prioritised for further development – noted that there is existing activity on this (led by National Wealth Fund), Scottish Government may wish to engage on this and it may complement the development of models 7a and 7b and create opportunities to deploy the offering at a greater pace and scale.**

Model no.	Title	Evaluation score	Viability assessment summary	Outcomes
11	**Enhanced Social Housing Net Zero Fund**	**8.2**	**Higher funding requirement if capital enhancement included, shorter timelines**	**Not prioritised as an enhanced capital fund, due to Scottish Government funding requirement. However, the analysis and stakeholder engagement undertaken in the development of this report has indicated a strong case for the enhancement of centrally supported skills and expertise. This support could not only provide immediate support to the sector, but also provide a key component for developing the above highlighted model priorities (see overarching recommendations).**
2	Social housing accelerator	8.0	Lower funding need, longer timelines	Not prioritised due to timelines for development and implementation, with complex (and currently unquantified) benefit measurement requirements, as well as the potential need for varied policy change.
8	Combined grant	8.0	Higher funding requirement, shorter timelines	Not prioritised due to Scottish Government funding requirement
3	Heat with rent	7.4	Lower funding need, longer timelines	Not prioritised due to lower evaluation scoring
1	Sale of carbon credits	6.8	Higher funding requirement, longer timelines	Not prioritised due to lower evaluation scoring

Model no.	Title	Evaluation score	Viability assessment summary	Outcomes
5	**Area-based approach**	**6.8**	**Higher funding requirement, longer timelines**	**There is much activity and potential opportunity in this space which Scottish Government and social landlords could, where appropriate, engage with and support. However, our engagement with several social landlords suggested that it would be difficult for many of them to lead (rather than be an active participant) in driving forward area-based approaches without reprioritising limited resources. Therefore within the context of the social housing focus of this report, this received a lower evaluation score.**
12	Rental premium for retrofit	4.8	Lower funding requirement, longer timelines	Not prioritised due to lower evaluation scoring
9	Quasi-equity options	3.6	Higher funding requirement, longer timelines	Not prioritised due to lower evaluation scoring

Following the evaluation, the report has attempted to consider and reflect on the limited resources of the Scottish Government and the social housing sector, by analysing and prioritising a set of models which can be actioned and developed now. Those which appear most promising at this time have been put forward for prioritisation. It is recognised that all of the models above can be viable in the right circumstances, and that the ranking and priority of the models may change over time as the landscape and economics for retrofit change.

Overarching recommendations

As well as identifying a range of models that might support the sector and prioritising a small number for further development, this report has sought to identify a wider set of measures that will support and enhance future model development and implementation.

It is recognised that there are considerable constraints on current Scottish Government and landlord budgets, and the viability of developing one or more of the proposed options will be highly influenced in the short term by the availability of revenue and capital budgets.

As such, although many of the above models can be developed further, we believe there are three short-term effective and efficient activities that should be implemented now. We are proposing these activities should be led by Scottish Government, working in collaboration with other sector stakeholders and they are described as follows:

- Strengthen the current SHNZHF offering (it is noted that the SHNZHF is intended to run in its current form only up to the end of the current Parliament) with an enhanced multidisciplinary support offering (that includes, but is not limited to technical, financial, quality assurance and commercial expertise). The aim of this would be to provide immediate additional support to those that most need it within the sector. As the market matures, and as the requirements of regulation become clearer, support can be focused on targeting successful and replicable approaches to delivery. The analysis in this report suggests that this should include further exploration of low cost, blended financing under the Financial-aggregator and related Super-aggregator models.
- Improve clean heat and energy efficiency data collection - centrally gather and share data for installation and materials costs (across different house archetypes), as well as information on the performance and net savings realised for energy efficiency and clean heat deployment. Accessibility to this data for all social landlords will be key to helping inform, develop, evaluate and deliver net zero retrofit projects. Increased data clarity and reliability will also give confidence to potential private investors.
- Work with the sector to further explore and implement the prioritised models – there is substantial enthusiasm in the sector for the development and implementation of solutions, but the sector needs clarity on its net zero requirements and how it should address these alongside other priorities.

The recommendations, which we believe could be taken forward and embedded within 12 months, are further outlined in Section 9.

Lastly, the outcomes of this report, and the exploration and analysis of other models within it, may be revisited periodically and their applicability reassessed as the landscape continues to change and develop.

3. Scottish Federation of Housing Associations

SFT asked the Scottish Federation of Housing Associations to review and consider this report, and they have provided the following commentary.

The Scottish Federation of Housing Associations (SFHA) is the membership body for, and the collective voice of, housing associations and co-operatives in Scotland. We believe it is everyone's right to live in a safe, warm and affordable home.

We welcome this report and the spotlight it shines on social housing retrofit. The delivery of energy efficiency measures and clean heating to social housing tenants is central to Scottish Government's efforts to decarbonise heat in buildings and reduce fuel poverty, but it comes at a cost, and the scale and urgency of the challenge needs to be acknowledged.

Housing associations are required to balance investment in retrofit against a number of other strategic priorities, including the delivery of new homes, providing vital support and services to tenants, and work to keep rents as affordable as possible – all against the backdrop of a national housing emergency. As social purpose businesses, housing associations are working to deliver on these priorities as part of a wider contribution to national efforts to tackle poverty and inequality, and to improve health, education and employment outcomes. To help navigate a clear path between these sometimes conflicting objectives, strong leadership and support is needed from Scottish Government.

The exploration of retrofit funding models in this report is a valuable piece of work which aims to expand the range of tools at the disposal of housing associations. Due to the diversity of the sector, there will be no single approach that works for all, but we hope to see further engagement with housing associations and other partners to develop and test the viability of the financial-aggregator and super-aggregator models. The cost associated with social housing retrofit is immense and budgets are limited; work to bring forward new funding mechanisms should therefore be prioritised in anticipation of rising demand.

While new approaches to retrofit are important, these will not negate the need for predictable, long-term grant funding from Scottish Government. The Social Housing Net Zero Heat Fund must be continued, and should significantly ramp up to meet the requirements set out in the soon to be finalised Social Housing Net Zero Standard. Without public funding, we risk a situation where retrofit is paid for through higher tenant rents. SFHA is clear that this would be wholly unacceptable.

But we do also acknowledge the pressures on the public purse and the need to ensure value for money. We therefore welcome this report's emphasis on improved data collection to help inform and guide effective decision-making.

Feedback from the sector also concurs with the report's recommendation to enhance the current Social Housing Net Zero Heat Fund offer. We want this fund to have as much impact as possible and so believe that real value could be realised by introducing additional multidisciplinary support. By improving the effectiveness and efficiency of this fund, we can work together to ensure that more tenants are able to benefit from vital retrofit improvements.

Scottish Government is committed to reaching net zero by 2045 and the decarbonisation of heat in buildings is central to this ambition. The social housing sector is at the forefront of efforts to deliver retrofit at scale, but it cannot do this alone. In line with the recommendations in this report, we hope that Ministers will commit to working with partners to develop new approaches to funding, will commit to extending and ramping up the existing Social Housing Net Zero Heat Fund, and will deliver enhanced support to housing associations.

SFHA and its members understands that this is a joint endeavour, and we therefore stand ready to work collaboratively with Scottish Government to deliver these important and time-critical actions.

4. Policy context

The provision of social housing in Scotland is defined within a wider housing policy framework, with much emphasis on net zero, addressing fuel poverty and housing supply[3].

Specifically with regards to housing supply, in 2024 the Scottish Parliament declared a 'Housing Emergency' recognising the shortage of quality, affordable housing. This paper considers all three of these policy objectives but is focused on net zero for existing social housing.

The policy across these areas is continually developing and the passage below represents our understanding at the time of issue of this report.

Net zero

Scotland has established legally binding targets, supported by all parties in the Scottish Parliament, to achieve "net zero" greenhouse gas emissions by 2045. Since homes and workplaces contribute to approximately a fifth of Scotland's total greenhouse gas emissions, switching to clean heating and enhancing the energy performance of homes and buildings is crucial in meeting these targets. The Scottish Government's overarching vision for the future of heat in buildings was set out in its Heat in Buildings Strategy (updated 2022).

The Scottish Government consultation paper on a proposed Heat in Buildings Bill (which, for housing, is focused on Owner Occupiers and Private Rental Sectors, as well as non-domestic properties) sets out proposals to make new laws around the energy efficiency of our homes and buildings and the way we heat them. The simultaneous release of a separate consultation paper on proposals for a new SHNZS is particularly relevant to this paper. This consultation outlines proposals for a new SHNZS to replace the post-2020 Energy Efficiency Standard for Social Housing, known as EESSH2.[4] The SHNZS consultation[5] sought views on a standard that will require social landlords to improve fabric efficiency, and install clean heating, across their stock, where it is technically feasible and cost-effective to do so.

Other elements of the Heat in Buildings Strategy include Local Heat and Energy Efficiency

3 See Housing to 2040 with elements of route map including 'Affordable home supply', 'Affordable warmth and zero emissions homes'

4 EESSH2 required all social housing met Energy Performance Certificate (EPC) Band B, or was as energy efficient as practically possible, by the end of December 2032 and within the limits of cost, technology and necessary consent. In addition, the review specified no social housing below EPC Band D could be relet from December 2025, subject to temporary specified exemptions

5 The proposed SHNZS (to replace EESSH2) includes the following:
- A fabric efficiency rating (which focuses on the amount of energy for heat consumed by a property) measured in kWh/m^2/year
- A requirement to replace polluting heating systems with a clean heating alternative by a backstop date of 2045

Strategies (LHEES), a Heat Network Delivery Plan, with associated regulation[6], and a New Build Heat Standard (applicable from April 2024 to new building warrant applications). The extent to which heat networks will be utilised in social housing in Scotland is not yet clear, although they will undoubtedly have a significant role in urban areas and other locations best suited to a heat network approach. With this uncertainty in mind, we have refrained from looking at delivery models which are purely geared towards heat networks, although a number of the models could accommodate this solution. Further exploration of specific heat network delivery models can be found elsewhere.[7]

As a sector, social housing is generally recognised for good practice building maintenance arrangements and for reinvestment in stock, whether new-build or existing. Stakeholders engaged as part of this report strongly suggested the potential for the requirements of net zero to be effectively integrated into this ongoing activity, thereby building on existing capacity and processes to overcome challenges.

Housing supply

Social landlords own around 600,000 properties[8], constituting approximately 23% of Scotland's housing stock. They encompass 26 local authorities (the remaining six having completed housing stock transfers) and 138 housing associations and cooperatives. As of March 2023, local authorities owned 317,554 local authority houses in Scotland, with a projected increase to 320,461 in 2024/25[9]. Housing associations' stock exceeds 280,000 units, with individual housing associations varying in size from over 60,000 units to a few hundred, reflecting the resources available to each organisation.

Social landlords also play a pivotal role in delivering the Scottish Government's Affordable Housing Supply Programme (AHSP), which aims to provide 110,000 additional affordable homes by 2032, most of which will be available for social rent. According to the Programme for Government 2024/25 the budget for the AHSP for 2024/25 is nearly £600 million. In addition, the New Build Heat Standard (NBHS), which applies to all new buildings and some conversions, was introduced in 2024. The NBHS affects the type of heating systems that can be applied in these buildings, with only clean heating systems like heat pumps and heat networks being permitted. It is also proposed that a new Scottish equivalent to the Passivhaus standard would be mandated from 2028 onwards, with all new builds being required to comply. This proposed standard has the potential to impact new-build construction costs.

In 2022/23, local authorities allocated £1.1 billion to capital investment in housing, with £491 million spent on improvements to existing stock and £482 million on new builds. Government grants supported £172 million (16%) of this expenditure.

6 Heat Networks (Scotland) Act 2021 and proposed phased secondary legislation

7 Heat Networks Delivery Models

8 Housing Statistics 2022 & 2023: Key Trends Summary

9 Housing Revenue Account (HRA) Statistics: Scottish Local Authority Housing Income and Expenditure 1997-98 to 2022-23 (near actuals) & 2023-24 (budgeted estimates

RSLs are projecting the construction of 26,000 new homes over the next five years, down from the previous five-year forecast of 30,000, for £4.82 billion. Government grants are anticipated to cover 51% (approximately £2.45 billion) of this amount[10].

Fuel poverty

The Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act 2019 sets statutory targets for reducing fuel poverty. By 2040, no more than 5% of households should experience fuel poverty, and no more than 1% should be experiencing extreme fuel poverty. Interim targets have also been set for 2030 and 2035.

Scottish legislation describes a fuel poor household as one where:

- more than 10% (20% for extreme fuel poverty) of net income is required to pay for their reasonable fuel needs after housing costs have been deducted, and
- the remaining household income is insufficient to maintain an acceptable standard of living, defined as at least 90% of the UK Minimum Income Standard (MIS) once childcare costs and disability or care benefits are deducted.

The legislation provides for uplifts to be applied to the MIS for households rural and island communities to take into account the higher cost of living in these areas.

The Scottish Government has estimated that during the period of July to September 2023, 34% of households in Scotland were living in fuel poverty, with 23% experiencing extreme fuel poverty[11]. These figures exceed the levels of fuel poverty indicated by the Scottish House Condition Survey for 2022[12] (released in March 2023), which reported that 791,000 households (31% of all households) were in fuel poverty in 2022, with 472,000 households (18.5%) experiencing extreme fuel poverty.

10 Summary of Registered Social Landlord Financial Projections: 2023/24 - 2027/28
11 Scottish Fuel Advisory Panel
12 Scottish House Condition Survey:2022 Key Findings

5. Challenges to retrofit at scale and pace

Developing clarity on social housing net zero requirements

Previous guidance for social landlords (in EESSH1 and EESSH2) set clear objectives and a timetable for implementation. Timings and requirements for the SHNZS are yet to be finally announced. The Scottish Government, responding to calls from the social housing sector for clarity on what net zero means for them, convened a stakeholder review group to develop proposals for the new SHNZS. With the release of Interim Guidance[13] and the consultation on the SHNZS the general direction of travel is much clearer, but it has been difficult for the sector to plan an at-scale roll out without clarity on the detail which is needed to establish associated costs and underpin robust investment plans.

The proposed SHNZS[14] encompasses the following:

- A fabric efficiency rating (which focuses on the amount of energy for heat consumed by a property) measured in kWh/m^2/year.
- A requirement to replace polluting heating systems with a clean heating alternative by a backstop date of 2045.

The review of EESSH2 explored an alternative to an EPC-based target. The driver for this being that the metrics currently shown on EPCs do not solely reflect the energy efficiency of the building fabric and, therefore, do not drive the fabric energy efficiency improvements that are key to improving the housing stock. To address this, the SHNZS proposes to introduce a metric to reflect the fabric of the home, called the "fabric efficiency rating". This is intended to support future fabric energy efficiency standards and would provide a clear rating of the dwelling's fabric efficiency.

It would adopt the fabric metric proposed by the Climate Change Committee as part of its recommendations on domestic EPC reform and would be measured in kWh/m^2/year. The figures referenced in the consultation – between 71 kWh/m^2/year and 120 kWh/m^2/year for space heating – are based on EPC B and C equivalent values from research carried out by BRE[15].

The consultation notes that the fabric rating will be derived from modelled results. These are produced by applying the Standard Assessment Procedure[16] (SAP), which is currently being revised (to SAP11 – now referred to as the Home Energy Model). The changes to SAP are expected to be implemented from 2025 onwards and RdSAP[17] thereafter. Following

13 Energy Efficiency Standard for Social Housing post 2020 (EESSH2) review: interim guidance for social landlords - gov.scot (www.gov.scot)

14 Full details of the proposals, including variations in application, are included in the SHNZS Consultation Paper

15 BRE Development work relating to a potential new metric for EPC performance

16 The Standard Assessment Procedure (SAP) for the energy rating of dwellings is the methodology currently used by the UK and the Scottish Government to estimate the energy performance of homes.

17 Reduced data SAP (RdSAP) was introduced in 2005 as a simpler and lower cost method for assessing existing dwellings.

the close of the consultation, the Scottish Government will work with the review group to consider the final design of the proposed standard, and by that time, there should be clarity on the next version of SAP and RdSAP and their validity for use going forward.

Social landlords will ultimately require clarity on the requirements of the SHNZS, and the timetable for its introduction, to plan their investment programmes effectively. Clarity on the versions of SAP/RdSAP to be applied, alongside up-to-date stock condition data, will also be needed.

Limits on borrowing

Both local authorities and RSLs borrow, in different ways, to fund investment in social housing.

Local Authorities run their social housing activities through their Housing Revenue Accounts (HRA), which, to a large extent, are ring-fenced from the local authority's overall finances. The HRA collects rents from the authority's housing stock and meets the costs associated with management, maintenance and improvement of the properties, debt service on any amounts borrowed relating to the housing stock. Any residual surplus in capital expenditure can be invested in housing stock. As of March 2023, total local authority housing debt was £4.98 billion, which was forecast to increase in 2023/24 to £5.78 billion; £288 million of HRA revenue was spent on servicing housing debt. Borrowing is the most significant contributor to aggregate capital spending. In 2022/23 it contributed £619 million of the total capital investment with contributions from HRA surpluses and Scottish Government grants[18].

Local authorities generally borrow from the Public Works Loan Board (PWLB) because of the ease of borrowing and the better terms provided, compared to those offered by private lenders. In doing so, they are constrained by the Prudential Code, which requires the local authority's capital investment plans to be affordable, prudent, and sustainable. The individual approach of local authorities will be determined by their interpretation of "prudential", the level of existing debt and the status of their HRAs.

Some will undoubtedly be able to borrow more (and may already plan to do so). Still, overall, there will be a limit on how much can be added to their existing obligations. This limit could be further impacted if there are restrictions on the ability to apply increases to the principal source of repayment, namely rents.

Housing Associations, on the other hand, borrow from banks and other private financial institutions. As of March 2023, aggregate RSL borrowings were £5.08 billion. Total unutilised facilities were £860 million. To indicate the scale of borrowing activity, 25 RSLs took out 44 new loans in 2022/23. The Royal Bank of Scotland is the dominant bank lender in the sector, accounting for around 50% of all bank debt advanced. Non-bank financial institutions provided circa £1.4 billion (of the 5.08 billion) to the sector, with Prudential, M&G, Canada Life and Metlife being the largest lenders – a complete list is provided in Appendix A.

18 Housing Revenue Account (HRA) Statistics

Debt per RSL housing unit stood at an average of £16,217, marginally up on the previous year. Around 64% of RSLs' total housing stock was pledged to support their borrowings; this secured property is valued at approximately £8.44 billion, representing in the region 129% of the facilities available to RSLs[19]. It is worth noting that social housing properties are generally valued on the basis of Existing Use Value – Social Housing (EUV-SH) or Market Value subject to Tenancy (MV-T). Both valuation bases use discounted cash flows of future rental streams. Hence, property improvements, as per retrofit measures, will not be reflected in increased loan security values unless they result in increased rental cash flow.

As with local authority housing accounts, RSLs will seek to run a surplus on their activities to reinvest and, hence, build up cash reserves. Other income generating activities for some RSLs include mid-market rentals, care and supported living and factoring.

The housing association sector is generally viewed favourably by private finance providers, but it's important to note that the financial covenants between lenders and individual borrowers restrict the aggregate amount it can borrow. These covenants typically cover gearing (debt as proportion of total assets), valuation (valuation of housing stock/debt), interest cover, and more. Unlike investment in new housing, investment in decarbonisation does not generate revenues for the landlord and, if financed by borrowing, will have a negative impact on financial covenants. As such, stakeholder feedback across the sector has broadly indicated a general nervousness for taking on additional debt obligations. Furthermore, it does not increase the loan security value of their assets as market practice uses an asset value based on discounted future rental income (not a market value of the property). These factors may influence each boards' willingness to take on additional obligations, as well as a lenders' willingness to provide extra funding. In some cases, this may be impractical as there may be insufficient headroom within existing covenant structures. Lending is also generally secured, meaning that new facilities can only be taken on if sufficient unpledged assets support the borrowing. Boards of RSLs also have varying attitudes to gearing. As with local authorities, while there will be the potential to borrow more in aggregate across the sector, the position will vary from RSL to RSL.

The sector has a good credit record, but lenders are aware that several headwinds are likely to impact the financial standing of RSLs, including significantly higher build costs, higher operational expenditure, sub-CPI[20] rent increases, higher arrears levels and higher interest rates. Lenders have started tightening interest cover covenants, and the Regulator noted in its 2022/23 analysis of RSL loan portfolios that "some RSLs have reported potential covenant breaches to us around interest cover requirements."[21]

Aggregation, whereby a central borrowing vehicle is created and on-lends to individual RSLs, should deliver lower-cost funding based on established precedents. Several commercial aggregators already exist (e.g., The Housing Finance Corporation and GB Finance), so the structure of their loans is still likely to include security and covenants. By adopting a different risk profile (e.g. the Charitable Bond Programme, managed by Allia, which makes available unsecured loans), an aggregator may be able to lend where

19 Scottish Housing Regulator: Annual Loan Portfolio 2023

20 Consumer Prices Index, which is currently the headline measure of price inflation.

21 Scottish Housing Portfolio: Annual Loan Portfolio 2023

mainstream commercial lenders would not, but that will generally only be possible with some form of Government support e.g. de-risking by use of guarantees or first-loss capital. A further benefit of aggregation could be the concentration of expertise and achievement of scale in the delivery of the service being funded, with the aggregator taking responsibility for the delivery of the investment programme and providing the financing.

Competing calls on limited capital resources

Social landlords also have other significant capital expenditure requirements, outwith amounts that could be spent on emissions reduction through energy efficiency and clean heat. Among these are property improvements (local authorities, for example, spent £491 million on improvements to existing stock in 2022/23) and extensive new build programmes. High levels of cost inflation have impacted both of these areas. In 2021/22, the average build costs for local authority and RSL social rental properties were £169k and £167k, and Scottish Government grant support was 37% and 57%, respectively[22]. Per unit build costs are now estimated to be comfortably over £200k and could be considerably more in remoter areas. From April 2024, all building warrant applications for new builds must meet the NBHS, which requires heating to be climate-friendly. The Scottish Government has also committed to lay legislation in Parliament by 15 December 2024 to improve the energy efficiency of new buildings further, particularly with proposals that all new buildings will meet a Scottish equivalent to the Passivhaus standard, potentially to be mandated from 2028 onwards[23]. Based on feedback from recent and current Passivhaus developments, this could impact new build costs[24].

This would imply that social landlords may have to establish spending priorities within the capital expenditure envelopes that are available to them. For instance, setting expenditure to maintain the same level of AHSP builds will, assuming no additional financing becomes available, reduce the amount available to spend on energy efficiency and clean heat measures in existing buildings. Building a new house generates additional rental income; investing in retrofit measures does not directly, though it can mean that energy costs themselves reduce with the benefits often being provided to the tenant.

Availability of grant support from Scottish Government

Scottish Government budgets are under pressure, limiting the amount of additional grant support that might be available. This has been underlined by the statement by the Finance Secretary in September 2024[25] and the August 2024 Fiscal Update[26]. Grant support has been critical to previous phases of energy efficiency improvements to social housing.

22 Affordable Housing Supply Programme: out-turn report 2021-2022 ,Annex Table 10
23 Energy Standards Review – Scottish Passivhaus Equivalent: Working Group
24 RICS Construction Article – What to expect when procuring Passivhaus homes
25 Fiscal pre-budget update – 3 September 2024
26 Scottish Fiscal Commission: Fiscal Update – August 2024

Expertise in energy efficiency and clean heat

There are a range of different clean heat technologies and energy efficiency options available. Most landlords, and particularly those managing larger portfolios, will need to deploy a range of interventions, reflecting the diversity of their stock. Determining which is the most appropriate will be key in formulating the extent and pace of the associated investment programme. This determination has to be made against a background of sometimes rapid technological and statutory change. Not all social landlords will have the necessary resources and skills to undertake this type of planning or to gain a clear understanding of the benefits and risks of different options, as well as the costs in both emissions and financial terms.

Supply chain and skills

Delivering at scale poses its own set of supply chain challenges. One such challenge is the availability of suitably skilled contractors and suppliers. This issue is particularly pronounced in more rural/remote parts of the country, where supply chain issues can present a greater challenge. The quality of installs and workmanship can also be an issue. Whilst confidence in the supply chain is a significant challenge that needs to be resolved if we are to deliver retrofit at scale, it is not the focus of this report and so is not explored in any detail here.

Tenant support for implementing net zero interventions

While social landlords may be able to impose changes, it is beneficial if the measures have the support of tenants. Not all initiatives to date have been successful, and there is a risk that tenants have negative perceptions of proposed changes to their housing heating arrangements. Social landlords will want to be able to clearly articulate the benefits of the measures to tenants. From a tenant perspective, the impact on their total housing costs is likely to be a key focus and landlords will also need to keep Scottish Government commitments to a Just Transition and ending fuel poverty very much in mind. To the extent that retrofitting results in higher energy costs and/or higher rents to pay for the work, tenants will be less positive about the outcomes. Simple replacement of a gas boiler with a clean heating technology is likely to increase energy costs (see "Current economic proposition of clean heat for tenants below"). The inclusion of energy efficiency measures in a retrofit may restore cost neutrality but is unlikely to result in significant savings overall. Clear and reliable data which captures the likely impact on heating costs, and to a lesser extent, the impact on emissions, will be critical for both tenants and landlords in setting successful investment plans. Increased data clarity and reliability will also give confidence to potential private investors.

Knowledge of stock condition

Establishing an investment programme, particularly for energy efficiency improvements, requires good knowledge of the existing fabric. Notwithstanding the excellent work which has been carried out on EESSH 1, social landlords' awareness of their housing stock condition (and heat loss characteristics) is likely to vary considerably. Landlords need to have up-to- date knowledge of stock condition before they can initiate a soundly based investment programme and, where such information does not exist, gathering it may take some time. Funding has previously been provided from the Social Housing Net Zero Heat Development Fund to assist with this.

This is particularly important if the savings underwrite/insurance model is to be developed (see below for further detail). For a third party (or a landlord) to assume the risk of generating energy cost savings through implementing retrofit measures it will need detailed information on the condition of the stock and its existing energy performance.

Return to landlord

A key aspect of any investment programme, from a financial perspective, is the extent to which it generates any additional revenue or cost reductions, as additional revenue can then be used to service the financing which supports the investment. One other potential source of income which has been identified is the possible sale of carbon offset credits, arising from the reduction in emissions (the landlord would sell these to a carbon emitter). Whether this could be sufficient to support a financing model is discussed in greater detail in Section 5 below.

As another example, new social houses generate additional rent, but this is insufficient to support 100% commercial financing, hence the requirement for Scottish Government grant support (as per the illustration above). Investing to support improvements in energy efficiency and clean heat will not necessarily result in any reduction in overall energy costs, although investments in energy efficiency alone should, assuming no change in behaviours, deliver energy cost savings to tenants. Potential savings will be greater where higher cost sources of heating (e.g. electricity) are already in use. Where lower cost gas heating is the existing source, stand-alone savings from energy efficiency measures will be less and probably more than counterbalanced by the introduction of any more expensive clean heat source.

Even in instances where the investment was cash positive (in the sense of saving cost), the costs of the investment lie with the landlord while the benefit accrues to the tenant. This could be equalised, of course, by adjusting rents, but the key points are whether any savings are likely to be made, how these savings are measured and what represents equitable distribution of those savings.

Rent affordability

The obvious place to turn to generate additional income to support investment would be rents. Relatively small increases could raise significant sums to fund an expanded investment programme to support the implementation of the requirements of the SHNZS and continued new build. RSLs and local authorities, however, aim to keep rents as low as possible, so any such proposal would affect housing affordability adversely, particularly if compensating energy savings could not be demonstrated. Furthermore, there is an equity argument against applying an across-the-board rental increase when not all tenants will benefit simultaneously from improvements. Social housing tenancies are not going to be affected by the proposed rent controls set out in the Housing (Scotland) Bill currently going through the Scottish parliamentary process. Rent controls were temporarily applied to social housing tenancies through the temporary Cost of Living (Tenant Protection) (Scotland) Act 2022 - rents were initially frozen before a sector-wide voluntary agreement on increase limits was reached. The temporary legislation came to an end on 1 April 2024. As an indicator of the potential impact, the Scottish Housing Regulator estimated that a rent freeze in 2023/24 would have removed almost £60 million in rental income in that year from RSL business plans[27], demonstrating the financial contribution achieved from rent increases. One of the influencing factors on social housing tenancies' exclusion from future rent controls is the sector's need to finance its investment programme, including responsibilities for addressing need and demand, and quality and net zero investment in existing stock.

Social landlords are, as part of their duties, required to consult on rent increase proposals with their tenants. There are some social housing landlords who have responsibility for a much smaller number of homes with different forms of tenure which, at the time of writing, will be affected by proposed rent controls set out in the Housing (Scotland) Bill (e.g. Mid-Market Rental properties). Therefore, although limited, rent controls will still have some effect on the sector.

Average rents have increased over the past 20 years in real terms, although the past couple of years have seen rents decrease in real terms. There is considerable variation between local authorities in average rent[28]. Social landlords would point to two successive years of sub-inflation rent increases, which needs to be recouped to sustain investment. In its review of RSLs' five-year financial projections, the regulator noted that in 2023/24, 113 landlords had raised rents by less than CPI; only three had raised rents by more than CPI. For 2024/25 it is forecast that 27 will raise rents by less than CPI, while 98 will raise them by more than CPI. This trend (i.e. CPI+ rent increases) is forecast to continue.

The possibility exists of charging a new-build premium or a retrofit premium. Social landlords have generally resisted this as a matter of principle, but there is an argument that tenants living in a Scottish Passivhaus equivalent standard property (which is proposed as the mandatory standard for new builds from 2028), with significantly lower energy costs, could pay a higher rent than those living in a less energy-efficient property.

27 Scottish Housing Regulator - Summary of Registered Social Landlord Financial Projections 22/23-26/27
28 Housing Revenue Account (HRA) Statistics

Cost and timing uncertainty

Soundly based investment programmes have a degree of certainty on cost. Where there are material uncertainties not only on stock condition but also around the most effective measures to deploy and the cost of those measures, it may be difficult to arrive at any degree of cost certainty which could form the basis of a robust investment programme. This is exacerbated when, as will be the case for a number of RSLs, delivery of the solution may lie outwith its control e.g. where a Heat Network is proposed.

The SHNZHF (£200 million committed for allocation in this Parliament) has provided 50-60% grant funding to a number of social landlords for various fabric first and clean heat initiatives. Developing its experience on a) delivered capital costs and b) post project running costs would be very valuable in addressing a number of the challenges identified in this section.

Current economic proposition of clean heat for tenants

Current electricity and fuel unit prices mean that the case for conversion to clean heat from existing gas boilers, in terms of operating costs, is often marginal and in some cases will lead to higher overall energy prices for tenants. The case for houses with existing electric heating or other forms of fossil fuel heating (e.g. fuel oil, Liquified Petroleum Gas (LPG)) can be better, and in all cases, it can be better still where conversion to clean heating is packaged together with a set of energy efficiency improvements. This fundamental challenge is common to many if not all building sectors and may be partly addressed in the longer term by changes to electricity and energy market arrangements and by wider energy system interventions by the UK Government, though full clarity on the timescales and details of these are yet to emerge. This will need to be resolved if affordable solutions are to be delivered at scale, but it does not mean that good cases for individual installations of clean heat cannot be created in the meantime.

Mixed tenure

Many social landlords own properties in blocks/tenements where there are also private owners. Nearly 40% of Scotland's housing stock is classed as Multiple Occupancy Multiple Use ('MoMu') and these properties can present a considerable challenge for conversion to net zero. Retrofit measures will be more effective if applied to all properties at the same time. As these will generally be classed as improvements (rather than repairs), social landlords will need to consult and agree with the private owners on the work being carried out. As private owners will need to self-finance (possibly with the help of government support programmes) then this may slow progress and make agreement to the implementation of retrofit measures harder to obtain.

Overcoming challenges

This section has described some of the challenges faced by social landlords as they attempt to fulfil the requirements of net zero. The delivery models considered in this report are intended to help address some though clearly not all of these challenges. Some fundamental challenges will undoubtedly require coordinated interventions by many parties across the sector, and some will require the development and implementation of policies by both the Scottish Government and the UK Government. No single or group of delivery models will be able to address them all. Nonetheless, in Section 5 we begin to explore each model's potential to address or partially address the challenges set out above and to make progress towards net zero in the social housing sector.

6. Outline model structures

Considerations in the development and analysis of models

This section describes and considers the different models developed[29], with some exploration of their potential pros and cons. In practice, there is unlikely to be one model or approach with universal applicability. Given the sector's diversity, the number of borrowers (138 RSLs plus 26 local authorities), their differing size and financial standing, and, finally, the condition of their stock, different approaches are likely to be needed.

The models outlined below are split into two groups – the first considers revenue-raising possibilities, and the second considers capital financing structures. It is important to stress that the models are not mutually exclusive. A landlord could, for example, elect to apply to the SHNZHF for 50/60% of retrofit costs, borrow from an aggregator (which has the benefit of a loan guarantee from Scottish Government) to finance the difference and sell the carbon credits arising from the reduction in emissions, whilst also raising rents for tenants in retrofitted properties. For many landlords, a combination of approaches, sometimes including both capital financing and revenue-raising approaches, will be desirable to deliver their retrofit strategies.

One marked source of additional revenue, the deployment of more micro-generation activity (e.g. solar panels, battery storage, or wind turbines), was not considered. However, it could be argued that it should form a part of every landlord's overall energy management plan, including retrofitting. Micro-generation is likely to play a pivotal role in solutions where the private sector assumes the risk of energy savings and presents an area set for further development.

It should be noted that with any of these models, increased borrowing, whether through the PWLB or using existing relationship banks, will be an option for some landlords to consider when undertaking retrofit work, either as a sole funding source or merged with other funding streams. This conventional (perhaps default) model has not been separately assessed. It should also be noted that some of the models outlined below (e.g. the revenue-supported models) assume that the landlord has access to sufficient private finance to make the required investment.

There are a wide range of social landlords, and not all models will be equally applicable to all of them. Complex models with (potentially) high landlord set-up costs are unlikely to be appropriate for smaller organisations, for example, Table 2. (Appendix C) provides a

29 It should be noted that whilst a "Hub Institutional Finance Model" was proposed by stakeholders as a potential solution it has not been included in the list of possible models. It is understood that this model requires a ground lease to be granted over properties and that the cash flows (rents) arising from these properties are dedicated towards payment of the service charges, with the landlord guaranteeing any shortfall. This is unlikely to be compatible with the financing structures that social landlords have in place for their existing stock. It may be better deployed towards the delivery of new stock. The financing mechanism embedded in the model – an indexed lease – is one of the balance sheet funding options open to landlords, alongside bank debt, capital markets and the PWLB. Analysing the relative attractiveness of these borrowing routes falls outside the scope of this exercise.

summary of which models are likely to apply to differing group of landlords, based on the following considerations:

- Size of landlord (small/large).
- Geographical location (urban/rural).
- Type of landlord (registered social landlord versus local authority).

This mapping exercise informed and contributed to our overall analysis of the potential for each of the models to support the various sector organisation types.

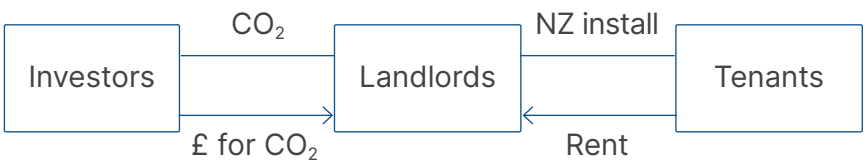
Finally, before moving to the individual models, it is worthwhile considering the distinction between "finance" and "funding" as the two terms, which have different meanings, tend to be used interchangeably (as may happen, in places, in this report).

- Any asset ultimately has to be paid for (or **funded**) either as it is built or as it is used. Funding for infrastructure assets come either from public sector budgets, or from "customers" in the form of user/occupier/developer charges.
- If the asset is paid for as it is used, a form of **finance** (which comes with an expectation of repayment) can be raised to build the asset. (An exception is an asset financed using corporate or national debt where the debt stock is increased in perpetuity to pay for the asset. As this form of borrowing is not available to Scottish Government it is not considered any further). Financing can be either public sector borrowing or private debt/equity financing.

Revenue focused models

These models raise finance to fund investment with additional revenue streaming and energy saving being used to repay investors.

1. Sale of carbon credits



Description

The social landlord measures the reduction in emissions resulting from the energy efficiency and clean heat work it carries out. Every tonne of CO2 saved generates one carbon credit, which can then be sold, generating an annual income stream for up to twenty years (as per the Housing Associations Community Trust (HACT) scheme). Carbon credits can only be generated once the work has been completed; there doesn't appear, as yet, to be any market for "prospective" carbon savings. It should be noted

that by selling carbon credits the landlord will not reduce its own reported emissions (credits cannot be counted twice).

Independent verification of the savings is clearly important. The HACT Retrofits Credit scheme claims to be the first scheme based on housing retrofit savings in the world and uses Verra Registry[30] to provide independent certification of the savings. There does not yet appear to be any other providers of this service, and it is not clear whether there are generally accepted principles for assessing carbon savings from a given range of housing archetypes and retrofit interventions. There are private providers/suppliers such as Knauf Insulation, for example, which provide the ability for Energy Efficiency Metering[31].

The financial benefits that could arise depend upon two variables – the extent of the carbon saved, as this will generate the number of available carbon credits, and the price at which the carbon credit can be sold. As this is very much a nascent market, there appears to be little hard data on either of these. There is no established marketplace (or market maker) and generators of carbon credits appear free to set their own prices, which appear to vary widely. Perhaps the best indicator in that respect is the data quoted by HACT with respect to the pilot of its Retrofit Credit project. It is also worth noting that as the grid decarbonises the carbon intensity of electricity will diminish and therefore electricity-based energy savings will consequently deliver less carbon savings.

The HACT Retrofit Credit pilot involved 6,716 homes, with the retrofit work generating 1,481 carbon credits and raising £107,426 (gross). This would imply that each home generated 0.22 of a credit (i.e. 0.22 tonne of carbon saved) and each credit sold for circa £72; so, each home is generating additional income of £15.84 p.a. for the landlord from carrying out the work. The pilot also added £867,635 of social value, but this does not translate into a cash sum (and has no resale value). HACT states that it has sold all the credits generated through the pilot, with The Economist Group, Berkeley Group, Unity Trust Bank and Ibstock securing significant tranches.

High-level analysis indicates that replacing a gas boiler in a home with an annual energy consumption of 12,000kWh (gas heating[32]) with an Air Source Heat Pump would achieve a carbon saving of c 1.22 tonnes. While this would generate more value than the HACT example, it would still not be a material sum.

- The sale of carbon credits can generate additional revenue for social landlords, which will help to defray the costs of retrofit work. However, based on the current understanding of the amount of carbon credits generated and the value of those credits, the contribution will be partial at best. Nonetheless, carbon credit benefits will result from retrofit work, and the associated value could be realised.
- As noted, there does not yet appear to be any developed marketplace in carbon credits, nor the widespread adoption or comprehension of a verification

30 Home - Verra
31 Knauf Energy Solutions
32 Ofgem: domestic consumption

methodology (which, to avoid eroding the benefits of sale, should be cost effective and readily understood/adopted). There may be a role for the Scottish Government to play in encouraging a wider understanding of carbon credit benefit and in facilitating a verification process. This could extend to underwriting the price of a carbon credit, thereby providing certainty to landlords on potential revenues and potentially increasing their marketability through aggregation. The risk would be that if the underwritten price was too high or there was insufficient demand for the credits then Scottish Government would own the carbon credits.

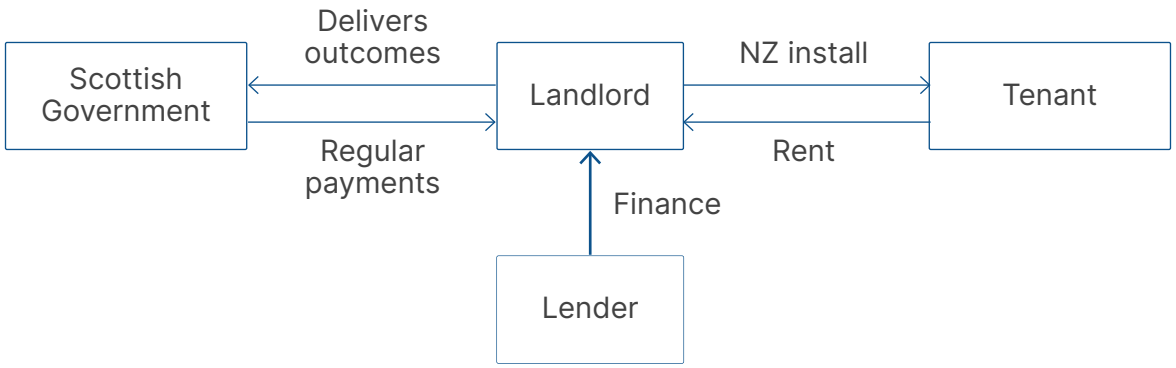
Pros

- Creates new revenue stream.
- Consequential benefit of capital works being undertaken requires minimal additional expenditure to realise benefits (mainly verification).
- No impact on existing borrowing arrangements (potentially favourable impact through increasing net revenues).

Cons

- Significant resources and time required to transition from nascent market to established market. Furthermore, significant complexity in developing market, verification and price mechanisms.
- Based on current indications, unlikely to raise significant sum.
- Revenues only recouped after the work has been completed so still a need to finance work.
- Landlord's emission reduction not recognised.

2. Social housing accelerator



Description

This would build on the experience of outcomes-based funding, such as the Growth Accelerator and other similar schemes (such as Tax Incremental Financing, Learning Estate Investment Programme, etc.). Essentially this would involve agreeing a set of outcomes with the social landlords and Scottish Government agreeing to make payments, on a recurrent basis, only if those outcomes are achieved. From Scottish Government's perspective this would be a revenue supported funding measure. The landlord would seek to agree revenue payments which allow it to invest within a reasonable risk appetite. However, it would have to accept such payments are contingent on its investment meeting pre-defined performance outcomes. This strict contingency – which must leave some risk with the landlord (i.e., the outcomes are achievable but challenging, linked directly to the efforts made by the landlord) – is an essential part of the mechanism.

Outcomes could consider factors such as emission levels, tenant living costs, health indicators etc. The level of technical due diligence and technical support could be sculpted to need.

This model could assist in meeting various wider policy aspirations of the Scottish Government. In theory it could be revenue neutral if elements of budgets could be reallocated at a central level. For example, a landlord who carries out net zero work may, through the provision of warmer homes, reduce the demands on the local NHS. The chances of this being recognised by way of a financial payment from the local NHS are negligible; a centralised reallocation of funding to pay for this specific outcome may be more feasible.

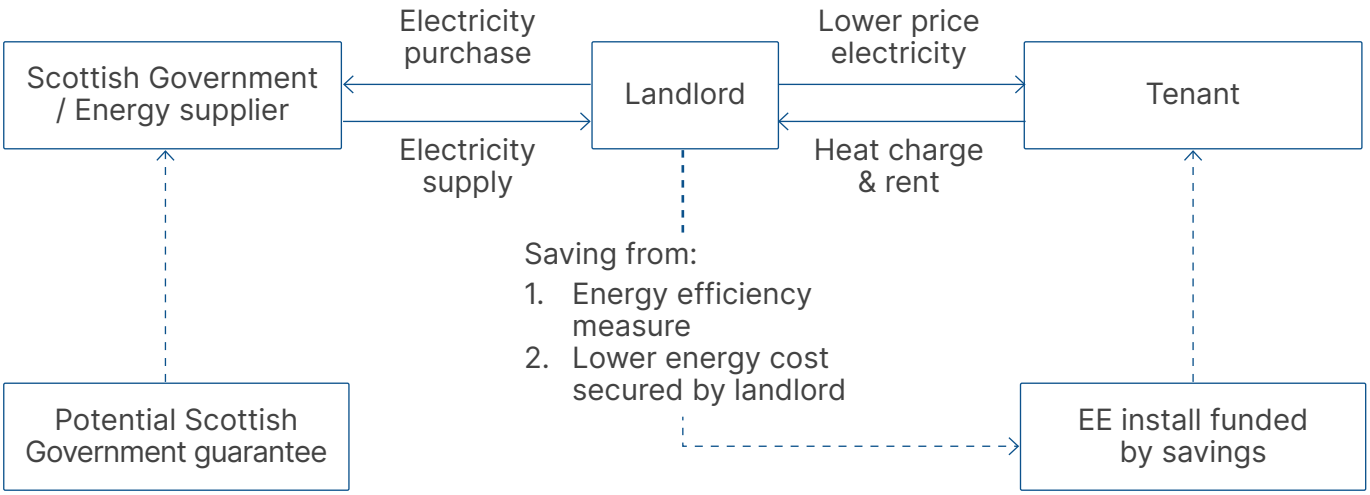
Pros

- Leverages in capital – landlord must fund work via lenders providing finance.
- Assuming successful outcomes, the landlord's operating position, post completion, relatively unaffected.
- Lending to landlords encouraged by outcomes-based Scottish Government support, although dependent on outcomes being achieved.
- Minimal impact on tenants (other than impact on energy bills).
- Capable of at-scale roll out.
- Could be revenue neutral for Scottish Government, although this could be challenging to achieve.

Cons

- Assumes landlord has access to sufficient private finance to make the investment – see previous comments about balance sheet/covenant constraints on social landlords.
- May be a structure better suited to local authorities which have ready access to PWLB funding on prudential basis and may be familiar with structure.
- Potentially significant, long term demands on Scottish Government revenue budget.
- Which must be budgeted for, with potential uncertainty around amounts and timings depending on project completion and success.
- This mechanism also requires multi-year funding to be available to ensure that future payments to landlords under this model can be guaranteed as outcomes are met.
- Difficulty in capturing or measuring all of the potential benefits as relates to wider policy aspirations.

3. Heat with rent



Description

This model would specifically address the "return to landlord" challenge, which is that any saving arising from retrofit measures accrues to the tenant, while the cost of implementing them falls to the landlord. If the landlord was also to assume responsibility for the heat and power bills then it could reap the benefit of any cost savings arising from the improvements and translate this into improved cash flow, while passing part of the benefit on to tenants. Fundamental to this model is the assumption that savings will arise which may not always be the case.

In addition, it is probable that landlords (particularly local authorities) can access more favourable utility supply rates than individual tenants, which might be helpful in creating or enhancing potential savings. Scottish Government may be able to provide supporting guarantees to the energy supplier which could possibly further improve the underlying cost of supply to participating landlords.

Under this model the landlord would change the basis of its tenancy agreements and charge tenants for rent and power utilities (historic utilisation details would also be required). The tenant should see at worst, no change in their overall cost of housing, while if the retrofit measures are successful in reducing energy costs, this cash would be realised by the landlord. In effect the landlord is taking risks analogous to an energy performance contract and, in theory, this could be passed to a party which specialises in this area, provided the savings are real and reasonably certain.

This would, however, require a major change in business model for virtually all landlords and the recognition of new risks, which they may not have the skills and tools to manage. The key issue would be developing a clear picture of the savings (if any) that would be generated, implying access to a good level of technical knowledge and the supporting data. A utility pricing mechanism may also still be required, for example, as it would still be reasonable for both tenants and landlords to expect that the energy element of their costs showed some relationship to the wider energy market. It is possible that the landlord would have to become an Energy Services Company (ESCO).

In addition, both boards/councillors and tenants would need to be carried along. Boards of RSLs tend to be risk averse and may require to be persuaded that the benefits of this type of structure outweigh the risks. Tenants may also be suspicious, as they would lose control over one important aspect of household expenditure; on the other hand, there might be no constraints on the incurrence of energy costs, as usage might now be a landlord risk unless constraints were included such as additional charges for monthly consumption above a specified level to avoid misuse, and might be possible with the recent advent of smart metering and tracking. And, in the case of RSLs, lenders would have to be persuaded that financing some or all of the work could still be done within an acceptable risk profile.

There are some landlords already acting as energy suppliers. North Glasgow, for example, run heat pumps supplying some of their tower blocks, charging tenants rent and a separate utility amount. The initiative has faced some challenges, but lessons from this and other similar schemes might be applied to future projects.

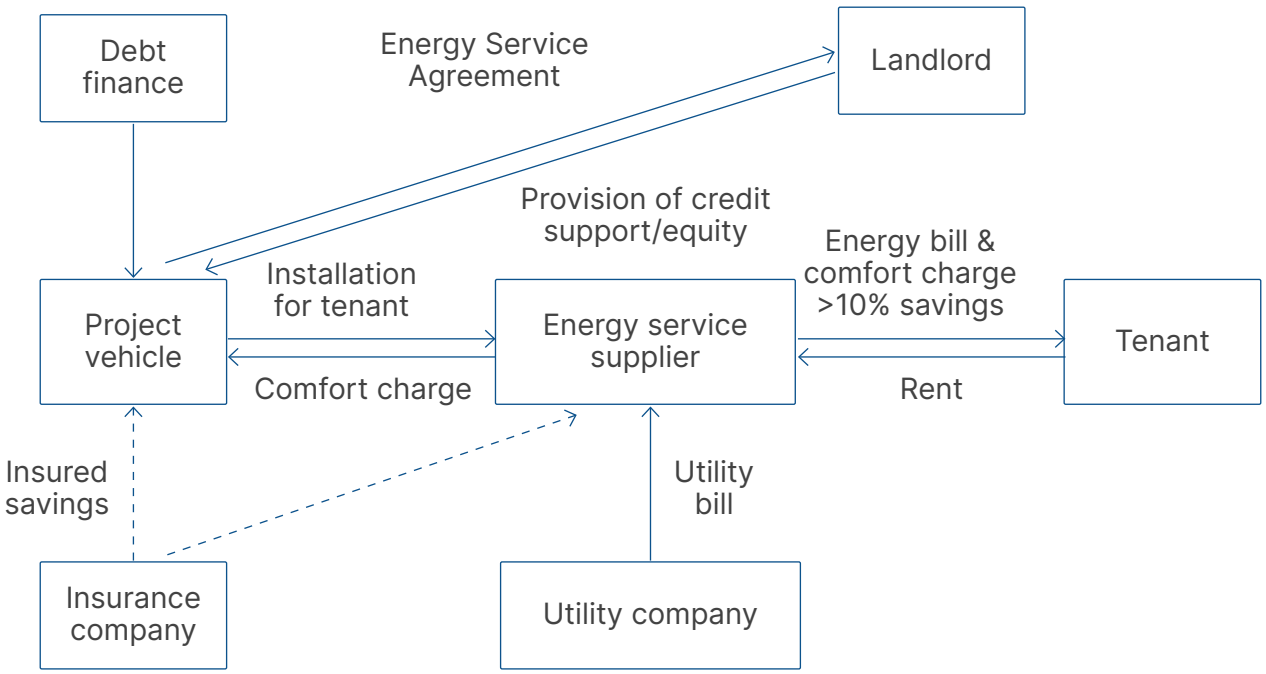
Pros

- Savings, if realised, would generate additional cash flow for landlords.
- For local authority landlords, this could fit in with the implementation of heat networks/LHEES where a charges for heat offtake would be made.

Cons

- Would take time to implement.
- Possibility of tenant and board resistance.
- Risk that savings aren't delivered after the work has been completed, so still need to finance work (possibility of supplier funding – energy performance contracts).
- Increases risk profile of landlord.
- Potentially introduces/increases disparity of charges across the housing stock e.g. larger houses/more occupants will have larger utility element.
- Does not necessarily drive energy efficient behaviour at tenant level in and of itself, unless potential risks can be addressed (education support provided to tenants may prove to be valuable).

4. Third party takes energy savings risk



Description

A third party agrees to take on the risk of achieving energy cost savings for tenants and sets up a project vehicle to ring-fence the services and risks, as well as cover maintenance costs. A third-party Energy Services Supplier provides energy (to the tenant), optimises tariff, manages the billing comfort charge, and enables switching. An insurance company then insures against these risks, allowing the project vehicle to raise third-party funding to carry out the work.

For example, suppose a property has an annual energy bill of £2,000. In that case, the partner will identify combined savings of, say, £600 from implementing retrofit measures and introducing some localised generation and associated technology (e.g. solar panels/batteries). Of this, possibly £500 will be required to pay for the capital costs and provide the third party with a return, leaving the tenant a net saving of £100, and the landlord with an energy efficient property and clean heat heating system. A more detailed example can be found in the footnote link below[33].

The concept is not dissimilar to energy performance contracts which are offered by some energy service companies, although generally linked to larger buildings/ facilities. Energy performance contracts were specifically provided for in the Scottish Governments Non-Domestic Energy Efficiency Framework as a means of supporting energy efficiency investment and improvements.

Financing of the work is provided as part of the package. The identified energy savings can be backed up by an insurance policy, which provides lenders with sufficient comfort to lend against them. The improvements are carried out through a project vehicle.

These models would appear to be in the early stages of development and the full contractual relationships between the various parties are not clear. How the arrangements might sit with existing lending arrangements and, more importantly, security packages would require clarification, but the presumption is that the borrowing would be off-balance sheet for the landlord.

The landlord is likely to have some obligations – it will have to contribute some equity (or credit support) to the project vehicle, possibly up to 30-40% of the total being raised and it will have to negotiate access to its tenants, as well as taking on some "soft" risks e.g. voids. There could be a role for Scottish Government to assist with the equity contribution but, in the absence of this, the model utilises only non-government financing.

The Home scheme[34] received funding (£199k) in May 23 from Green Home Finance Accelerator to establish commercial viability of this type of retrofit guaranteed savings model and so is of possible interest to the private sector.

33 Part Three: Financing that Continually Optimises Residents' Savings – Tallarna
34 Home (elpsenergy.com)

It is clear, however, that the model relies on adequate data being available on both housing stock and tenant behaviour in order that the partner can be sufficiently certain of extracting savings and generating revenues. As it also runs contrary to the generally held opinion that there are limited, if any savings through the introduction of retrofit measures (energy efficiency as well as possible clean heat generation such as rooftop photovoltaics with battery storage), it is probable that the generation aspect is an important contribution in this regard and that the model can only be applied to parts of the total housing stock.

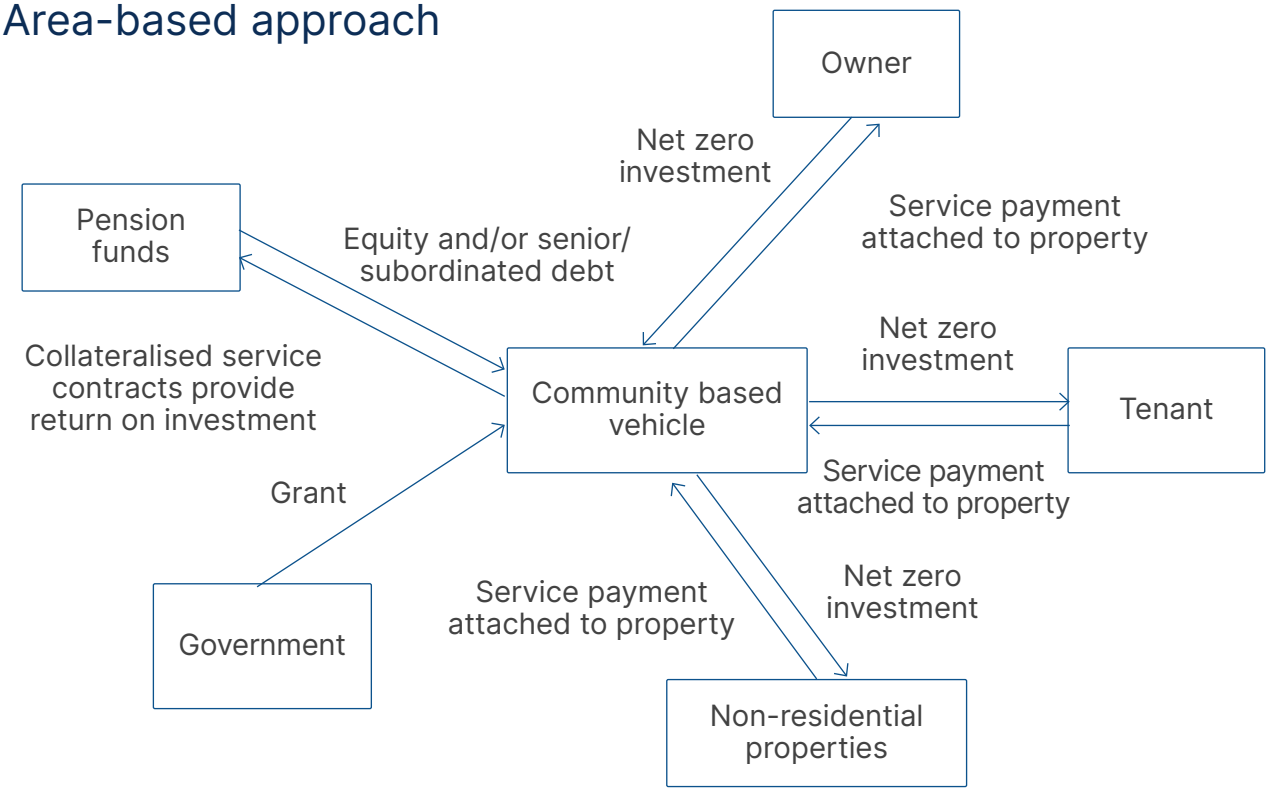
Pros

- Energy savings delivered to tenants.
- Privately financed with non-recourse debt.
- No balance sheet impact, no ongoing revenue impact.
- Limited financial obligation on landlord.

Cons

- Possibly limited in application due to commercial viability.
- Complex, possibly high set-up costs and operating costs (including potential that insurance costs result in the proposition not being financially viable).
- Contractual structure/risk allocation unclear.
- Ability of landlord to support 30-40% equity contribution, unless provided by others e.g. Scottish Government grant capital or guarantee.
- Third party would need to be provided with robust up-front knowledge of emissions/ energy cost savings potential, derived from reliable performance data and access to homes before investment.

5. Area-based approach



Description

An area-based model is a concept that integrates local net zero projects into attractive investment propositions by creating scale and long-term certainty for investors, thereby joining up the different types of assets that are important to decarbonisation. The diagram above shows one example of an area-based model, but the model comes in many forms. One example is the 3Ci Net Zero Neighbourhoods (NZN) which is a partnership between Connected Places Catapult, Core Cities UK, London Councils and other local authorities across the UK aimed at supporting local authorities secure the necessary long-term finance for achieving net zero. This includes transforming transportation, energy, housing and waste services in a coordinated way, using a blended finance model (supported by government capital grant) capable of attracting capital from banks, pension funds and other institutional investors. 3Ci's proposals[35] include a programme of technical assistance and capacity building to ensure projects are of investment grade.

The proposals have a special focus on residential retrofit where a core problem is that every neighbourhood has a different mix of housing types and tenures, which could make the collective investments needed to decarbonise neighbouring homes difficult. NZN brings together these differing property interests in a collective investment vehicle which aims to address residential retrofit at no cost to the homeowner or tenant and reduce the need for public subsidy from around 70-80% to 35%. It aims to achieve this by creating a revenue stream from energy savings over the long-term which is attractive

35 3CI NZN Outline Business Case

to capital investors, blending their contributions with smaller amounts of public subsidy in the investment vehicle. The model also allows for a saving to be passed to the householder, or used to target fuel poverty, helping a just transition to net zero.

Funding from the private sector would be leveraged in, with repayment being generated through "pay as you save" i.e. as savings are realised by individual households, they get paid to the funding vehicle via a determined mechanism (see below). Pension funds are assumed to invest on the back of this future income stream.

It's fundamental that any area-based models have a sufficiently robust mechanism in place to ensure that energy cost savings are captured and passed on to the private finance providers. Possible mechanisms are:

- Using the pre-existing Green New Deal legislation and financing mechanism to collect the cost of energy efficiency measures through the utility bill.
- Using a local land charge to create a payment obligation to the local authority, via council tax billing mechanism (on balance sheet and would require further legislation – not likely to be viable for local authorities).
- Using a deed of covenant to create a direct payment obligation to the funding vehicle subject to a stipulation that requires the original recipient to procure a matching obligation as a condition of transferring ownership of the property (this would be the preferred option for a demonstrator model but can't be applied to the social housing sector – the landlord could underwrite the obligation instead but to avoid this being another charge on its income an additional mechanism would have to be found which allowed it to capture the benefit of any related savings).

With area-based models, the risk of low demand or uptake and the risk of underachievement of predicted energy cost savings are significant risks. Therefore, in any place-based arrangement, the proposed demand, CapEx and savings would need to be thoroughly evidenced and verified before being taken forward as an at-scale solution.

There is much activity and potential opportunity in this space which Scottish Government and social landlords should, where appropriate, engage with and support. However, our engagement with several social landlords suggested that it would be difficult for many of them to lead (rather than be an active participant) in driving forward area-based approaches without reprioritising limited resources.

Pros

- Integrated, area-based approach.
- Property linked finance to secure funding from private sector.
- Potentially no obligations on landlord (depending on nature of property linked finance).

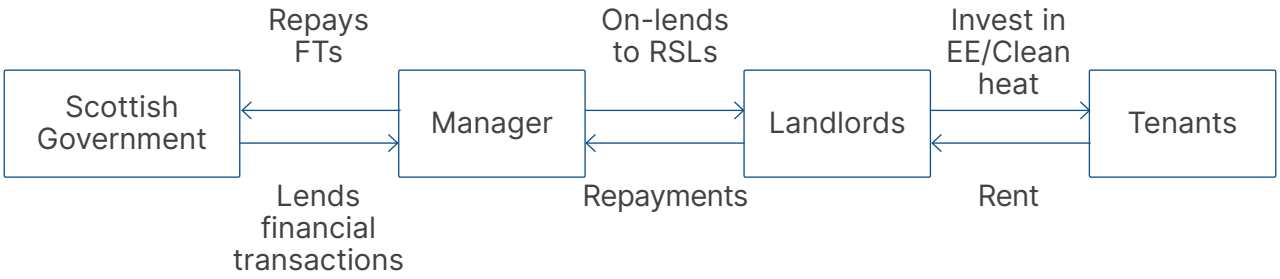
Cons

- Property linked finance is not a familiar concept in the UK market.
- Predicated on energy cost savings repaying finance, meaning potential unwillingness of lenders to accept energy cost savings as source of repayment (insurance products, if available, could mitigate this risk but could result in the proposition not being financially viable).
- Relies upon relatively high levels of tenant uptake across multiple tenures.
- Deliverability – multiple tenure types would need to be accommodated.
- Our engagement with several social landlords suggested that it would be difficult for many of them to lead (rather than be an active participant) in driving forward area-based approaches without reprioritising limited resources.

Capital financing models

In essence, most of these revolve around different ways of streaming government capital support to leverage additional private-sector capital.

6. Modified Charitable Bond Programme for retrofit



Description

This would build on the Scottish Government's existing Charitable Bond Programme. Under this scheme, which is currently only available to finance new build social housing developments, Scottish Government utilises Financial Transactions (FTs) to fund loans to RSLs. The manager (Allia C&C for the existing programme) undertakes several functions such as monitoring borrower payments, checking covenant compliance, and conducting regular credit reviews, amongst others. The Scottish Government retains credit risk on eventual repayment.

These loans, styled as charitable bonds, are unsecured, from £1 million upwards and with maturities out to 15 years. Allia has a competitively tendered contract (until March 2026) from Scottish Government to source RSL borrowers, creating "charitable bonds" through which Scottish Government then invests Financial Transaction (FT) monies. The

total invested by Scottish Government through this mechanism exceeds £480 million. At present funding is for new build only. This model could retain the basics of that structure but changes the criteria such that funds could be broadened to allow deployment of retrofit measures.

The rate of interest is fixed at gilts plus a nominal margin but is rolled up into the debt and paid on the maturity of the loan. The gilt element of the interest is placed in a separate fund by Scottish Government and allocated by way of grant to social landlords. This "interest" element has generated over £141 million in additional grant funding for the sector. The net return to Scottish Government is the margin on the bond.

Because of the interest roll-up, the impact on any cash-based debt service cover ratios is minimal, and there is similarly little effect on the borrower's operational cash flows (at least until the principal repayment falls due). There is no requirement to give security or seek consent from existing lenders to give security, although borrowers must maintain sufficient unpledged assets to cover the amount of the loan. The Scottish Government retains credit risk on eventual repayment, although Allia C&C, the manager of the scheme, is responsible for the initial credit assessment of borrowers and also carries out an annual credit assessment. Allia's management contract runs to March 2026.

There would not necessarily be any assessment of the relative merits of the retrofit measures being proposed, which would be left to the borrower's discretion (clearly an element of technical analysis could be incorporated, but only at the expense of the relative speed and flexibility of the scheme - ultimately this is a loan, not grant scheme). It might also be possible to broaden the investor base towards private investors – Allia runs a Retail Charitable Bond Programme,[36] but the interest rates will reflect commercial levels, reducing the appeal of this source to RSLs. Effectively, this scheme is another source of debt finance for RSLs. Hence, take-up would be determined by its relative attractiveness compared to other sources of borrowing.

Pros

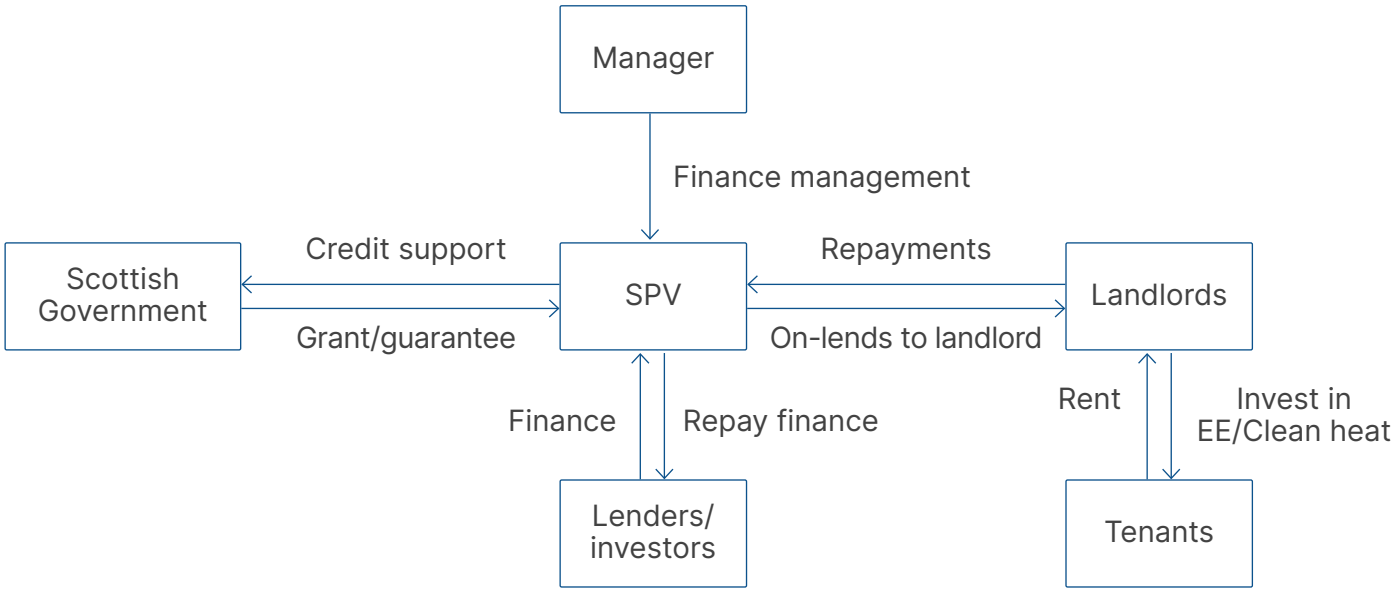
- Public funding is repayable (but not recyclable – FTs have to be repaid to UK Treasury).
- Established mechanism (albeit currently only available to finance new build social housing developments).
- Lower cost funding for RSLs.
- Easily understood.

36 Allia-RCBguideScreenRes.pdf

Cons

- Not conditional on borrower contributing own funds (leveraging in private capital) although in many cases this will happen to some extent.
- Additional debt, so will be constrained by borrowers' gearing levels/financial covenants.
- It creates an additional cash outflow for the landlord, without there necessarily being a sufficient corresponding increase in income. i.e. revenue/savings risk is retained by the landlord. (Existing model is based on new supply which will generate new rental income stream).
- Supply of FTs limited and not guaranteed in future budgets (c.£49 million of Financial Transaction monies in 2024/25 Scottish Budget, split between Charitable Bonds and the Open Market Shared Equity scheme).
- Technical assessment of retrofit proposals is required.

7. (a) Financial-aggregator/(b) Super-aggregator



Description

In its simplest form, this would involve the establishment of a new SPV, part funded by Scottish Government capital and part funded by private loans. Private sector funding can be attracted by structuring the Scottish Government contribution as "first loss" capital and this may also assist in allowing the SPV to offer terms more attractive to landlords (as regards security, covenants, drawdown etc.). A manager provides services to oversee disbursements and repayments to borrowers, as well as undertaking credit reviews, compliance checks etc. to oversee deployment of the finance.

The SPV makes loans available to landlords at a blended rate of interest – if the Scottish Government contribution is at a concessional rate this will be below the commercial rate – and receives repayment from landlords over time, potentially relending the proceeds. From a landlord's perspective it receives lower cost funding and, as noted above, potentially easier terms and conditions. The existence of some government provided first loss capital may also enable social landlords who could not otherwise raise additional funding to access borrowing from the aggregator.
A variation on this would see all capital provided by the private sector, with the aggregator effectively securitising loans made to landlords and packaging them for capital market investors; the benefits for the landlord in this case may be a marginally lower funding cost or longer maturity debt than would be available from other sources. The aggregator does not, however, create any additionality of credit – all borrowers would have to be creditworthy in their own right and would be borrowing through the aggregator as an alternative to other sources, not as a supplement. A number of such aggregators already exist (such as The Housing Finance Corporation[37]) and therefore there may not be a need to establish another.

Under this aggregator model, however, the finance flowing through to the landlord is still debt and, therefore, subject to the limitations imposed by landlords' existing gearing levels and financial covenants. A possible way of addressing this would be to expand the remit of the SPV, turning it into a "Super-aggregator", which engages, manages and pays contractors to carry out the work for the landlord and then charges the landlord a service fee, which would be sufficient to cover the capital repayments, any financing costs and the contract management/maintenance fees. This essentially adds a further step removed between debt providers and landlord – potentially reducing individual landlords' credit/financing considerations.

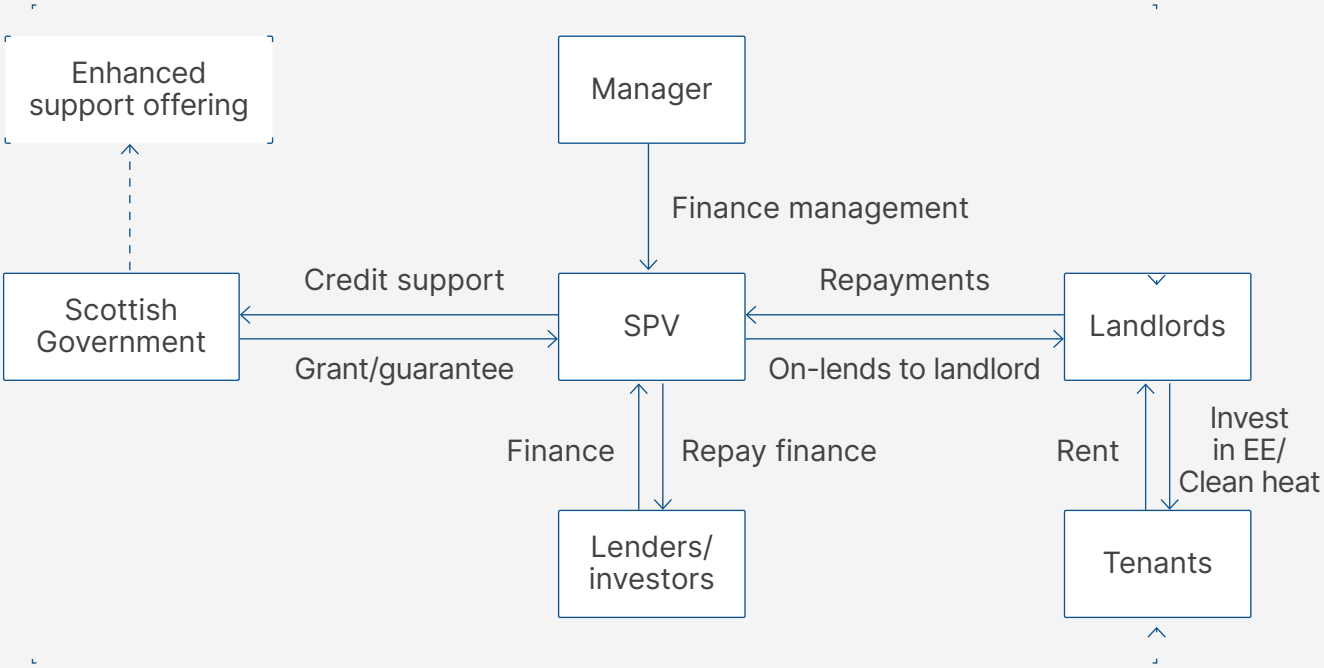
Characterising the payment as a service charge rather than debt service (subject to accounting standards, which are quite strict on this) would potentially avoid including the payment in existing financial covenants. Regardless of whether it is classed as a debt obligation or service charge, however, it would create an additional cash outflow for the landlord without any corresponding increase in income.

As well as clarifying the accounting question, consideration would require to be given to ownership of the assets, contractual relationships among the parties and, fundamentally, how much risk remained with the SPV (ideally this would be as little as possible). Alternatively, the Scottish Government could underwrite the risks, either through guarantees (to the financiers of the SPV) or through contributing more second-tier/equity capital to the SPV's funding structure.

It would also require the provision of significant additional resources, skills and set up costs for the SPV, while, potentially, allowing economies of scale to be realised, along with the creation of an enhanced multidisciplinary support resource which would marry funding to sensible retrofit proposals i.e. a one-stop shop concept. It is possible that this additional

37 THFC – The Housing Finance Corporation Limited - (thfcorp.com)

support resource could grow or be derived from a more general enhanced SHNZHF support offering, outlined in more detail below and might provide a useful first step towards establishing a Super-aggregator type model. A simple illustration is provided below.



If this model were to be developed further, it would be very important to ensure that there was buy-in and commitment from the sector, bearing in mind that past attempts at collectivisation have not always resulted in being adopted or used by the social housing sector e.g. the HARIS scheme[38] – although it did have different objectives). It would also require a single point of responsibility for delivering the model, with a budget to engage the necessary levels of professional expertise.

Pros

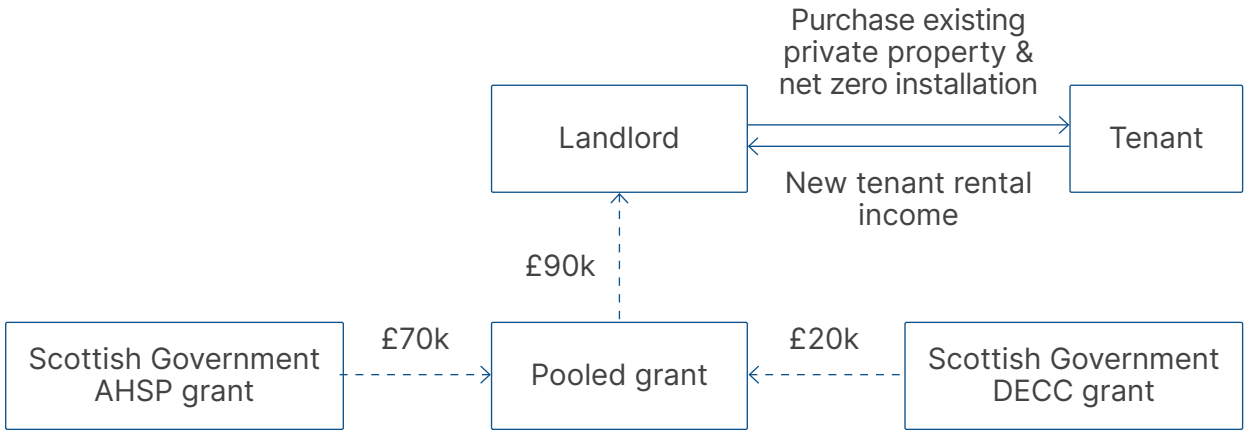
- Source of lower-cost funding for landlords.
- Creation of sector financing and technical support body.
- Enables smaller landlords to access financing and expertise.
- Blends private and public finance.
- Government support could create credit on better terms (e.g. lower rate/easier covenants).

38 Donald Lockhart HARIS scheme

Cons

- Regardless of whether classed as a debt obligation or service charge, it creates an additional cash outflow for the landlord, without there necessarily being a corresponding increase in income through rent i.e. revenue/savings risk is retained by the landlord.
- Potentially still classed as debt and hence subject to landlord borrowing constraints.
- Requires significant collaboration across the sector and would take considerable amounts of time and resource to establish. Set-up costs could be significant.
- Sector buy-in uncertain.
- Super-aggregator manager may be difficult to identify (a blend of technical and financial roles) although a consortium could be formed.

8. Combined grant



Description

In this model, grant pools from both the AHSP (More Home Division) and the SHNZHF (DECC) are combined and used by social landlords (in addition to other lending they have secured from lenders) to purchase existing private property available on the market, then undertaking conversion to create a 'net zero' property. The new tenant's income is used to repay the landlord's financing.

It is readily apparent that new build costs have risen considerably and are likely to rise further. In some parts of the country, these costs exceed the cost of buying existing properties in the open market. While the costs of converting existing properties are likely to be substantial, the net result could be the creation of a net zero property at a lower cost than building one from scratch. And although the overall supply of housing is not increased (unless conversion of existing non-domestic buildings is considered) it does improve the supply of social housing and quality of the properties.

It also addresses the affordability limits of current grant levels, which against the background of rapidly rising build costs, will be insufficient to support new builds without greater contributions from landlords. Many will not be in a position to make greater contributions towards development. This has been exacerbated by funding cuts – many private sector sites with Section 75 – delivery elements have been stalled - because the cut in funding mean it is difficult to find social landlords readily available to purchase these homes. As such, discussions with developers have indicated whole sites (including private sector housing) are stalled, as Section 75 requirements cannot be fulfilled.

Given the increase in number of empty homes as well as private landlords exiting the market, there is the opportunity for social landlords to potentially acquire these properties and bring them to the required net zero standards.

In addition, some rural areas have limited (if any) new build developments and/or are not attractive to new build developers (even where land might be available for development), so there is potentially unspent grant in these regions.

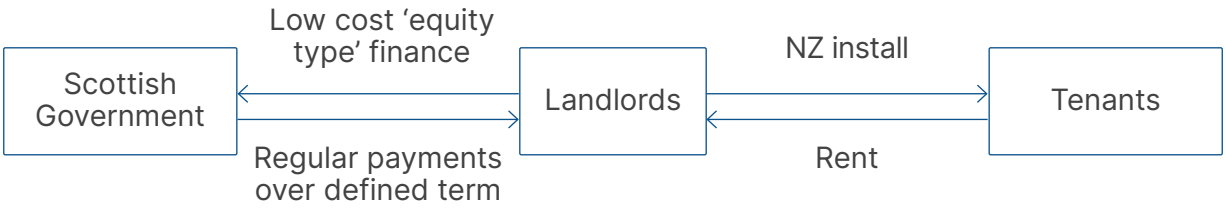
Pros

- Property is retrofitted before occupation.
- New tenant income helps fund the net zero property purchase.
- Contributes to increasing available social housing, avoiding embodied carbon.
- Would support multiple policy areas including Town Centre Living.
- Avoids having to meet any future increases associated with enhanced new build standards.

Cons

- Utilising Scottish Government grant would require piecemeal (as opposed to bulk) purchases.
- Landlord still requires financing sources for property purchase.
- Risk associated with retrofitting properties which have been purchased with limited knowledge of current condition.
- Does not contribute to increasing overall housing supply, unless change of use type refurbishments or bringing empty homes back into use are considered.
- There may be internal concerns/restrictions to blending varied Scottish Government grant pools.
- Does not deal with retrofitting existing social housing stock, which is by far the biggest part of the challenge.

9. Quasi-equity options



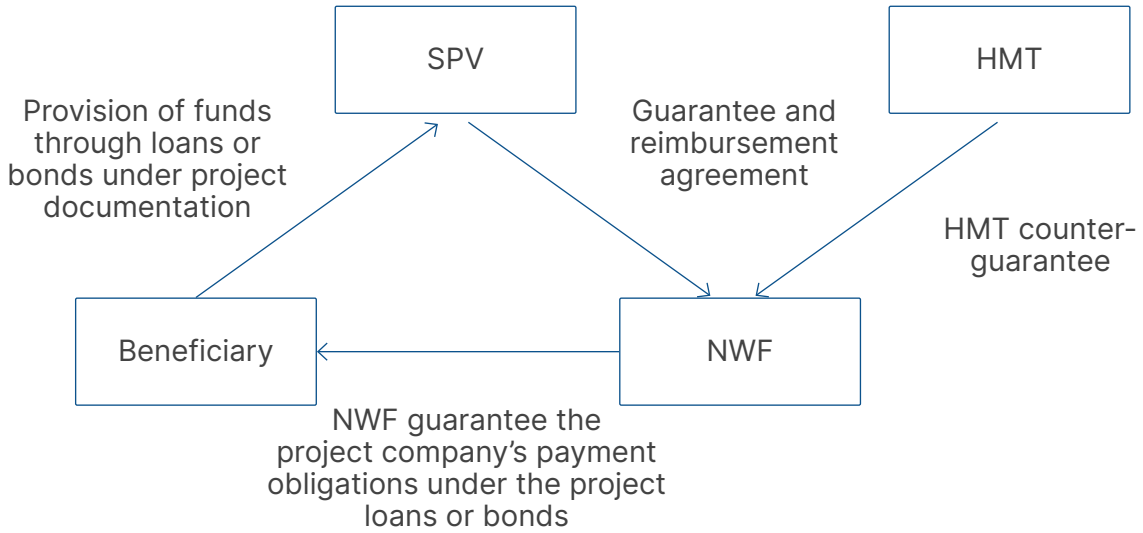
Description

The Scottish Government (or another public sector entity) subscribes for "equity" in the RSL. The objective with this model is to try and create an avenue of funding which is not classified as debt, thereby avoiding any impact on senior lender covenants for the RSL, while offering Scottish Government the prospect of some return/eventual repayment, in contrast to the outcome if unvarnished grant finance was provided.

The capital structures of landlords do not readily lend themselves to the preference share concept; anything which veered more towards a debt structure is likely to be picked up by lenders in their covenants.

Unless there was a willingness on the part of Scottish Government to make available contingently repayable grants (i.e. the grant is only repayable when projects are operating successfully and revenues being generated to repay financing), this option could not be developed further. This option has not been considered in further detail.

10. Loan guarantee scheme (an example)



Description

The Scottish Government (or possibly the National Wealth Fund (NWF)), acting as guarantor, would guarantee loans made by private finance providers (the beneficiary) to social landlords to allow them to proceed with net zero retrofit measures. The guarantee could either support bilateral lending (e.g. an individual bank loan) or support an aggregator vehicle (e.g. via an SPV as outlined above) which would raise capital markets finance and on-lend to individual housing associations.

As noted, a guarantee scheme could be used to support bilateral bank lending as well but is much less likely to achieve the lengthening of maturity which can be obtained from the capital markets. There may also be procurement/application issues to consider as well with this approach (e.g. which lenders/borrowers benefit from the guarantee)

A Scottish Government guarantee could readily be applied to some of the models already outlined. For example, support to an aggregator could be provided by way of a guarantee to investors rather than a grant or FT contribution. However, it is noted guarantees carry financial implications for Scottish Government which require significant consideration such as; development time and complexity, parliamentary approval requirements, subsidy control constraints and guarantee costs, amongst others. Use of government guarantees would require deeper assessment if progressed further.

Overview of NWF guarantee scheme

The NWF provides guarantees to support eligible projects. Each guarantee is backed by Her Majesty's Treasury (HMT). The specific terms of each guarantee will depend on the relevant project and may vary from deal to deal, but the following provides a general overview.

NWF will issue an irrevocable and unconditional guarantee of up to 100% of scheduled principal and interest of the debt financing (or an element of the overall debt financing) upon request from the relevant bond issuer or borrower. In return, NWF receives an ongoing guarantee issuance fee. The NWF guarantee facilitates risk transfer analysis for debt providers, for the purpose of credit rating assessments or regulatory capital treatment. In the case of default by the bond issuer or borrower in the payment of the guaranteed amounts, claims can be made. NWF will pay claims on the NWF guarantee within a defined period. If NWF does not pay by the specified date, the bond issuer or borrower may claim directly from HMT, which will then settle the claim.

In October 2024, a new initiative to support social housing retrofit was announced whereby Barclays UK Corporate Bank and Lloyds Banking Group will each deliver £500 million of lending to the social housing market, supported financial guarantees of up to £750m provided by the National Wealth Fund. The guarantees will support both shorter duration loans to be provided by Lloyds Banking Group and mid-to-long duration loans to be provided by Barclays UK Corporate Bank.

The development of these guarantees with Barclays UK Corporate Bank and Lloyds Banking Group forms part of ongoing efforts by the NWF to improve financing to the social housing sector, as part of UK Government's warm homes plan. An agreement in principle has also been made between the NWF and The Housing Finance Corporation (THFC), a mutual funder to the sector, for a further £150m to help more registered providers gain access to longer term bond markets, which is expected to be announced in due course.

Overview of Affordable Homes Guarantee Scheme

Another relevant example of a loan guarantee scheme may be the £3 billion Affordable Homes Guarantee Scheme[39] (AHGS – expanded in 2020 by a further £3 billion) which utilises a UK Government guarantee to support the issuance of bonds to capital market investors by an aggregator vehicle. This vehicle then on-lends to English RSLs on social housing counterparty terms which reflect its (Government supported) cost of finance. The scale of the programme provides investors with some assurance around market liquidity of the bonds and the guarantee provides credit assurance. This allows the vehicle to borrow for longer maturities and at better rates than RSLs could manage individually, particularly the smaller ones. Its cost effectiveness is dependent upon any guarantee fee which may be charged being less than the difference between government supported borrowing and commercial borrowing.

From a UK Government perspective, the fact that the aggregator will only make loans on conventional terms (i.e. akin to those which any commercial lender would apply, apart from maturity and price) provides considerable reassurance as to the likelihood of the guarantee actually being invoked i.e. the contingent risk is low.

In taking on a loan, the borrowing under any existing agreements with other lenders will still constrain RSLs, so it is unlikely that the AHGS produces "more" lending as opposed to "better" lending. It is, however, possibly in the gift of the guarantor to specify the terms and conditions on which the aggregator on-lends. So if it were to agree that loans could be made on an unsecured basis and subordinated to the claims of existing lenders (who may or may not agree to this), this would prospectively increase the amount of credit available, it would, of course, alter the risk profile from the Government's perspective and significantly increase the risk of credit losses under the guarantee.

Pros

- Delivers longer term, lower cost finance to landlords, compared to other senior debt sources.
- No up- front or continuing government spend (although a contingent liability is required that may crystallise costs where a call on guarantee is made).
- Credit risk for the Scottish Government (and UK Government) can be managed through terms of loans.

39 ahgs_overview.pdf (ara-venn.com)

Cons

- Borrowers constrained by existing financial agreements (depending upon on-loan terms).
- Creates an additional cash outflow for the landlord, without there necessarily being a corresponding increase in income i.e. revenue/savings risk is retained by the landlord.

11. Enhanced SHNZHF

Description

This model suggests expanding and further developing the existing Scottish Government SHNZHF. As well as assuming additional capital commitments (if this were to become available and noted to be unlikely given the current budgetary environment) to support the sector, an extension of this model (with minimal additional resource cost) could additionally incorporate a centre of excellence/ project support unit, which would assist landlords with technology selection, retrofit strategy, business case analysis and share data on the outcome of other projects (analogous to the "technical" element of the Super-aggregator model).

The existing SHNZHF has a commitment up to spend £200 million over the duration of this Parliament. According to the latest application criteria, local authorities and RSLs are eligible to apply for capital expenditure funding for clean heat projects (up to 60% of capital funding) and fabric-first energy efficiency projects (up to 50% of capital funding) with grantees bringing forward their own necessary funding contributions. The maximum grant value from the Fund is £5 million and the maximum average grant per property is capped at £35,000. There is a provision for properties in rural areas to receive an uplift in grant cap.

However, it has been observed by some social landlord stakeholders that the application process can be burdensome, and there are concerns regarding the competitive nature of the fund, as well as the lengthy approval timescales. Additionally, the fund's inability to provide multi-year funding commitments is noted. There is also a lack of data from completed projects, which could be beneficial for landlords in shaping their ongoing technical and financial approaches to retrofitting.

Expanding the resources (in terms of personnel with specialist skills, knowledge and expertise in developing business cases and delivering retrofit projects) available to the fund may facilitate the financing of larger projects while still upholding the principles of matched funding. This will create additional demands on the existing SHNZHF team and so it is likely that additional resource will be required, especially where additional specialist skill sets are required.

It is likely that changes to the application process and eligibility will be required. To make the fund as efficient and effective as possible it will be important to clearly define eligibility criteria and to properly scope any changes to the application and

assessment processes. There could be merit in considering a move to non-competitive allocation. One issue – the "knowledge deficit" in some social landlords- could possibly be addressed, for instance, by the parallel establishment of a unit, either within Scottish Government or procured externally, which would assist social landlords with technical advice on appropriate strategies, resulting in the general dissemination of knowledge and better quality applications along the lines of RISE – The Retrofit Information, Support and Expertise website[40]. This could, of course, be developed alongside other structures as a stand-alone unit, which could also assist with the collation of performance data from completed projects and could form the initial seed of establishing other deliverable mechanisms such as the Super-aggregator.

Pros

- Effective means of blending private and public capital.
- Blended "cost" of funding to landlord reduced by grant element.
- Modification to an established and existing programme.
- Possibility exists to extend reach with establishment of support unit.
- Facilitate collection of enhanced data.
- Limiting costs to landlord – reduced advisory costs.

Cons

- Scope eventually limited by landlord's ability to match fund.
- Would need additional funds from Scottish Government.

40 Home | Social Housing Retrofit Accelerator

12. Rental premium for retrofit

Description

Social landlords simply increase rents to ensure that the additional cash generated repays the funding required to implement the measures or, more feasibly, introduce a premium on rents for retrofitted property to reflect the fact that tenants' combined energy and rent costs will have reduced as a result of the energy efficiency work.

Increasing rents is the most direct way for landlords to raise additional revenue. The justification would be that tenants will benefit from the work that is carried out, so it is therefore reasonable to expect them to pay for it. Effectively, this is passing the "savings risk" noted in the preceding model on to tenants (and see above regarding the importance of understanding first whether savings will be realised or not).

As an indication of the level of rent increase required to repay the cost, assume that the modifications cost £15k. The investment needs to be recouped over 5 years (representing a 'typical' loan period) – this would imply a rent increase of around £60 per week if only the benefitting tenant(s) were charged–clearly, the size of the increase would be much reduced if the cost was spread over all of the landlord's tenants. And even if the cost was £10k and the repayment horizon was 10 years, this would still equate to an increase of over £20 per week to just repay the capital (when average rents are circa £80), and this is before any interest costs are added in. Clearly, that could only be justified if the energy cost savings were equal to or exceeded the proposed rent increase. It is probable that the repayment horizon would have to be longer (possibly linked to the life of the asset, more probably linked to the maturity of any debt finance) and/or the costs significantly lower for this to be able to be phrased in an acceptable way to tenants. An element of grant financing would remain important in order to reduce the extent of any rent increase.

Given current concerns around the cost of living, a policy founded solely on rent increases is unlikely to be acceptable or even terribly practical, as tenants' ability to pay higher rents will be extremely limited in some cases. In the short term, there is already significant pressure on rents given that all landlords have absorbed the effect of two years' sub-inflationary rental increases and sharply higher operating costs. Many landlords acknowledge, however, the inequity that would arise from charging the same rent to a tenant in a non-energy efficient property as to a tenant in a property where work has been carried out.

Pros

- Ease of implementation.
- Wouldn't necessarily lead to increase in tenant's overall housing costs.

Cons

- Significant increase in rents unlikely to be acceptable to tenants, boards/local authorities and Scottish Government.
- Landlord's ability to fund the work will remain constrained by their existing borrowing levels and financial covenants.
- Perceived inequity between those tenants who have benefited from net zero improvements and those who have not.
- Limited availability of grant financing.

7. Stakeholder engagement

To assist the development and assessment of possible finance and funding mechanisms, a representative range of stakeholders from across the sector were engaged.

Informal discussions regarding the models outlined in this report were held with housing associations, local authorities, landlord representative bodies, and energy management companies. Various funders, advisers, and arrangers were also involved in these discussions. Stakeholders did not receive any advance briefing material, and no formal representations or written responses were requested. The aim was to gather a range of initial, off-the-record and summarised views on the models under consideration, while recognizing that broader engagement and more time for consideration would likely expand the range of views expressed. There is unquestionably potential for further, more in-depth engagement sessions. Views on individual models varied widely but there were four broad themes that could be identified.

Findings from the stakeholder engagement have helped inform and develop the recommendations presented in this report.

1) Development and implementation of models as a matter of urgency

There is a great deal of enthusiasm among landlords (and others) to work on developing financing models and to participate in implementation. The funding gap is well appreciated, and there is an awareness that the traditional sources of on-balance sheet borrowing and government grants will not, by themselves, be adequate. Prompt action is also of the essence, given the timeframes being set out for the achievement of the SHNZS. The active engagement of landlords in any further development and design work is important to avoid the impression that "solutions" are being imposed on the sector.

2) Simpler is better

The sector, including lenders to the sector, is naturally conservative, leading to a general aversion to complexity. There is a preference for familiar structures such as aggregators, the SHNZHF, charitable bonds, and combined grants. While the potential benefits of more complex models, such as energy with rent or a third-party taking energy savings risks, are widely recognised, the lack of operational models, concerns about associated risks, and conservative governance structures have led to careful consideration of such structures. However, in the long term, these models, which can effectively monetise energy savings and clean heat installation, may also be crucial for the affordable implementation of the national retrofit program.

3) Integrating data and other resources with an enhancing support offering

There was widespread support for gathering and providing more data on completed retrofit projects in order to share knowledge across the industry and help landlords in their specification of projects across various house archetypes. Having access to additional expertise to address procurement, supply chain, and technical issues was also considered beneficial, especially for smaller landlords who may not have the necessary resources and skills to develop a strategy and delivery plan for net zero retrofit. It was noted, this might be achieved through a Super-aggregator model or an enhanced support offering. It was also believed that enhanced centrally provided support could also facilitate collaboration with neighbouring landlords to more effectively and possibly contribute to the development of regional delivery models.

4) Set expectations

The stakeholders engaged understand retrofit as being very important, but only one of a number of energy and housing related challenges which landlords have to deal with. There are risks that many of these competing aspirations will not be achieved if the priorities of Scottish Government are not clearly communicated. The many challenges relating to housing have been set out earlier in this report; the most fundamental is what takes priority in capital spending plans – maintenance, retrofit and/or new build when budgets are constrained or there is a lack of finance capacity to address all capital plans.

8. Evaluation criteria

Evaluation criteria for potential models

This section identifies the core attributes that we believe delivery models should possess in order to make a significant contribution to the financing/ funding of retrofit measures to meet the SHNZS deployment targets.

In developing these attributes, we have considered the market context in which social housing in Scotland already operates (as set out more fully in the Policy Context and Challenges sections of this report).

The attributes are ultimately qualitative and subjective in nature, however, we applied a basic scoring matrix to provide an indicator of relative merits and allow easy comparison of outcomes. The scoring matrix used follows a simple 0-3 score or 'RAG rating' as follows:

Evaluation score	Description of score
0	Potentially negative impact in relation to this attribute; fails to meet attribute at all.
1	Is broadly neutral in relation to this attribute; neither benefit nor negative impact.
2	Performs well against this attribute.
3	Performs very well against this attribute.

An evaluation table was used to record the scores for each proposed model against each attribute. Note that for the purposes of the evaluation, the five attributes were all equally weighted. Were different weightings to be attached to individual attributes (to reflect a more nuanced prioritisation of attributes), the scores, and potentially the overall ranking of models, would be affected.

The most desirable attributes of the delivery models considered are detailed below. These have been developed, refined, and agreed with Scottish Government during the development of this paper.

1) Additionality: Potential for additional non-Scottish Government investment

Will the model attract additional investment while minimising Scottish Government risk?

Models should aim to attract investment in the net zero retrofit of social housing. This investment, which could be sourced from private markets or elsewhere in the public sector (e.g., PWLB, SNIB), should complement any Scottish Government funding or support and seek to maximise additionality, that is, the amount of capital raised relative to the Scottish Government commitment.

External financiers will seek a suitable return on any capital that is deployed. The level of return will depend on the perceived risks attached to the investment. Hence a clear and balanced risk profile should be established, and an indication of where risks would be allocated between the private and public sectors, as well as the basis on which this risk allocation is made. Investors are likely to focus on credit (payment) risk, which can be considerably influenced by the presence (or absence) of Scottish Government support. Ongoing and residual risks to the Scottish Government should therefore be made clear.

Developers and investors tend to favour models which are standardised, tried, and tested, and with a well-understood risk profile; at this stage these do not really exist for the specific purpose of financing retrofit measures.

2) Applicability: Applicability and ease of deployment

Can the model be replicated and rolled out quickly and easily across a large number of social housing properties/providers?

Retrofitting affects two distinct groups of landlords – local authorities and RSLs. Within these groups there are significant differences in, amongst other things, the size of organisation, financial capacity, the location (urban/rural) and the type of housing stock. Technical solutions for retrofitting will also vary by landlord and building.

Given this varied user base, it is unlikely that any one model could be adopted by every landlord. This evaluation criterion would therefore consider whether the proposed model can be easily replicated across different subsets of landlords and geographies, helping (inter alia) to drive efficiencies and promote standardisation. Some models may require a significant up-front investment of time and effort to establish but could then be repeated or expanded relatively easily, whereas others may require similar amounts of initial effort every time they are deployed. Some may be specific to the deployment of a particular type of technology, while others may not be capable of adoption because of financial constraints on landlords (e.g. covenants in existing loan agreements). Under this criterion, we considered whether the proposed model could be deployed easily and quickly, for

example, using existing corporate structures and within existing financial constraints. It will seek to identify whether new vehicles would be required and whether more complex steps (e.g., legislative changes) might be required or recommended.

The evaluation involves considering whether the proposed model would work across projects of different sizes and locations or whether it is more suited to projects of a particular or minimum size. For example, where there are significant set up costs or operational overheads involved, this might be more appropriate for larger projects. Project size is likely to be directly correlated to size of landlord, so a model which is adaptable to project scale is likely to be capable of adoption by more landlords.

3) Sufficiency

Can the model attract and accommodate a level of investment (across the private sector, Scottish Government and landlords themselves) which will make a significant contribution to the cost of retrofit both for individual landlords and the sector as a whole?

The consultation paper for the new SHNZS estimates that converting the remaining social housing stock to net zero (including clean heat and energy efficiency) may cost in the region of £6 billion. Irrespective of the precise value, the cost will be significant, and there should be an assessment of whether the model can make a significant contribution towards meeting this cost, as this will be helpful in prioritising the deployment of resources in developing particular models.

This criterion would, therefore, consider the quantum of funds that might be capable of being raised, along with scalability, or the extent to which an initial model could rapidly be scaled up to generate significant amounts of finance. The perspective of private sector lenders/investors will be an important consideration in this regard. The sufficiency assessment is likely to be linked to whether the model would appeal to a diverse universe of landlords (so some overlap with criterion 2 above).

4) Skills and capacity: Facilitates design, procurement and delivery of retrofit projects

Can the model help to provide or build retrofitting and financing skills for the social housing sector?

Like the rest of Scotland's buildings, social housing retrofit needs to proceed at scale and pace to meet the Scottish Government's legally binding emission targets. For landlords, the constraints on implementation may include a lack of technical knowledge and skilled personnel to drive and support decarbonisation of their housing stock—although the key challenge will be to ensure the availability of funding.

There are several other barriers, too. For example, multiple stakeholders (often with different objectives) may need to be coordinated, multiple house archetypes considered, or complicated procurement processes addressed. Preliminary engagement with landlords has highlighted the variability of readiness to address retrofit measures. Some landlords feel that they do not have the appropriate capacity or staff with the right skill sets to frame and deliver retrofit projects.

Within the private consultancy sector, there is also an increasing capacity constraint, whereby a limited number of consultants and advisors with the relevant skill sets are called upon to support a significant increase in projects. There are also concerns about wider retrofit supply chain capacity.

It is, therefore, useful to consider the extent to which proposed models could either help to address or mitigate these skills and capacity challenges. For example, whether the model would reduce pressure on landlords by outsourcing or centralising this workload or could look to deliver services in addition to financing, for example, by linking funding to the design of projects, to the delivery of retrofitting contracts, or to the utilisation of established procurement frameworks.

We also considered whether the model could help to develop retrofit projects and build confidence in the wider market, providing certainty to the supply chain and consumers. For example, could the model support or make more likely the giving of specific, significant, and long-term delivery commitments in relation to particular technologies?

To the extent that supply constraints permit, procurement of goods and services from the Scottish economy will have wider economic benefits, for example. Each model will need to be evaluated to determine whether it will help to provide a solution to, circumvent, or find efficiencies in overcoming known delivery obstacles.

5) Tenant impact: Tenants energy bills reduced

Will the model have a beneficial financial impact on tenants?

Landlords will generally seek to minimise the cost of retrofitting to tenants, being acutely conscious of the cost-of-living pressures. The principal elements within the overall cost of housing for tenants are rent and energy costs.

Tenants must live in properties where retrofit measures are planned, and while their consent may not be required, it is clearly preferable to have their support. This support, and hence the adoption of retrofit models, may be more likely to materialise if the proposals can be shown to benefit (or, at least, not disbenefit) them. Models should, therefore, be assessed for their financial impact on tenants.

Classification of investment/public balance sheet treatment/ subsidy control

It is often important that a corporate or project structure is classified as private sector under Office for National Statistics rules. This ensures that any private sector investment/borrowing within that structure does not score against Scottish Government capital budgets.

Classification is important because if an investment or borrowing scores against the capital budget, this reduces funds available to be spent on other spending priorities. Models that allow for projects to be kept off the Scottish Government's balance sheet may be preferred. There may also be a preference for revenue-funded solutions. Therefore, while not forming part of the evaluation criteria, a brief commentary on the potential classification outcome of each model from a Scottish Government perspective is included to the extent possible.

In addition, a model structure may seek to benefit from low or zero-cost Scottish Government support. In such circumstances, subsidy control will be an issue to consider, and brief commentary will be included, where relevant, to address this point.

9. Scoring and prioritisation of models

Scoring

To recap, the models were scored against five key attributes – additionality, applicability, sufficiency, skills development and financial impact on tenants. Scoring is on a 0-3 scale, with equal weighting applied to each attribute.

Evaluation score	Description of score
0	Potentially negative impact in relation to this attribute; fails to meet attribute at all.
1	Is broadly neutral in relation to this attribute; neither benefit nor negative impact.
2	Performs well against this attribute.
3	Performs very well against this attribute.

A summary of the criteria is provided as follows:

No.	Title	Focus	Summary of question
1	Additionality	Potential for additional non-Scottish Government investment	Will the model attract additional investment while minimising Scottish Government risk?
2	Applicability	Applicability and ease of deployment	Can the model be replicated and rolled out quickly and easily across a large number of social housing properties/providers?
3	Sufficiency	Sufficiency	Can the model attract and accommodate a level of investment which will make a significant contribution to the cost of retrofit both for individual landlords and the sector as a whole?
4	Skills and capacity	Facilitates design, procurement and delivery of retrofit projects	Can the model help to provide or build retrofitting and financing skills for the social housing sector?
5	Tenant impact	Tenant energy bills reduced	Will the model have a beneficial financial impact on tenants?

The scoring was undertaken by the project group, which consisted of SFT and Scottish Government. Individual's scores were moderated for each model, as well as across all models, to achieve consistency of scores. An element of subjectivity is implicit in the process, and there is an acknowledgement that good arguments can be made for an

increase or decrease in an individual score against an attribute. The moderated scores are contained in Table 1 below:

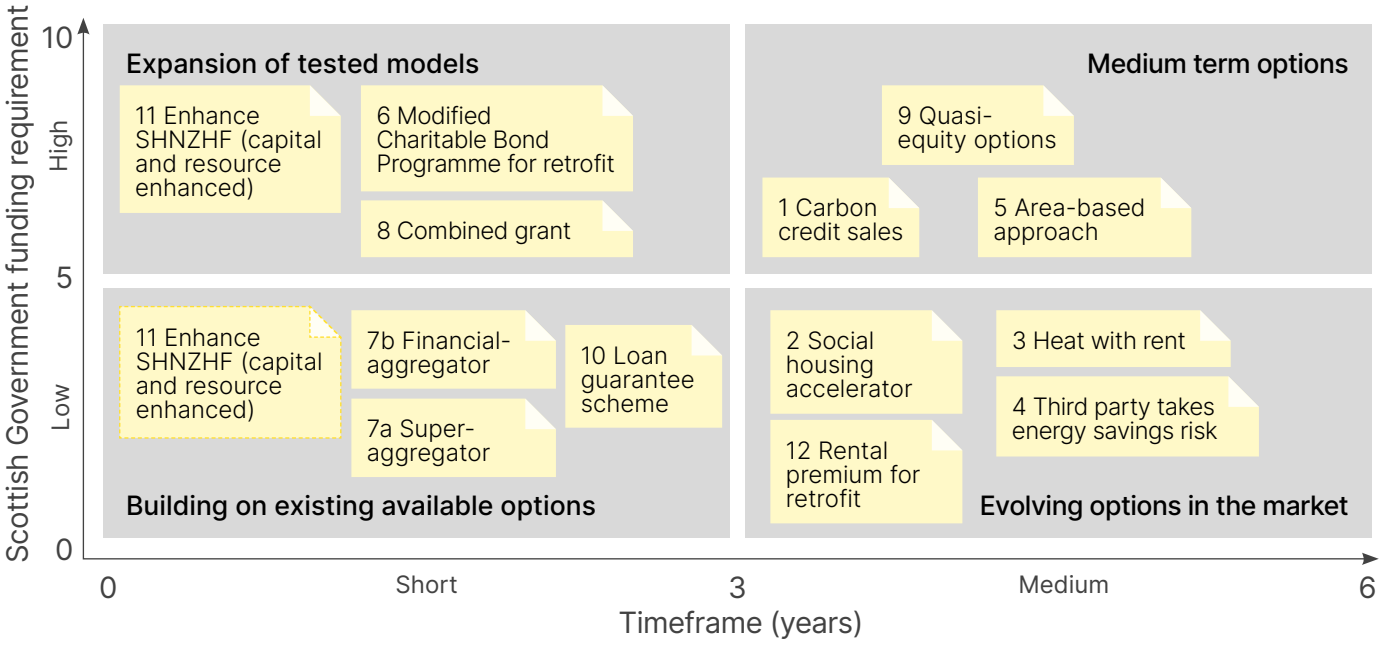
Table 1 Model scoring

Model evaluated				Evaluation criteria scoring				
Model	Financing model	Rank	Total score	1 Additionality	2 Applicability	3 Sufficiency	4 Skills & capacity	5 Tenant impact
7b	Super-aggregator	1	9.6	2.0	2.2	2.0	2.2	1.2
7a	Financial-aggregator	2	9.0	1.8	2.2	2.0	1.8	1.2
6	Modified Charitable Bond Programme for retrofit	3	8.4	1.6	2.8	1.6	1.2	1.2
4	Third party takes energy savings risk	4	8.2	2.2	1.4	1.2	1.0	2.4
10	Loan guarantee scheme	4	8.2	2.0	1.8	2.0	1.2	1.2
11	Enhanced Social Housing Net Zero Fund	4	8.2	1.4	2.2	1.4	1.8	1.4
2	Social housing accelerator	7	8.0	2.0	2.0	1.4	1.4	1.2
8	Combined grant	7	8.0	1.4	2.0	1.8	1.4	1.4
3	Heat with rent	9	7.4	2.0	1.2	1.6	1.2	1.4
1	Sale of carbon credits	10	6.8	1.8	1.8	1.0	1.0	1.2
5	Area-based approach	10	6.8	1.6	0.6	1.4	1.6	1.6
12	Rental premium for retrofit	12	4.8	1.8	1.4	0.6	1.0	-
9	Quasi-equity options	13	3.6	0.4	0.8	0.6	1.0	0.8

Prioritisation

Although all of the models described in this report have some form of track record in the market (even if not in a heat and energy efficiency context) they are not all equally viable for implementation at this time for a variety of reasons. Accordingly, we have layered a further assessment, which provides additional scrutiny on the need for government funding and the timeframes needed for implementation (reflecting factors such as complexity, market conditions and competition). This helps provide an approach for prioritising which models might be developed over the shorter term to support the sector, informed by the level of additional Scottish Government support needed and the timeframe for implementing the solution.

As was the case with the criteria scoring, a degree of subjectivity is acknowledged. For example, there may be some debate about the time needed to effectively implement a particular model. Nonetheless, the process of discussing and analysing these aspects has added to our consideration of what might be achieved in the current environment and overlays the more detailed scoring presented in the table above, and informing our recommendation. We present the outputs of this assessment on a quadrant chart below:



Using this model evaluation process we have identified a smaller number of priority models which we suggest are best suited for further development at this time. We have not, at this stage, attempted to develop a long-term plan for the development of the extended list of models. In addition, the constraints on Scottish Government capital and revenue funding and the possibility that this will not increase in the coming years has been a major consideration in the analysis and prioritisation of models. If Scottish Government were able to deploy significantly more funding in this area, then the relative prioritisation and viability of the identified models may change. This report, and the analysis contained within it, can provide a resource to return to should the operating environment for Scottish Government and social landlords change in future.

The following table provides a summary of the evaluation of each of the models and recommended next steps, where applicable:

Model no.	Title	Evaluation score	Viability assessment summary	Outcomes
7b	Super-aggregator	9.6	Lower funding requirement, shorter timelines	Prioritised for further exploration
7a	Financial-aggregator	9.0	Lower funding requirement, shorter timelines	Prioritised for further exploration
6	Modified Charitable Bond Programme for retrofit	8.4	Higher funding requirement, shorter timelines	Not prioritised due to Scottish Government funding requirement
4	Third party takes energy savings risk	8.2	Lower funding requirement, longer timelines	Not prioritised for government activity as it is area already being led by the private sector and due to the longer timelines for development and implementation.
10	Loan guarantee scheme	8.2	Lower funding requirement, shorter timelines	Prioritised for further development - noted that there is existing activity on this (led by NWF), Scottish Government may wish to engage on this and it may complement the development of models 7a and 7b and create opportunities to deploy the offering at a greater pace and scale.
11	Enhanced Social Housing Net Zero Fund	8.2	Higher funding requirement if capital enhancement included, shorter timelines	Not prioritised as an enhanced capital fund, due to Scottish Government funding requirement. However, the analysis and stakeholder engagement undertaken in the development of this report has indicated a strong case for the enhancement of centrally supported skills and expertise. This support could not only provide immediate support to the sector, but also provide a key component for developing the above highlighted model priorities (see overarching recommendations).

Model no.	Title	Evaluation score	Viability assessment summary	Outcomes
2	Social housing accelerator	8.0	Lower funding need, longer timelines	Not prioritised due to timelines for development and implementation, with complex (and currently un-quantified) benefit measurement requirements, as well as the potential need for varied policy change.
8	Combined grant	8.0	Higher funding requirement, shorter timelines	Not prioritised due to Scottish Government funding requirement
3	Heat with rent	7.4	Lower funding need, longer timelines	Not prioritised due to lower evaluation scoring
1	Sale of carbon credits	6.8	Higher funding requirement, longer timelines	Not prioritised due to lower evaluation scoring
5	Area-based approach	6.8	Higher funding requirement, longer timelines	There is much activity and potential opportunity in this space which Scottish Government and social landlords should, where appropriate, engage with and support. However, our engagement with several social landlords suggested that it would be difficult for many of them to lead (rather than be an active participant) in driving forward area-based approaches without reprioritising limited resources. Therefore within the context of the social housing focus of this report this received a lower evaluation score.
12	Rental premium for retrofit	4.8	Lower funding requirement, longer timelines	Not prioritised due to lower evaluation scoring
9	Quasi-equity options	3.6	Higher funding requirement, longer timelines	Not prioritised due to lower evaluation scoring

By following this approach, we have attempted to consider and reflect on the limited resources of the Scottish Government and the social housing sector, by analysing and selecting a set of models which can be actioned now. Those which appear most promising at this time have been put forward for prioritisation. It is recognised that all of the models can be viable in the right circumstances, and that the ranking and priority of the models may change over time as the landscape and economics for retrofit change.

10. Conclusions and recommendations

Priority models

Section 8 prioritised a limited number of models that could be developed in the near term, recognising that there are considerable constraints on current Scottish Government and landlord budgets, and the viability of developing one or more of the proposed options will be highly influenced in the short term by available revenue and capital budgets.

The first set of models we believe should be prioritised for further exploration are the Financial-aggregator and Super-aggregator. The Loan guarantee scheme should also be considered for further development, and we note that there is existing activity on this (led by NWF), and Scottish Government may wish to engage further with this. Work on the Loan guarantee may also complement the development of the two aggregator models, creating opportunities to deploy an offering at greater pace and scale. Whilst we did not recommend that the full Enhanced Social Housing Net Zero Heat Fund model be prioritised (primarily due to increased Scottish Government funding), feedback from stakeholders indicated a strong case for the enhancement of centrally supported skills and expertise. We recognise this support could not only provide immediate support to the sector, but also provide a key component for developing the above highlighted model priorities (please refer to associated recommendation below in relation to "Strengthen the current SHNZHF offering" for further details on how we believe this could be taken forward). Finally, we note that there may be potential for Scottish Government and social landlords to engage with projects which explore Area-based approaches. However, the stakeholder engagement undertaken as part of this report has suggested that in many instances it may be difficult for social landlords themselves to lead this type of project.

We acknowledge that further work will be needed to consider more detailed aspects associated with the recommended models by considering the following; value for money, viability testing, procurement rules, and subsidy control, amongst others.

Whilst other models for delivery have not been prioritised at this time, it should be underlined that this does not preclude further work on them. The outcomes of this report, and the exploration and analysis of other models within it, may be revisited periodically and their applicability reassessed as the landscape continues to change and develop.

Overarching recommendations

As well as the identifying a range of models that might support the sector and prioritising a small number for further development, this report has sought to identify a wider set of measures to be led by Scottish Government that will support and enhance future model development and implementation.

As such, although many of the above possible measures can be developed further, we believe there are three short-term effective and efficient activities that could be implemented now. These will provide immediate benefits and support to the sector, whilst also provide a foundation for the longer-term development of preferred financing and financing solutions. These actions, which we are proposing should be led by Scottish Government, working in collaboration with other sector stakeholders include:

- Strengthen multidisciplinary support offering - Enhance the current SHNZHF offering (it is noted that the SHNZHF is intended to run in its current form only up to the end of the current Parliament) with additional multidisciplinary support (that includes, but is not limited to technical, financial, quality assurance and commercial expertise) - the aim of which would be to provide immediate additional support to those that most need it within the sector. As the market matures, and as the requirements of regulation become clearer, support can be focused on targeting successful and replicable approaches to delivery. The analysis in this report suggests that this should include further exploration of low cost, blended financing under the Financial-aggregator and related Super-aggregator models.
- Improve clean heat and energy efficiency data collection - centrally gather and share data for installation and materials costs (across different house archetypes), as well as information on the performance and net savings realised for energy efficiency and clean heat deployment. Accessibility to this data for all social landlords will be key to helping inform, develop, evaluate and deliver net zero retrofit projects.
- Working with the sector to explore and implement new approaches to delivery – there is substantial enthusiasm in the sector for the development and implementation of solutions, but the sector needs clarity on its net zero requirements and how it should address these alongside other priorities.

The recommendations we believe could be taken forward and embedded within 12 months are expanded in more detail below.

Strengthen multidisciplinary support offering

A first practical step in the next year would be to consider complementing the current SHNZHF, specifically by developing a more fully established multidisciplinary support offering. The work done as part of this report has indicated that a central resource could increase the scale and pace of activity across the sector, not least by making available expertise and technical capacity across what is a diverse sector.

While more detailed work to be led by Scottish Government to consider the remit, scope and function of the support offering would be required over the short term, in the medium-term it could be incorporated into or used to complement the further exploration of some form of Financial-aggregator or Super-aggregator mechanism which offers blended cheaper forms of finance. It may also support the development of other models identified for prioritisation. Although not all elements of support will be required by, or indeed available to, all social landlords there will be great advantages to having a single, central point of engagement which is already recognised in the form of the SHNZHF. Some of the

functions of the proposed enhanced support offering could include, but not be limited to some of the following:

- **Procurement support** – Might, for example, include establishment of framework contracts to cover both installations as well as materials and equipment.
- **Scoping and procurement of advisory support** (or assistance with these activities e.g. scope examples and templates).
- **Pre-feasibility support** – Support initial assessments of the practicality of proposed net zero project plans, by analysing technical, economic, legal, operational and time feasibility factors.
- **Project development** – Support social landlords in structuring robust proposals to the SHNZHF in the short term (and for any potential future fund).
- **Technical** – Provide guidance and information on the nature and type of energy efficiency and net zero technology installations that might be needed according to house archetype and ensuring a 'no regrets' approach to reaching net zero.
- **Financial** – Support development of robust financial cases.
- **Legal/procurement** – Providing contractual and legal support for social landlords engaging with supply chain organisations and other parties.
- **Quality Assurance Standards** – Provide information and guidance on application of the SHNZS alongside frameworks and approaches such as PAS 2035.
- **Collaboration** – an enhanced central contact point may also facilitate wider collaboration across neighbouring landlords, and allow potentially more effective and efficient delivery of net zero retrofit projects across a region.
- **Monitoring, Review and Data collection** – Collation of data from social housing landlords regarding the installation costs (both materials and labour), the nature of measures installed and their efficacy. Identify whether the design performance has been achieved and record lessons learned to integrate into future projects, as well as future policy development.

The capacity across the sector to address these aspects currently varies but there is need to consider and coordinate a full spectrum of multidisciplinary support, particularly for those social landlords with the least resources to tackle these aspects themselves.

It is recommended that Scottish Government lead this exercise, working and engaging with social landlords, finance institutions and other key stakeholders across the sector. This will identify the roles and activities needed for the various functions of an enhanced support offering as outlined above, and subsequently establish, coordinate and embed these roles. This will require additional dedicated resource, to be identified by Scottish Government, either through internal resource, across its various supporting agencies and partners, or externally by recruiting for more specific skills.

Establishment of an overall scope for the coordinated support offering would be an initial step, with a view to further exploration of the prioritised financing and funding mechanisms

outlined in this report, namely, the Financial and Super-aggregator models, potential use of loan guarantees (or other government funding) to support these, as well as placed-based mechanisms, where social landlords might be an active participant. This will provide benefits across the sector for both local authorities and registered social landlords, and in particular help smaller social landlords with limited resource or expertise to transition their stock towards achieving net zero.

Importantly, the support offering could lead to creating a robust framework of governance, risk management, and quality assurance standards. This will make it easier to attract and support future institutional investors wishing to invest in this area. Ensuring energy efficiency and clean heat measures are fit for purpose, appropriately assessed, and installed by skilled suppliers to specific standards would be a significant benefit for organisations managing investment risk in this relatively new area.

Improve clean heat and energy efficiency data collection

Establishing an investment programme, particularly for fabric related improvements, requires good knowledge of the existing stock. Notwithstanding the valuable work which has been carried out on EESSH1 alongside data from the Scottish House Condition Survey[41], social landlords' awareness of their housing stock condition (and heat loss characteristics) is likely to vary considerably. Landlords need to have up-to-date knowledge of stock condition before they can initiate a soundly based investment programme and, where such information does not exist, gathering it may take some time. Where information does exist, it is held within individual organisations and so not usefully accessible by the sector more widely.

A useful exercise would be to analyse the data collected from the Home Energy Efficiency Programmes: Area Based Schemes (HEEPS:ABS)[42] and the SHNZHF itself on the performance and net savings that have been realised based on historic spend across different house archetypes – to make this data more widely available across all local authorities and RSLs. If this data is not available or sufficient for this purpose, then a useful exercise would be for local authorities (as recipients of the funding) to engage with households where they have installed measures to understand energy consumption levels before and after the works have been installed.

Again, if this proves challenging, an option could be to look at forthcoming years of support where a requirement could be placed on local authorities and RSLs to collect energy data pre and post installation. For instance, last year a total of 7,262 clean heat and energy efficient installations were undertaken in Scotland, 50% of which were with social landlords. So, there are many installations already occurring in Scotland, for which more detailed data could be gathered. This could be progressed more easily using modern data capture and metering technology. Centrally gathering, analysing and making

41 Scottish House Condition Survey. An annual national survey to look at the physical condition of Scotland's homes as well as the experiences of householders.

42 Designed and delivered by local authorities, in combination with utility companies and local delivery partners. Primarily an insulation programme delivering solid wall and hard-to-treat cavity wall insulation.

this data available publicly could assist all social landlords in developing future investment programmes. Evidencing the carbon and energy savings would be beneficial in identifying the scope for creating new revenue streams which leave tenants better off overall.[43]

Working with the sector to explore and implement new approaches to delivery

There is substantial enthusiasm among landlords, lenders, arrangers, and the broader supply chain to explore any new approaches for delivery. Given the scale and the urgency of the challenge, new financing models (as proposed here) may, therefore, have an important role to play. From engagement with the sector, there is appetite across several willing partners in the sector to help develop and take forward one or more of these recommendations (particularly as regulatory requirements become clearer), to test and ensure that they can be successfully implemented and subsequently scaled. It will be important to prioritise and build on this willingness to collaborate in the short term.

Given the sector's historically prudent approach (a cornerstone for the sector having strong credit worthiness) it is crucial to ensure that any further exploration of models or structures receive the necessary support from landlords to enhance the likelihood of success. It is recommended that possible working groups are established to further develop models and include representation from landlords.

We believe these recommendations can help establish a practical and cost-effective route and approach to supporting the financing and funding aspects needed by the sector to progress the decarbonisation of existing social housing.

43 Actions for landlords responding to the requirements of the SHNZS in terms of data could include the following:
- Determine what data is required and establish current data holdings
- Determine what further assessment of own housing stock is required to complete data sets
- Determine how they should be assessed
- Determine (range of) interventions required to improve those datapoints to compliance levels

Appendix A - Analysis of sources of loan capital to Registered Social Landlords 2022/23

Capital market investors*	2022/23 £m	2021/22 £m
Own Named Bond (Wheatley)	300	300
M&G	214	214
Canada Life	205	205
MetLife	175	175
Black Rock	150	150
Scottish Widows	120	120
Sun Life	120	95
Pension Insurance Corporation	90	40
BAE Pensions Fund	30	30
Total	**1,404**	**1,329**

*Analysed by lead lender per Loan Portfolio annual return 2022/23

Traditional bank lender*	2022/23 £m	2021/22 £m
Royal Bank of Scotland plc	2,555	2,453
Lloyds Group	688	614
Nationwide Building Society	484	578
European Investment Bank	289	289
Allia	277	210
Santander	154	169
Clydesdale Bank plc	146	157
The Housing Finance Corporation	161	156
GB Social Housing	123	123
HSBC	-	100
Barclays	136	86
Charities Aid Foundation Bank	69	64

Traditional bank lender*	2022/23 £m	2021/22 £m
Triodos	49	46
Unity Trust Bank	35	33
Handelsbanken	25	25
Blend Funding Plc	22	22
Local Authority	21	21
Affordable Housing Finance	17	17
Scottish Building Society	15	15
Energy Savings Trust	16	13
Scottish Government	13	13
Co-operative Bank PLC	5	11
Charity Bank Ltd	7	7
Leeds Building Society	2	2
Other	1	1
Total	**5,310**	**5,225**

*Analysed by lead lender per Loan Portfolio Annual Return 2022/23

Appendix B – Individual model analysis against criteria

The scores allocated to each model against criteria, along with an overarching supporting analysis, are set out below:

7b Super-aggregator

Rank	Score	Additionality	Applicability	Sufficiency	Skills & capacity	Tenant impact
1	9.6	2.0	2.2	2.0	2.2	1.2

The "Super-aggregator" adds an additional layer of service provision on top of finance, delivered by the typical aggregator model set out immediately below, enhancing the potential level of investment and the level of skills and knowledge transfer. The potential for incorporating assistance with technical analysis, procurement, supply chain and implementation is seen as being of particular value to smaller landlords, notwithstanding the added complexity. This is reflected in improved, strongly positive scores for Additionality and Skills and capacity with other scores remaining as for the Financial-aggregator below.

This model would facilitate access to skills and capital for smaller landlords in particular. The set-up costs are likely to be high, however, and beyond the resources of many smaller landlords, which would either imply a collaborative effort from several/many or some form of Scottish Government support.

Balance sheet and subsidy control treatment for the Super-aggregator (and Financial-aggregator) will probably depend upon the type of government support made available to the aggregator vehicle e.g. grant, FTs, guarantee etc.

7a Financial-aggregator

Rank	Score	Additionality	Applicability	Sufficiency	Skills & capacity	Tenant impact
2	9.0	1.8	2.2	2.0	1.8	1.2

This model was seen as making positive use of Scottish Government support (whether by way of grant/concessional loan/ guarantee) to leverage in private sector capital and scored well on this criteria. The fact that there are already several large aggregation vehicles (without government support) operating in the sector led to strongly positive scoring on deployment and sufficiency, particularly as the intention of this model would be to offer something additional to "standard" aggregator terms e.g. cheaper finance or more relaxed credit terms. And, at least in theory, an aggregator would be open to local authorities as well as housing associations both large and small. Skills and capacity was scored as a positive while the effect on tenants was gauged as neutral.

Balance sheet and subsidy control treatment for the Financial-aggregator (and the Super-aggregator) will probably depend upon the type of government support made available to the aggregator vehicle e.g. grant, FTs, guarantee etc.

6 Modified Charitable Bond Programme for retrofit

Rank	Score	Additionality	Applicability	Sufficiency	Skills & capacity	Tenant impact
3	8.4	1.6	2.8	1.6	1.2	1.2

As the infrastructure for this model already exists, and it has been widely used by housing associations for new build developments, this model scored highly on ease of deployment (while noting that it would not be available to local authorities). It is, however, solely funded from FTs so the additionality and sufficiency of any programme is effectively constrained by their availability (and it was noted that the availability of FTs is forecast to decline sharply). Credit risk also remains with the Scottish Government. Scoring assumed a broadly neutral impact on the other two criteria.

The balance sheet impact would reflect the existing treatment of FTs, and it is assumed that any subsidy control issues have already been addressed for the existing programme. Expanding this programme to cover decarbonisation of heat would assume that any benefit accruing to the tenants can be captured via rental income.

4 Third party takes energy savings risk

Rank	Score	Additionality	Applicability	Sufficiency	Skills & capacity	Tenant impact
4	8.2	2.2	1.4	1.2	1.0	2.4

This model assumes that a third party captures an element of the energy savings and then utilises this cashflow to raise non-recourse financing to pay for the retrofit work. It thereby delivers funding without any Scottish Government support, is said to be off-balance sheet from a landlord's perspective (although the landlord will have to contribute some capital to the project company) and offers the tenant underwritten savings. Consequently, this model scores well on additionality and tenant impact. It is, however, complex with significant set up costs and is likely to be best applied to large scale projects, limiting its applicability, which is further constrained by the need to supply/generate sufficiently good quality data on the housing stock to give the third party (and its financiers) confidence that savings can be made (and guaranteed). Hence its sufficiency scoring was broadly neutral, as was the case with building/transferring retrofitting skills – it is probable that the third party would seek to maintain/service the retrofit assets.

Because of its complexity and the associated set up resources, as well as the level of data provision required, this model would be best rolled out at scale, which is likely to limit its relevance to all but the larger landlords.

As currently proposed, there would be no balance sheet impact for the Scottish Government and no subsidy control issues would arise.

10 Loan guarantee scheme

Rank	Score	Additionality	Applicability	Sufficiency	Skills & capacity	Tenant impact
4	8.2	2.0	1.8	2.0	1.2	1.2

The use of a Scottish Government guarantee to raise money from private lenders would follow the model established by the AHGS and scored well on additionality, as it would require no capital to be contributed by the government and would most likely be treated as a contingent liability with the Scottish Government accounts and hence off balance sheet until a call on the guarantee was made. It is noted that the approach and balance sheet treatment would need to be considered carefully and confirmed with Scottish Government Classification Unit. Applicability and sufficiency also scored well – a government guarantee is easily understood by lenders/investors and has the potential to raise significant amounts. This mechanism could be used in conjunction with an aggregator (as per AHGS) and hence open to any social landlord.

11 Enhanced SHNZHF

Rank	Score	Additionality	Applicability	Sufficiency	Skills & capacity	Tenant impact
4	8.2	1.4	2.2	1.4	1.8	1.4

As well as assuming additional capital commitments, this model would also incorporate a centre of excellence/ project support unit, which would assist landlords with technology selection, retrofit strategy, business case analysis and share data on the outcome of other projects (analogous to the "technical" element of the Super-aggregator model). The model scored moderately positive on additionality as landlords have to source up to 50% of the investment from their own reserves or other providers and strongly positive on applicability as the process of application and award is established and well known across the sector, for RSLs and local authorities alike (although feedback was that process could be improved). It scored broadly neutral on sufficiency (as there are likely to be constraints on the size of the fund and the maximum award) and tenant impact, but the introduction of a net zero support unit prompted a positive score on the provision of retrofitting and financial skills throughout the sector.

The existing SHNZHF has been widely used by large and small landlords and should remain attractive to all, although its appeal will be limited (to some) and the extent of its contribution qualified by the maximum size of grant available.

It is assumed that the balance sheet treatment and any subsidy control measures would be as currently applied to the existing fund.

2 Social housing accelerator

Rank	Score	Additionality	Applicability	Sufficiency	Skills & capacity	Tenant impact
7	8.0	2.0	2.0	1.4	1.4	1.2

As with the carbon credit sale model, the Social Housing Accelerator model requires the landlord to raise/contribute the finance required for the investment. The promise of Scottish Government support to meet the costs of such finance (through payments made on achievement of outcomes) should facilitate the raising of capital, however so the model scored well on additionality, caveated by the necessity for a continuing stream of revenue payments from Scottish Government to support the model.

The model also scored well on applicability given the potential to apply, in particular, to local authorities, which have experience of similar mechanisms in other sectors (e.g. the Learning Estates Investment Programme). Although relatively simple in concept, the process of agreeing and measuring outcomes may limit its appeal to smaller RSLs. The process of discussing a range of outcomes may result in more engagement with retrofitting skills, resulting in a better than neutral score on this criteria, which was also the case with sufficiency as there is the potential to raise significant amounts (contingent, of course, upon the extent of Scottish Government revenue support).

This model is most likely to be of relevance to larger landlords, as the outputs are more likely to be quantifiable when assessed at scale. It may have more immediate appeal to the local authority sector, given their familiarity with other similar outcomes-based programmes.

The model is dependent upon Scottish Government revenue support but if structured appropriately there should be no balance sheet impact, as there is no direct link between the outcomes-based payments and the servicing of the underlying finance. It is not believed that any subsidy control issues would arise. It is assumed that balance sheet/ subsidy control treatment would follow similar, established programmes (e.g. Learning Estate Investment Programme, Tax Incremental Financing).

8 Combined grant

Rank	Score	Additionality	Applicability	Sufficiency	Skills & capacity	Tenant impact
7	8.0	1.4	2.0	1.8	1.4	1.4

This model, which would bring together two different grant streams, was not perceived as bringing a great deal of additionality, although to make it work landlords would also have to contribute a reasonable amount of the overall requirement. Landlord familiarity with grant funding would make it easy to implement and capable of widescale roll-out, ensuring a strongly positive score on this criterion. It would, however, not deal with the retrofit of existing stock, so the sufficiency scoring was not as strong and the other scores were broadly neutral, the tenant impact score reflecting the lack of direct impact.

This model could be applicable to all landlords.

The model assumes the reallocation/combination of different existing grant streams so there would be no further balance sheet or subsidy control implications for the Scottish Government.

3 Heat with rent

Rank	Score	Additionality	Applicability	Sufficiency	Skills & capacity	Tenant impact
9	7.4	2.0	1.2	1.6	1.2	1.4

By stepping into a "power-supplier" role the landlord could capture an element of the energy savings which would otherwise accrue to the tenant and thereby enhance its revenue, enabling it to raise more finance. The model therefore scored well on additionality, although the amounts involved would be constrained by individual landlord's balance sheets (as is the case with other models which involve landlord's raising capital). Applicability scored lower, as the complexity of arranging energy supplies might limit its appeal to smaller landlords and, more importantly, the additional risks for the landlord and their associated mitigation/management will not appeal to all (or many). Notwithstanding this, the model was scored as being able to make a useful contribution to overall funding but broadly neutral on skills and capacity. Tenant impact was more favourable than the previous models as this structure should result in underwritten savings for the tenant (as well as the revenue boost for the landlord).

The landlord will have to have the resources and skills to manage a heat with rent service and its associated risks, which may mean that any interest may be limited to larger organisations.

If structured appropriately there would be no balance sheet impact for the Scottish Government and no subsidy control issues would arise.

1 Sale of carbon credits

Rank	Score	Additionality	Applicability	Sufficiency	Skills & capacity	Tenant impact
10	6.8	1.8	1.8	1.0	1.0	1.2

This model scored reasonably well on additionality, as all the money raised would come from non-government sources and would be paid over a twenty year period. Revenue would only be generated once the work has been completed, however, so landlords would still have to raise finance for the initial investment and their ability to do so would be limited given the relatively small amounts which it would generate. It also scored relatively well on applicability and ease of deployment, as there are schemes already in place (Housing Association Community Trust's Retrofit Credits Scheme, for example) and it would have broad applicability to all landlords. It scored less well on sufficiency as, based on current market indications, the amounts which could be raised are small (a combination of low price and small-scale reductions) and will only make a marginal contribution to meeting the cost of the investment. Other factors impacting negatively on scoring were the uncertain

nature of the market for credits and the possible impact of selling a credit outside Scotland (in which case it may not count towards Scotland's totals – credits cannot be used twice. The model was thought to be broadly neutral as regards skills and capacity and impact on tenants (re the latter, it is assumed in all models that the physical act of retrofitting will provide some benefit to tenants; this criteria is intended to measure the particular financial impact of the model on tenants).

If structured appropriately there would be no balance sheet impact for the Scottish Government and no subsidy control issues would arise.

5 Area-based approach

Rank	Score	Additionality	Applicability	Sufficiency	Skills & capacity	Tenant impact
10	6.8	1.6	0.6	1.4	1.6	1.6

The model scored positively for additionality as the majority of the investment would be delivered from institutional investors, building on a limited amount of government support. However, as a community-based model, with (potentially) many different property holding interests involved, it does not focus solely on social housing and this factor, plus the inherent complexity of marshalling many different parties led to a low score on roll-out/applicability. It was noted that the model could be of greater applicability to local authorities given their wider responsibilities as well as being social landlords.

The financial impact on tenants was seen as positive, given the claimed savings which would result from the work and, as any scheme would look to deliver at scale, involving the wider community, it was scored as making a positive contribution to sufficiency (assuming, of course, that the model proves deliverable). The probable requirement for social landlords to be actively involved in integrating their retrofit work into the wider community initiatives led to positive scoring on building retrofitting and financing skills.

If structured appropriately there would be no balance sheet impact for the Scottish Government, other than to reflect any grant required. Subsidy control issues around the grant support may require further investigation.

12 Rental premium for retrofit

Rank	Score	Additionality	Applicability	Sufficiency	Skills & capacity	Tenant impact
12	4.8	1.8	1.4	0.6	1.0	0.0

The model scored well on additionality as there would be no Scottish Government support required in order to implement and the additional revenue raised would support landlords in raising finance from other sources. But while relatively easy to implement, a differential rent policy would require a change to long established policies for a number of providers, meaning that roll out may not be straightforward and leading to a neutral score. For similar reasons the sufficiency score was low, and the financial impact on tenants was scored at

zero (although it should be noted that while rents would increase under this model, total housing costs including energy would remain the same or even fall). Scoring on skills and capacity was neutral.

This model would be open to all landlords to pursue. There should be no balance sheet or subsidy control issues for the Government.

9 Quasi-equity options

Rank	Score	Additionality	Applicability	Sufficiency	Skills & capacity	Tenant impact
13	3.6	0.4	0.8	0.6	1.0	0.8

The model with the lowest score is based on additionality. This means it would be 100% funded by the government with no additional private sector support. It would not easily fit into the capital structures of RSLs and would not be applicable to local authorities. As a result, it would generate low scores on deployment and sufficiency. The scores for skills transfer and tenant impact were more or less neutral.

Appendix C – Applicability matrix

The table below sets out the applicability of the models based upon geography, type of landlord, and scale of organisation (with "Y" meaning the model is particularly likely to be applicable in certain circumstances):

Table 2 Applicability of models across different types of social landlord

No.	Financial models	Urban	Rural	National	RSL	LAs	Large	Small
7b	Super-aggregator	Y	Y	Y	Y	Y	Y	Y
7a	Financial-aggregator	Y	Y	Y	Y	Y	Y	Y
6	Modified Charitable Bond Programme for retrofit	Y	Y	Y	Y		Y	Y
4	Third party takes energy risk	Y		Y	Y	Y	Y	
10	Loan guarantee scheme	Y	Y	Y	Y		Y	
11	Enhanced Social Housing Net Zero Fund	Y	Y	Y	Y	Y	Y	Y
2	Social housing accelerator	Y	Y	Y	Y	Y	Y	Y
8	Combined grant	Y	Y	Y	Y	Y	Y	Y
3	Heat with rent	Y		Y	Y	Y	Y	
1	Sale of carbon credits	Y	Y	Y	Y	Y	Y	
5	Area-based approach	Y		Y		Y	Y	
12	Rental premium for retrofit	Y	Y	Y	Y	Y	Y	Y
9	Quasi-equity options	Y		Y			Y	

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