# RITTERWALD

# Retrofitting Social Housing Stock in Scotland – Keep thinking smart and start acting wisely





This discussion paper has been drafted by RITTERWALD for the COP26 November 11 roundtable discussion hosted by Bank of Scotland and Link Affordable Housing Group.

#### **Table of Contents**

1 Executive Summary — 1	2 Net Zero Scottish Social Housing: Facing Challenge and Creating
4 Heating homes: on the top of the decarbonization	5 Roles and Responsibilities: everyone can start making
agenda — 9	a difference — 10

#### 3

European benchmark: Regulatory Target and Energy Performance — 7

#### 6

Housing value chain: upgrade to keep the good work going — 12

# 1 Executive Summary

In a very short period, sustainability has become part of our daily vocabulary. It is driven by the desire in society to make a visible contribution to a better world: benefitting the planet (mitigating the irrefutable evidence of climate change), and the people (reducing social inequality). Dedicated professionals in the real estate industry want to demonstrate, and be held accountable for, their ESG credentials. Sustainability has also entered the social housing sector by showing positive impact on its tenants (the S), by meeting serious retrofitting challenges (the E) and by acting compliant in a regulatory environment (the G). In short, sustainability is about delivering value for tenants, first and foremost.

The social credentials of Registered Social Landlords (RSL) are without question and good governance is a sector attribute. However, the route to net zero carbon is a bumpy ride: ageing housing stock with different archetypes, ambitious public goals and timelines, externalities, different facts and metrics and various opinions.

By net zero carbon we mean achieving a balance between the amount of greenhouse gas emissions produced and the amount removed from the atmosphere. Net zero target recognises that there will be some emissions but that these will be fully offset. Although we acknowledge the complexity, this should never become an excuse to delay further action at the time that all eyes of the world are on COP26 in Scotland.

In this discussion paper we touch on selected themes including turning challenges into opportunities, how we can and should make a difference, and the multiple levers available to address carbon reduction in the built environment. In addition, we include a brief European perspective. All the themes join to make our call for action. And the response is supported with 5 guiding principles:

### Look at two sides of the coin

Yes, decarbonisation or (deep) retrofitting of homes is complex and urgent. No, there are no quick fixes (the power grid is an external dependency for electric heat), but there are low hanging fruit (helping to inform tenants how to best save energy while at

the same time mitigating fuel poverty) and we cannot wait for governments to balance the equations and conclude how costs will be shared (grants will only be part of the solution).

Yes, decarbonisation is expensive. No, there is no lack of overall funding, but retrofitting may need re-allocation of debt capacity among fire and building safety, new housing delivery and urban regeneration. Moreover, sustainable partnerships with patient capital investors funding new housing construction could be extended to existing stock. Yes, private landlords as well as homeowners should also contribute their share in retrofitting of their homes. No, Registered Social Landlords do not have to bare sole responsibility to address net zero.

#### Create opportunities

The social housing sector has a track record of addressing challenges that effect society. It often starts with engagement with government to partner in tackling the issue. However, government will not provide all the answers let alone all funding, although it is likely to drive the agenda.

Although decarbonisation affects the entire social housing sector, there will not be a one sector solution, but multiple solutions apply simultaneously. Customized solutions depend on the house archetype and the financial position of the RSL among others. And yes, economies of scale will help. Identifying and applying these solutions require leadership from frontrunners. First moving RSLs can turn successful solutions into business opportunities. Frontrunners are those RSLs bridging to ESG capital and implementing ESG reporting based on data to demonstrate its credentials. And yes, success and failure will alternate as part of ultimate successful innovations in strategic planning (area-based approach to apply economies of scale by engaging private landlords and homeowners).

One of the effective ways to show leadership is to make the individual corporate decarbonisation agenda part of active asset management.

#### Think with the head, act from the heart

The urgency for mitigating climate change comes with many and strong emotions in society. Understandably, because society at large may have waited too long and there is growing awareness of the implications of climate change and there is the desire to leave a better world for future generations. However, there is a danger that actions are much driven by emotions and less by evidence-based facts. Time may be of the essence, but the next decades will also bring us more advanced and affordable solutions. Also, in social and affordable housing we should stay aware, that homes are inert on location and capital intensive to build, maintain and operate.

#### Follow the money

Because equity capital does not have access to Registered Social Landlords in Scotland, debt capital is the main source of funding. And debt capital markets across Europe are showing a fast-growing interest in sustainable related debt instruments such as green, social, and sustainable bonds and sustainability-linked loans. Current ESG lenders and investors and new entrants, all working with growing ESG mandates, are increasingly getting social and affordable housing on their radar.

To support lenders and investors in their allocation of capital to social housing, an ESG accreditation for housing providers can be helpful. Working with social landlords across Europe RITTERWALD has developed the Certified Sustainable Housing Label to bridge to ESG oriented capital markets. This Label works as a beacon for lenders and investors that are not familiar yet with social housing. Label holders can highlight their sustainability focus and will gain easier access to impact investment, alongside alternative financing products. Meanwhile, investors gain validated access to a new asset class.

In combination with a Sustainable Finance Framework and ESG Reporting (aligned with the Sustainability Reporting Standard-SRS), Registered Social Landlords in Scotland can become more visible for international ESG investors. Link Group is an adopter and Lloyds Banking Group and Scottish Widows are endorsers of the SRS as is RITTERWALD.

Figure 1: Guiding Principles, ESG Accreditation and Reporting Standards



### Build economies of scale

RSLs can make a difference in successful retrofitting their housing stock. A retrofitting solution can be designed per house archetype. Pilot projects and partnerships can lead the way to economies of scale. Economies of scale can often result in cost reduction and therefore contribute to affordability for tenants and landlords. And let's not forget, there are no failed pilots: there are always lessons to be learned from the many pilots across the European housing sector.

# 2 Net Zero Scottish Social Housing: Facing Challenge and Creating Opportunity

The Path to Net Zero can create various opportunities in the Scottish housing sector including the reduction of fuel poverty and the creation of new jobs.

Achieving net zero in heating Scotland's housing sector is estimated to cost £33bn by 2045 (Barker, 2021). While this is a tremendous challenge, the path to net zero also holds opportunities that can positively impact Scotland's economy. Next to decarbonisation, which is key to sustaining a suitable living environment, these opportunities include the reduction of fuel poverty, better health and wellbeing, and job creation. Thus, to reap these benefits, one needs to move from academic discussions about facing challenges into a pro-active response that create opportunities.

The Scottish House Condition Survey 2019 provides us with a good understanding of the challenge and the base position. The average modelled carbon emissions for all homes in Scotland is 73kg/m<sup>2</sup> (down from 80kg/m<sup>2</sup> in 2014). In the social rented sector

56% has EPC rating of C or above (against 40% for private rented sector). Mains (natural) gas is primary heating fuel of rental homes (80%). There is a difference in urban (90%) and rural (40%) locations. Fuel poverty is a serious problem among renters: of the 613,000 households living in fuel poverty, approx. 35% lives in social rented housing and about the same percentage in private rental housing.

**Facilitating a just transition**<sup>1</sup>**:** Beyond economic and environmental aspects, the transition to carbon neutrality needs to follow social norms and protect vulnerable citizen:

- Decarbonisation should not result in a double burden of higher rents and higher energy bills for tenants
- · Inclusion of tenants in the energy transition, rather than imposing change
- Use economy of scales through RSLs for reducing fuel poverty.

Yes, regulations for RSLs are set centrally, but the path forward includes close collaboration with private landlords and homeowners, working closely with regulatory and government colleagues. Creating strong partnerships in the supply chain can create new jobs and economies of scale for proven technology. It will also support the emerging strategic approach to retrofit, fabric first: optimizing the energy performance of the building envelope.

Yes, decarbonisation goals for RSLs are mainly challenged by government However, this also provides opportunities to RSLs:

	Theme	CHALLENGES	OPPORTUNITIES
	Sustainability	<ul> <li>Reduce CO<sub>2</sub>-emission levels</li> <li>Demand to measure CO<sub>2</sub>-footprint and take effective measures</li> </ul>	<ul><li>Suitable living environment</li><li>Higher standard of living for tenants</li></ul>
℃ c	O <sub>2</sub> -Measures	<ul> <li>Determine uniform way to calculate CO<sub>2</sub>-emissions</li> <li>Further savings possible in buildings energy use</li> </ul>	<ul> <li>Energy savings resulting in cost savings</li> <li>Fabric first approach</li> </ul>
[§=]	Regulations	<ul> <li>Regulations are struggling to keep pace with change (e.g. ESSHA versus net zero)</li> <li>Net-Zero is legislator's aim</li> </ul>	<ul> <li>Collaborations with individual home- owners and private rental sector</li> <li>New job creation</li> </ul>
So So	ocial housing	<ul> <li>Government targets social housing sector</li> <li>Tenants and government are sensitive to rent and cost increases</li> </ul>	<ul> <li>Reallocation of capital</li> <li>Tenancy sustainment</li> <li>Reduction of fuel poverty</li> </ul>

Figure 2: Challenges turn into Opportunities on the route to Net-Zero

### Basics of carbon emissions we all must understand

Carbon counting is the quantification of the carbon emissions of a product in one unit (e.g., kg  $CO_2$ ) over its entire life cycle. Carbon emissions over the life cycle of a building are a combination of embodied and operational carbon (Climate Change Commission).



Lifecycle CO<sub>2</sub>-Emissions

Embodied carbon emissions (Figure 3) account for about 30% of life-cycle emissions and include the construction of the building, building maintenance including refurbishment and replacement measures, and demolition at the end of the building's life.

Operational carbon emissions account (Figure 3 'In use') for about 70% of life-cycle emissions – essentially comprising energy consumption during the building's use. For this purpose, two aspects of carbon life cycle are most relevant: construction and maintenance.

A property is described as net zero if the net carbon emissions are zero or lower. Net emissions include the total carbon emissions from on-site heat/energy consumption less the offset in emissions that could be saved by, for example, on-site electricity generation. Consequently, in an existing property where fossil fuels, typically natural gas, are burnt, net zero can still be achieved if there is sufficient on-site generation to offset these emissions. In the long term, a net zero carbon target can only be achieved if carbon-free grid electricity is available, and no natural gas or other fossil fuels are used to power the properties.

# Awareness among housing professionals has been created – Now it is time to scale the efforts

Whereas awareness about decarbonisation has been created through various reports and policy frameworks, a snapshot of which is shown below, the industry now needs to move from theory to practice. Scaling is one of the guiding principles.

The Scottish housing market has features that differentiate from the UK including exposure to extreme weather conditions and isolated housing stock in rural remote and island communities (Scottish Government, 2021c). The use of pilot projects can help to develop a retrofitting agenda, that includes clear terms of reference and provides an evidence base rather than focusing on policies and theoretical findings.

Figure 3: Embodied Carbon over Lifescycle of Homes

Figure 4: Selection of main publications from Scotland











## Recently the UK government issued a Heat and Buildings Strategy as well the Treasury's Net Zero Review, which analyses the economic implications.



The Heat and Buildings Strategy proposes to phase out the installation of new and replacement of natural gas boilers by 2035. The UK Government is focusing on low and no regret options promoting fabric first, because apart from heat pumps other net zero heating technologies are not yet available in a cost-effective manner and at scale. The UK Government will continue to provide targeted support and funding to ensure that the transition to energy efficient low-carbon heating is accessible and affordable to all. The strategy also intends to take primary powers to regulate the heat network market to protect consumers and provide assurance of high-quality standards. Moreover, the strategy stresses the importance of green finance market to finance the net zero transition.

The HM Treasury Net Zero Review includes an assessment of the factors affecting the degree of exposure to housing transitions. It reaffirms the ambition to improve as many homes as possible to EPC C by 2035. Households' exposure to decarbonisation will depend on several property-related factors. It also assesses the imbalance of gas and electricity pricing and different ways to dealing with fair heat pricing in the future. The proposed green taxonomy will support and encourage investment in net zero activities.

Additionally, the Net Zero Strategy: Build Back Greener Report proposes a £450 million three-year boiler upgrade scheme. This scheme is set out to bring down the costs for low-carbon heating to match the costs for gas boilers now. This is paired with the ambition to eradicate the selling of gas boilers by 2035. Trials and pilot projects both for heat pumps and hydrogen villages are planned to determine their importance in the net zero transition.

Figure 5: Selection of main publications in the UK

# 3 European benchmark: Regulatory Target and Energy Performance

# Scotland claims a frontrunner position in Europe in the decarbonisation of housing

The Paris Agreement states the target limiting global warming to well below 2°C. This is irrefutable and achieving the net zero target is therefore essential. With heat from buildings accounting for around 20% of Scotland's carbon emissions, social and private landlords need to start acting urgently. As represented in the graph below several European countries aligned their targets with the 2050 agenda. The Scottish Government has committed to reaching net-carbon-zero by 2045.



# While all European countries support the objectives of the Paris Agreement the pathways they choose are different, as comparison between Germany and UK shows.

The transitions to reach net zero in the housing sector touches upon various key topics such as the energy mix, financing (business model), housing structure, energy infrastructure, the rental market and allocation of costs. The graph below shows how these topics are approached by the UK and Germany respectively:

- Physical conditions: Energy mix, housing structure and energy infrastructure solutions depend on physical features in the housing stock.
- Regulations: Financing, rental market and costs solutions depend on regulatory priorities and market conditions.

 $\bigcirc$ 

尙

#### **Energy Mix**

UK Very high reliance on individual gas boilers GER District heating and communal heating very common

#### Housing structure

UK Older housing stock with single dwelling housing types predominant over flats GER Flats dominant archetype over houses

#### Rental market

UK Dual rental market, different rules and regulations for market and social housing GER Unitary rental market with focus on rents





#### Financing

UK Greater use of private finance. Business model geared to development GER Business model gears to rent control & stock investment

m

Energy infrastructure	Ðq
UK Centralised distribution with well developed gas infrastructure GER Greater focus nonlocal heating networks	
Costs	°°°
UK All costs borne by association – Landlord Tenant conundrum GER Costs divided between associat government and tenants	ion,

Figure 7: Specific Comparison between the UK and Germany

# UK shares similarities with the housing market across Europe

As shown below, the UK is highly urbanised when compared with other European countries. Nevertheless, in Scotland (as well as in more remote parts of England and Wales), it is important to also pay attention to the rural housing stock as this category includes the homes of island communities.

In European countries such as Germany, Netherlands, Ireland and France, social housing sector is expected to act as catalyst for wider decarbonisation across all housing stock and as a test bed for innovative technology as highlighted by Savills in its Decarbonising the (English) Housing Association Sector (2021). However, this catalysator has always been supported by significant government investment, either through direct grants or through state backed loans.



Figure 8: Division of housing stock (Zero Carbon Buildings, 2020)

## 4 Heating homes: on the top of the decarbonisation agenda

### Warmer Homes – Heat in Buildings Strategy

The Scottish government follows a hierarchical approach to reduce emissions related to heating, including two drivers - heat demand and heat generation. Heat demand focusses on reducing the need for heat as much as possible (Energy Efficient Scotland). This can be done by improving energy efficiency which is a core component of the fabric first approach. When focussing on energy efficiency the UK housing stock is currently lagging the European average, apart from Belgium as illustrated in the map below. Energy efficiency is closely linked to the insulation of housing. The more the temperature within a building can be retained over an extended period, the less energy is needed for heating (or cooling). The map highlights that Germany, Denmark and Sweden show a lower drop in energy then Italy, France, Spain, and the Netherlands.



# Share of Real Estate sector in total national CO<sub>2</sub> Emissions



Figure 9: Energy Efficiency Comparison between Western European Housing Stocks

### UK uses Gas as their main heating component

The highest residential energy consumption in the UK is gas, similarly to countries like France and Germany. Yet, oil also covers a high share of residential energy consumption. A report from the Scottish Government (2019) stated 52% of those using electric heating systems and 40% of those using oil were in fuel poverty, compared to 19% of households connected to the gas network.

Switching from gas will be costly and new technological solution might not cover all the cost. With gas prices being about 3-4 times cheaper than electricity per kWh (in normal market circumstances), key technologies such as heat pumps may provide consumers with more attractive options. Addressing the imbalance between gas and electricity prices is likely to be important in helping key technologies such as heat pumps become a more attractive consumer proposition. Pricing will be impacted by the wholesale price of energy, government subsidies and the structure of carbon taxes.

Heat as a service could be one solution to facilitate the switch. Heat as a service delivers a bundled experience including, servicing, maintenance, and energy for a fixed

monthly price to landlords and consumers. As the cost of heat pumps are carried by the service provider, heat as a service can help to make the switch from gas affordable for a broader range of customers. Changes to energy regulation could support this option.

# EPC ratings are often used to assess the housing stock within a country

They aim to classify the performance of a property to allow not only an assessment of the impact of improvements but also improve comparison between properties.

However, one has to be aware that the EPC methodology is not current with new technologies and the decarbonisation

of the energy sector. New technologies should be assessed regularly for EPC. This is also necessary for for RSLs to make well-informed investments decisions that both meet tenant's energy needs and contribute to national reduction of carbon emission.

The Scottish government has the target, that all homes must meet EPC C or better by 2033 (Scottish Housing News, 2021). This target aligns with the UK target for all homes to be at least EPC C by 2035, where practicable, affordable and cost effective. Estimates suggest that this will require up to £65 billion of investments (UK Government, 2021).

# 5 Roles and Responsibilities: everyone can start making a difference

Registered Social Landlords feel very responsible to make the maximum effort in their contribution to decarbonising their ageing housing stock, and this is commendable. However, RSLs are not the only ones responsible. Private landlords and homeowners should also take their responsibility. It is even more commendable that RSLs keep showing leadership and are enablers to tackling carbon reduction in a holistic approach and communicate their effort accordingly.

**RSL-initiating**  $\cdot$  RSLs can debate with their regulator, lenders, and other stakeholders where they stand and where they aim to be after they have done their homework (among others):

- Assess and understand the as-is energy performance of their housing stock.
- Identify, prioritise, and budget decarbonisation measures as part of a coherent corporate sustainability strategy.
- Build organisational and financial capacity to implement the measures over multiple years.
- Carry out a risk assessment of the strategy and plan for each risk or basket of risks e.g. cost overruns.

**RSL-reporting**  $\cdot$  To the regulator and public funders, RSLs are transparent in reporting their progress in decarbonisation implementation plan including:

- · Communicate regularly on progress of corporate sustainability strategy.
- Establish appropriate reporting metrics. For reporting and enabling management action. Demonstrate compliance with legal obligations and regulatory requirements.

**RSL-Tenants** • Retrofitting will be intrusive, and tenants need to be informed so they can understand the drivers and objectives. Engagement will include:



Figure 10: Residential Energy Consumption – Main energy carrier used for space heating (2018)

- · Consultation on proposed strategy, implementation plans and implications
- How their home will perform in energy use post retrofit and how to maximise the benefits of the investment.

**RSL-Stakeholder management including local Government** • RSLs demonstrate to stakeholder's progress addressing sustainability:

- Showcase RSL's commitment to contributing to decarbonisation by pilot projects among others
- Manage mutual expectations with government.

Lenders of private capital including the debt capital markets: if there is no direct access for equity investors in RSLs, private debt funding will be a key component. This is also relevant when Scottish government issues green or social bond to fund its growing commitment to decarbonisation. Banks already issue big-ticket social housing bonds to lend on to RSLs.

**Scottish government** steers and accommodates with policy (Housing to 2040) and regulations (eg. Heat in Building Strategy). And Scottish government facilitates with support schemes: this can be grants (such as Social Housing Net Zero Fund), learning (eg participating in ZEST Report and supporting pilots) and advice (eg tenant support in smart metering through professional bodies) as well as working with housing and construction professional bodies (CIH, RICS, SAL).

Moreover, an even more crucial success factor is that government also encourages progress in external dependencies for RSLs such as the decarbonisation of the power grid. Ultimately a new heating infrastructure will be key in accomplishing the decarbonisation goals.

On the local level plans will have to become more comprehensive and concrete through Local Heat and Energy Efficiency Strategies (LHEES). Also, one can build on strategic urban growth visions such as in Edinburgh (City Plan 2030), Glasgow (Sustainable Glasgow) and Aberdeen (Sustainable Energy Action Plan).

Decarbonisation will help to address fuel poverty if tenants can benefit with a reduced energy bill. However, this comes with a price for the RSLs. What is going to help is a smart and concise funding strategy in which active support from tenants (behaviour e.g., with energy saving) should benefit the tenant.

Lloyds Bank is showing its commitment to the social housing sector by providing £9bn of funding since 2018. The funding is oriented at creating more high-quality homes to help supply housing among low-income levels. The commitment is linked to a strong ESG ambition.

Following their publication of the Business Sustainability Plan and the appointment of their head of sustainability, Edinburgh-based Link Group has advanced their approach in the field of sustainability. Link Group is the first Registered Social Landlord in the UK to engage with insurance company Scottish Widows, part of Lloyds Banking Group, agreeing a £80m sustainability-linked loan.

### Conclusion:

Everyone must work alongside government; nobody must wait. Active stakeholder engagement can avoid that someone is left behind.

- 1. RSLs **initiate**: show leadership by first moving on pilots, pooling resources and seek for economies of scale
- Lenders accommodate: provide sustainability-related debt products such as Sustainability-linked loans among others
- 3. Government steers and **facilitates**: steering with policy frameworks and regulations and facilitate with support schemes (funds, learning and advice)
- Tenants benefit: energy savings prior to retrofitting accompanied by creating awareness and learning

# 6 Housing value chain: upgrade to keep the good work going

Sector decarbonisation scenarios must be translated in individual business scenario planning of RSLs with a variety of levers of carbon emission reduction. It also demonstrates that the RSLs will have to do some of the heavy lifting in retrofitting the housing stock.

A concrete way for RSLs to start making a difference is to include its individual pathway to net zero carbon in its business planning. Although we acknowledge the different sizes of RSLs, every RSL (with pooling of resources where necessary) should be able to determine the scope of its decarbonisation measures in terms of EPC rating, costs related to house archetypes and budget planning.

As marginal costs of carbon emissions reductions increase, RSLs need to identify the deliverable target level that must be rooted in pragmatism. In the figure below we have identified 3 step-by-step scenarios until 2045 that also show operational and financial implications.

Figure 11: Scenarios until 2045



Marginal cost per ton of CO<sub>2</sub> reduction

#### 1

#### Call-For-Action Scenario

- Collate & analyse data including pilots
- Anticipate regulatory requirements and reflect in strategy & business planning. Engaging with residents & stakeholders
- Review asset management & development strategy

#### **Best-Efforts Scenario**

2

- Business model evolves to enable financing of CO<sub>2</sub>-reduction measures
- Financial resources freed through company efforts, e.g. cost savings in operations, external / debt / lease funding
- Personnel resources allocated
   accordingly

#### Maximum-Efforts Scenario

- All levers are activated to reach a maximum reduction in CO<sub>2</sub> levels – carbon neutrality
- Mobilise means beyond housing company (e.g. rising CO<sub>2</sub> emissions prices) and government subsidies

The **call-for-action scenario (#1)** can be used as a baseline: reach carbon emission savings withing the limits of a RSL current business plan and regulatory environment. Applying this scenario could already save significant carbon emissions. Examples of measures: fabric first stock retrofit improving of EPC bands and energy savings by engaging tenants. There is a focus on minimising no regret investment while public policy, markets and technology evolve.

Bringing the RSL to the next level of carbon emission reduction is possible by the **best-efforts scenario (#2)** by adjustment of the current business plan: analyse how and which resources can be freed to support net zero and match resources with those measures delivering the greatest carbon savings.

Accomplishing the long-term goals of carbon emission reductions can only be reached in the **maximum-efforts scenario (#3)**. For this all levers must be activated, and the financial and organisational capacity must be in place as most external dependencies must be addresses (radical changes in the mix of heating technologies combined with improved insulation).

To support the scenarios with concrete measures, one can also identify different levers for carbon reductions as the figure below shows.

	Description	CO <sub>2</sub> - reduction	Cost
Modernise buildings	Modernise <b>façades, windows and roofs</b> while building is <b>inhabited</b> (e.g. better insulation, triplex glass). New Homes to minimise retrofitting		•••
Modernise energy and heat supply	Modernise <b>heating systems</b> with modern <b>technology</b> or use different, more carbon neutral <b>combustible</b>		
Change tenant behaviour	Inform tenants on their energy consumption and show them how to save energy / $CO_2$ – make associated costs transparent		
Material & services	Source services and material from regional providers with low carbon footprint – Take recycling into account		
Footprint reduction at company level	<b>Evaluate and reduce</b> own carbon emissions (e.g. print less, enable home office) and <b>incentivise employees</b> accordingly		
Carbon offset	RSLs can plant trees and create gardens	n/m	
			Eiguro 12

Figure 12: Levers for Carbon Reduction

As Government seeks to apportion the cost of net zero it is likely to expect heavy lifting by RSLs. This requires a clear understanding about who in society should bare the burden, given that RSL income comes from social housing tenants from the most part.

A way to relieve the balance sheet of RSLs is to provide heat as a service. In this contracting model the heat supplier provides the investment in green heating system, including its operation and maintenance. Therefore, the RSL has no financing cost, only operating cost and this keeps the heating system off-balance of the RSL.

# Enabling operating margins necessary for leveraging debt finance

A viable operating model must contribute to increasing debt finance capacity: efficiency savings and revenue improvements must be viewed in a balanced way. Efficiency savings for consideration include operational cost (digitisation), repair and maintenance cost (control supply chain), value-oriented procurement (material and services) and interest discounts (and/or favourable covenants) of sustainable financial products.

Revenue improvements for consideration include 'warm rents': linking the energy performance of a home to energy improvement to social rent formula. Other considerations are the conditional sale of properties with substandard EPC ratings and additional business models driven by economies of scale e.g. offering heat as a service and introducing carbon-neutrality savings accounts for tenants.

### Creating dedicated grant funding

Grant funding for retrofitting must become part of the equation. Therefore, we expect that future grant funding becomes more part of an energy retrofitting program/ package. However, this will only become effective if Scottish government can design a balanced grant retrofitting program. For instance, (partly) permanently fuelled by a carbon tax and benefit system ('return on carbon'): grants for the 'hard to do's' (facades, windows, roofs, heating installations) subject to a RSL putting into effect a corporate sustainability strategy, including a decarbonisation business plan that looks ahead for next decades.

# Conclusion: the housing value chain needs an upgrade

- Business Scenario Planning by RSLs
- Investments by bank and ESG investors
- · Dedicated grant funding from government

#### References

Reports of the Committee on Climate Change

CE Delft. (2020). Zero carbon buildings 2050 Background report Background report. www.cedelft.eu

HM Treasury. (2021). Net Zero Review Analysis exploring the key issues.

HM Government. (2021). Net Zero Strategy: Build Back Greener.

Nathaniel Barker. (2021, March 15). Scottish government sets target for 100,000 affordable homes over next decade. Inside Housing.

National Housing Federation. (2021). Decarbonisation: a guide for housing associations.

Oxford Economics. (2021). GREEN GROWTH: OPPORTUNITIES FOR THE UK A REPORT FOR LLOYDS BANKING GROUP JULY 2021.

Oxford Economics. (2021). UK GREEN GROWTH INDEX CHALLENGES AND OPPORTUNITIES FROM THE NET ZERO TRANSITION ACROSS THE NATIONS AND REGIONS OF THE UK SEPTEMBER 2021.

RITTERWALD internal resources

Savills. (2021). DECARBONISING THE HOUSING ASSOCIATION SECTOR COSTS AND FUNDING OPTIONS.

Scottish Government, T. (2019). ENERY EFFICIENT SCOTLAND: The future of low carbon heat for off gas buildings. https://www.gov.uk/government/collections/renewable-heat-incentive-statistics

Scottish Government. (2021a). Housing to 2040

Scottish Government & Scottish Green Party. (2021b). Working together to build a greener, fairer, independent Scotland.

Scottish Government. (2021c). Achieving net zero in social housing: Zero Emissions Social Housing Taskforce report.

Scottish Government. (2021d). Heat in Buildings Strategy Scottish Housing News. (2021, October 8). Government paves way for warmer homes with £1.8bn Heat in Buildings Strategy.

Scottish Housing News. (2021, November 3). Scott Restrick: For a housing sector building towards net zero, EPC is a blunt tool.

UK Collaborative Centre for Housing Evidence. (2021). Housing in Scotland: Evidence for Scotlish Government 2021-2026.

UK Government. (2021). Heat and Buildings Strategy.

RITTERWALD — Retrofitting Social Housing Stock in Scotland · Discussion Paper

# RITTERWALD

RITTERWALD is an experienced and delivery-focused residential real estate business consultancy with offices in Berlin, Frankfurt, Amsterdam, and London. RITTER-WALD are experts in housing sustainability and partner with related industries (e.g. energy), and companies in the sustainable finance sector.

For more information:



Ad Hereijgers Director Business Development ad.hereijgers@ritterwald.nl



Austen Reid Director UK austen.reid@ritterwald.co.uk

www.ritterwald.eu www.sustainable-housing.eu