

Retrofitting social housing: a model for the UK

The UK's social rented sector is already investing and innovating in its quest to get to net zero. With the right financial stimulus, it could be a model for how to decarbonise the rest of the UK's homes.





Introduction

The energy performance of the UK's social rented sector is significantly better than private housing, partly because of energy efficiency and fuel poverty regulations, and partly because social landlords (RSLs) are proactively tackling the energy efficient retrofit of their properties. The sector is already investing and driving innovation in this area. As a result, 64.3% of housing association homes already have an EPC rating of C or above, according to The National Housing Federation's report, **'Decarbonisation: a guide for housing associations'**, compared to 35.6% of owner occupied homes.

Yet the full cost of getting social housing to net zero is still daunting. A recent **report** from Savills and the National Housing Federation (NHF) found that, to meet the UK government target of reaching net zero by 2050, housing associations alone will have to spend a further £36 billion to bring all their homes up to an EPC rating of C by 2030 and install the required clean heat technologies. That is on top of the £70 billion that housing associations already plan to invest on energy efficiency in the coming years.

It is clear that the UK government's £3.8 billion Social Housing Decarbonisation Fund, which will provide grant funding to the sector for ten years, will not be enough to meet this shortfall on its own. More private finance and new financial solutions will be needed to fund the retrofit of social housing at scale.

This is already starting to happen. Over the last two years, as interest from more environmentally and socially aware investors in the sector has grown, the amount of sustainable and sustainability-linked loan and bond finance funding the energy efficient retrofit of social housing has grown significantly.

In this article, the Green Finance Institute (the Institute) will look at what more needs to be done to finance energy efficient retrofits throughout the UK's social rented sector. Drawing on the opinions of executives from social housing, financial institutions and other companies and organisations serving this sector, it will look at the current barriers, both financial and non-financial, to installing energy efficient retrofits throughout the social rented sector on the scale required. It will also highlight some of the potential financial solutions, developed by the Institute's Coalition for the Energy Efficiency of Buildings (CEEB) and others, and some

of the recent innovations that are a step in the right direction. Lastly, it will consider what more the social housing sector, financial institutions and the UK government need to do to make the wholesale finance and installation of retrofits in all of the UK's social housing a reality. ■

The challenge for social housing

As part of the UK government's Clean Growth Strategy, published in October 2017, all fuel poor homes must be brought up to an EPC rating of C by 2030. The government also plans to issue a consultation on setting a minimum energy efficiency standard specifically for social homes later this year, which is likely to require all social homes to be certified EPC C by 2028, or 2030 at the latest.

The need to improve the energy efficiency of social rented housing and provide warm, comfortable homes for tenants is even more pressing at a time of high energy costs, which are increasing the financial burden for all social housing residents and the



- ▶ potential for fuel poverty. However, RSLs in the UK are facing other critical investment demands. There is an urgent need to address building safety, and fire safety in particular, after the 2017 Grenfell Tower fire. To address the current housing shortage, there is also critical need to build new, affordable homes. To meet anticipated demand, the NHF estimates that 145,000 affordable homes will have to be built – including 90,000 for social rent – every year for at least the next 10 years.

At a national level, the main source of grant funding that can help RSLs meet the EPC C target is the Social Housing

Decarbonisation Fund, which the UK government launched in 2019. The £3.8 billion fund, administered by the Department of Business, Energy and Industrial Strategy (BEIS) is to be deployed over ten years. The **first wave** of the fund awarded £179 million in funding to 69 different projects for one year to implement whole house retrofits on around 20,000 properties. The government has committed to a further £800 million for Wave 2 of the fund, which will give successful applicants access to funding for three years until 2025.

To allow for longer term planning and to create more efficiencies in the retrofit supply chain, the NHF is calling for the government to commit funding beyond 2025 and to bring forward the remainder of the £3.8 billion pledged for the fund in the next spending review. However, it is clear that the full of cost of retrofitting all socially rented homes to the EPC C standard cannot be met by grant funding alone. ■

The current financing landscape

The good news is that many social housing providers are also accessing private funding to finance their retrofit objectives. Supported by the sector's robust regulatory framework, the long-term cash flow forecasts that social rents provide, and the ability to secure financing against the housing stock itself, bond and loan finance has long provided the social housing sector with a sustained supply of low cost, long-term financing. "In our experience, even smaller associations continue to have good access to the funding markets and we see plenty of healthy competition on new lending proposals, even for amounts below £5 million," says Peter Borgers, senior relationship manager at Triodos Bank UK, a sustainable bank that lends to small housing associations.

However, since the CEEB published research on this topic two years ago **'Financing energy efficient buildings: The path to retrofit at scale'**, the amount of sustainable and sustainability-linked loans and bonds raised by social housing providers, at least in part for retrofits, has grown



rapidly. Now that it is mandatory for big companies in the UK to disclose their climate-related risks and opportunities, lenders and debt investors are much more aware of the climate-related risks and opportunities in their portfolios. At the same time, social housing organisations have become more aware of how their social business model and decarbonisation plans could allow them to attract sustainable financing.

"Those two things have led to a tilting of capital towards social housing, which is why we've seen a big increase in sustainability-linked loans and ESG labeled debt capital markets issuances in the sector," says David Willock, managing director, ESG Finance at Lloyds Bank, pointing out that the KPIs for sustainability-linked loans often include the decarbonisation of existing housing stock. "Last year, we helped to support

£3.4 billion of finance into the social housing sector and £2.4 billion of that was sustainability-linked or ESG labeled," he says.

In the bond market, Clarion Housing Group, the largest social landlord in England, became the first UK housing association to issue a sustainable bond in 2020 and has now raised nearly £1 billion from a total of three sustainable bonds to build new energy-efficient, affordable homes. L&Q issued the first sustainability-linked bond from the social housing sector in January 2022, a £300 million, 10-year bond that is linked to L&Q's ability to improve the energy efficiency of residents' homes, together with two other performance targets.

Meanwhile, bond aggregators, such as The Housing Financing Corporation (THFC) and MORHomes, which issue long-term bonds and lend the proceeds to housing associations, have both published sustainable bond frameworks, which will make it easier for smaller housing associations to access sustainable bond funding in the future. ■

Barriers to retrofit

Despite the amount of liquidity currently available in the sustainable finance market for the biggest RSLs, there are still financial barriers that make it difficult for others to retrofit their properties. There are also non-financial barriers, which for many of those interviewed for this article, are more problematic than the financial constraints.

Financial barriers

Limited funds: At RSLs, energy efficient retrofits must compete for budget allocation with critical safety remediation work and the construction of new homes. Nearly three in every four housing associations surveyed by the National Housing Federation in a **September 2020 study** said that concerns around funding were a key barrier to retrofitting at scale and pace.

Access to capital: Many smaller housing associations are not big enough to raise money in the capital markets. Some find that applying for the grant funding available for retrofits is a challenge as the application process takes time and resources that some smaller organisations do not have.

Planning horizons: Short-term government grant programmes, like the first wave of the Social Housing Decarbonisation Fund, are difficult to reconcile with RSLs' 30-year stock improvement plans. According to an April article by Inside Housing, nine of the 17 councils that received funding through the first wave of the Social Housing Decarbonisation Fund had not retrofitted any properties by the fund's deadline of December 2021, and to date, only one, Clackmannanshire Council, has completed its retrofit project. "Longer term funding is really important to give housing associations and the supply chain the confidence to rollout big retrofit programs," says Will Jeffwitz,

head of policy at NHF. "If the government could commit funding beyond 2025 that would allow for longer term planning, enable longer term contracts, stimulate the supply chain and hopefully bring down the costs of interventions."

Covenants: Housing associations, which are the highest share of social housing stock, often have interest cover covenants in their existing bank loan facilities that prevent them from doing large scale, on-balance-sheet borrowing for decarbonisation projects. Michaela Booth, corporate finance and treasury director for Altair and Aquila Treasury and Finance Solutions, which provides advice to the housing and education sectors and other public sectors, says that current economic conditions are putting these covenants under greater pressure and that banks are becoming more flexible about the amount of security they require. "Several lenders are now moving away from such covenants or permitting exclusions, recognising the benefitting of ensuring homes are sustainable and lettable," she says.

Triodos Bank is one of those lenders that now offers greater flexibility on its covenants.. "We are having discussions with our housing association borrowers to adjust some of our lending covenants to ensure that investment spend in energy efficiency is factored in, so that lending covenants don't inadvertently restrict an association's ability to carry out this important work," says Borgos at Triodos Bank. Together Housing (see Q&A) is one housing association that has already negotiated with its lenders to decouple its covenants for energy efficient investments in its stock, and for some building safety improvements, which has allowed it to raise more in the capital markets.

No financial return on investment: Even if they are able to borrow more, unlike the construction of new energy-efficient homes, which generate a new stream of rental income, many energy efficient retrofits do not generate any revenue for RSLs, because landlords cannot change the level of rent charged

and savings on energy bills after a retrofit generally go to the tenant. Some retrofit schemes generate some return for RSLs (**see solutions and Energiesprong case study**). There are also warm rent models, which allow landlords to charge a fixed amount for energy bills in the overall rent. The GFI's CEEB is about to launch a Green Rental Agreement that will support the adoption of warm rents in the private rented sector.

However, even in cases where RSLs can gradually recoup their retrofit investments through energy savings, the pay back period can span many decades. "It is very difficult to capitalise the future returns (energy savings) on such a long-term investment," says Dom Boyle, Cities and Sustainability, at PwC. "We need innovative financing methods, such as ways of aggregating small investments to a scale where they can be packaged up for very patient capital. In this case, social housing is in a far better position than private housing."

Non-financial barriers

Supply chain constraints: A lack of skills and knowledge, the high cost of new technologies and a lack of demand means that retrofitting at scale, at an acceptable cost and to an acceptable standard is extremely challenging. This is particularly true at a time of rising materials and labour costs and hits small housing associations, which can't award big contracts, the hardest. "If all the money required to decarbonise the whole stock of the whole social housing sector was available today, there is not anywhere close to the skills and supply chain to deliver that," says Paul Norman, head of asset management at Clarion Housing Group. He adds that even sourcing enough parts and resources for the small Social Housing Decarbonisation Fund demonstrator project that Clarion is undertaking with Fenland District Council and Tonbridge and Malling Borough Council had been a challenge because of competition

▶ from other Social Housing Decarbonisation Fund demonstrator projects.

As part of its **Heat and Buildings Strategy** launched in October 2021, the UK government announced plans to boost skills, supply chains and bring down costs for retrofit parts, installation and maintenance. This includes making the cost of heat pumps comparable with boilers by 2030. Meanwhile, bigger housing associations are trying to stimulate the market by offering large-scale retrofit contracts. Others, like Abri, Anchor Hanover Group, Sanctuary, Home Group and the Hyde Group, which have collectively formed The Greener Futures Partnership, are banding together to enhance their purchasing power and secure more competitive pricing from contractors. This is similar to the concept behind **Demand Aggregation Finance**, another area of the CEEB's work, which allows private homeowners to come together to bulk order and mass install retrofit technology.

Staffing constraints and access to data: Project development, delivery expertise and capacity are often in short supply, particularly at smaller housing associations, which often do not have the personnel to devote staff members to net zero programmes. Many housing associations don't have enough data about their stock to know what energy efficiency improvements need to be made to meet EPC targets. Annabel Gray, sustainability lead at consultancy and advisory firm Altair, who advises housing associations on their net zero plans, says one medium-sized housing association she works with is preparing a green finance strategy, mapping its stock, understanding what properties need to be retrofitted at what cost, and if any hard-to-treat properties should be disposed of. "Unless you do that, it's quite easy to just panic, particularly when we've seen potential retrofit costs of £25,000 to £30,000 per unit discussed, but the reality is costs are much higher in a market of rising inflation," she says.



The view of residents: Retrofit programmes can create warmer, more comfortable homes for residents and lower their energy costs, but successful retrofits require a lot of resident engagement and trust, particularly for whole house retrofits. "You are asking them to live in their home in a way that they never have before," says Clarion's Norman. Residents also need to know how to use newly installed equipment

correctly. "If you start using an air source heat pump in the way that you used to use your boiler, you could suddenly find yourself with high bills," Norman says. Private leaseholders may not agree to the retrofit of their properties at all, which can make multi-property retrofits more complicated and suppress economies of scale. ■

Financial solutions

Access to more private borrowing may not be the silver bullet for retrofitting social housing at scale, but there are a number of financial solutions that could help overcome both the financial and non-financial barriers.

In 2020, the CEEB designed a number of financial solutions and data tools that could help to accelerate retrofits in the social housing sector by catalysing further financial innovation at scale. What follows is a summary of the CEEB

solutions that are most applicable to social housing, together with a look at how the viability of these models has evolved over the last two years.

Local climate bonds:	<p>Local authorities are already using these bonds, developed by Abundance Investments, which enable retail and impact investors to invest in energy efficiency projects in their area, raising low-cost capital and awareness in the local community. Abundance has calculated that this type of climate investment could raise as much as £3 billion if issued by the 343 local authorities in England alone. In July 2021, the Institute and Abundance launched the Local Climate Bond campaign, to raise awareness and support participating councils through the process of releasing their own Local Climate Bonds. To date, seven councils have signed the Institute's Local Climate Bond Pledge, committing to issuing a bond or related municipal investment in the 18 months following COP26. This financing model could be used to raise capital directly for the retrofit of social housing.</p>
Government guaranteed social housing finance:	<p>The government already has a guarantee scheme, provided by ARA Venn, which helps housing associations fund the construction of new homes. A government guarantee scheme for large-scale retrofit projects in the social housing sector, would help to de-risk transactions and minimise long-term borrowing costs, particularly for small and medium-sized housing associations that aren't able to secure cheap debt finance on their own. This could enable housing associations to pursue larger-scale retrofits, in turn, scaling the supply chain and driving costs down.</p>
Insurance-backed comfort plans:	<p>Energiesprong is a Dutch-developed whole house refurbishment and funding approach for achieving net-zero homes. Launched using the social housing market in the UK, it is designed to unlock zero carbon retrofit at scale, partly paid for by energy and maintenance savings and delivered by a new high-tech industry with guaranteed actual performance, comfort and costs long term. Because homes no longer have a gas bill after one of these retrofits, housing associations can charge tenants a 'comfort plan' equal to or less than the previous bill, enabling the landlord to gradually recoup its initial investment - with tenants guaranteed a warm, comfortable home. As an example of a retrofit with a revenue stream, this model could be scaled with private finance. An insurance-backed guarantee for this model would further increase confidence among housing associations and potential lenders and investors, speeding up this process.</p>
Leaseholder financing:	<p>It can be challenging for social rented landlords to conduct multi-property retrofit works if private leaseholders in a block of flats or row of terrace housing do not consent for work to be done. If either the social landlord, or another intermediary, could provide these private leaseholders with financing on attractive terms to retrofit their properties, this could increase consent for multi-property retrofits.</p>
Comfort as a service:	<p>Comfort as a service and heat as a service are performance-based contracts, where a service company decarbonises homes on behalf of a social housing provider and recoups its outlay by charging residents an energy service fee. Instead of buying units of energy, residents buy the number of hours of warmth needed each week at the temperature they want. The service company covers the upfront retrofit costs, maintenance and takes on the performance risk, removing multiple barriers for social housing providers. If these service companies could access financing in the capital markets at scale, this could boost the retrofit market. In its Heat and Buildings Strategy, the UK government announced that heat or comfort as a service was one area where it wants to catalyse innovation.</p>



Affordable rent, affordable living:	The current definition of affordable rent does not include a tenant's energy costs, which in many cases are currently rising. If the 'affordable rent' definition was adjusted to include modelled energy costs, this would help to end fuel poverty and incentivise landlords to conduct large-scale retrofits, which would bring the combined cost of rent and energy down.
Metered energy savings:	The ability to measure real-time energy efficiency savings delivered over the lifetime of a retrofitted building could support the development of new and targeted retrofit financial products. Some RSLs are already collecting real-time data on their properties, but the development of a standardised, nationwide savings calculation methodology to deliver rich data on real-time energy savings would be even more valuable. In February 2022, the CEEB published the report 'Towards a protocol for metered energy savings in UK buildings' , in which a working group of organisations from the finance, retrofit, energy and academic sectors, led by EP Group, laid out how this could be achieved.
Sustainable housing label:	<p>The housing associations that have issued sustainable bonds have done so using third party labels and certifications. Clarion Housing Group used the pan-European Sustainable Housing Label developed by Ritterwald for all of its three sustainable bond issues. "Developing our Sustainable Housing Finance Framework and obtaining the Ritterwald certification were essential in order for us to issue sustainable bonds," says Gary Leadbeater, director of treasury and corporate finance at Clarion. "However, there are a multitude of labels and certifications at the moment and everyone is trying to establish which are the right ones."</p> <p>A certification scheme for green buildings and retrofit projects, across all tenures, which dovetails with existing labels could stimulate demand and sustainable investment into the sector. Meanwhile, a new Sustainability Reporting Standard for Social Housing, developed by a working group of housing associations and financial institutions, was launched in 2021 to make it easier for the social housing sector to attract investment from investors concerned about sustainability and enable associations of all sizes to attract funding from banks and the capital markets, potentially at a lower cost.</p>

The way ahead

What else could facilitate the retrofit of social housing at scale over the next few years?

One promising development is that housing associations are creating a revenue stream from retrofits by selling energy that is surplus to the requirements of residents to the energy market. "We try to not just see decarbonisation as a cost, but as an opportunity to increase efficiency and generate revenue," says Patrick Berry, director of net zero at Together Housing.

In 2019, Together Housing piloted the use of solar panels with battery storage technology in 250 retrofit properties. The model has now been expanded to around 750 homes, which will give

Together Housing over seven megawatts of solar capacity. Together Housing eventually plans to install 50 megawatts of self-funding solar capacity across 17,000 properties by 2035. Although Together Housing is not among them, some RSLs that sell excess energy have become registered Energy Service Companies (ESCOs).

However, it's likely that RSLs will need a mix of different funding strategies for retrofits in the future. "A lot of people in the sector are beginning to accept that they'll need a diverse strategy," says Altair's Gray. "It's got to be a mix between grant funding, maybe reforecasting business plans, perhaps streamlining their asset management plan, perhaps looking at things like ESCO models. Every organisation has a different view on it."

Fine-tuning the sustainable investment model to better fit social housing is another thing that could help the sector unlock more investment, both for retrofits and other social and environmental initiatives. "There is some work to do on the metrics and how they are weighted. For example, the environmental factors seem to be being over indexed compared to the social and governance factors, when some investors may have a greater consideration for the social factors," says Clarion's Leadbeater.

Altair's Gray thinks that commercial land and building owners should also be encouraged to gear up the retrofit market and help bring the costs down for everyone. She says that there could also be a mechanism for big corporations to offset their carbon



▶ footprint in the social housing sector, in the same way that they currently do in reforestation and other nature restoration projects. “I’ve been discussing this with our chairman and it’s something that we’re trying to explore,” she says.

At a national policy level, social housing executives and finance executives alike say there needs to be clarity on what constitutes net zero, but also the right performance metrics to achieve this. Currently, RSLs are working to reduce the EPC ratings of their stock, when EPC ratings give no indication of operational performance and do not necessarily correlate with carbon reduction.

In **‘Decarbonisation: a guide for housing associations’**, published last October, the NHF came up with a number of recommendations for the UK government, including reform of the SAP / EPC methodology to accurately measure and incentivise decarbonisation, electricity price reform to ensure that electric heating systems don’t lead to higher bills, help with unlocking more financing and funding for the sector, and support for skills and supply chains to ensure that retrofit technology and installation is available at the scale and price needed. “The government has signalled a commitment to looking at issues such

as EPC and energy price reform, which we really support, so we want to work with government on the timing and details,” says the NHF’s Jeffwitz.

The social housing sector already has the commitment to retrofit its housing stock and is at the forefront of innovation. If some of the financial and non-financial barriers can be overcome and the right policy and regulatory environment is created, the social housing sector could provide a valuable model for how to decarbonise all UK homes in the coming years. ■

Q&A

with **David Willock**, managing director, ESG finance at Lloyds Bank



Q: More financial institutions today are looking at capital allocation through an ESG lens, but why is social housing a beneficiary specifically?

A: There’s a really clean line for them to see that their capital is going to a recognised social purpose – the provision of affordable housing. Increasingly, this is also bringing environmental outcomes by improving existing stock or providing new sustainable homes. Finally, as a regulated sector, this transparency also helps financial institutions understand the underlying profile of the sector and counterparties within it.

Q: To access sustainable finance, social housing organisations are having to meet new reporting standards. Will the new Sustainable Reporting Standard for Social Housing help to make this less onerous?

A: Over the last two years, there’s been a proliferation of certifications, standards, workshops, working parties and committees. It is becoming a difficult area for treasurers, but also smaller associations without internal capability, to know what good looks like. David Cleary, our head of housing, is a board member and Lloyds Banking Group is an early adopter of the Sustainable Reporting Standard, which is about creating one standard that’s really transparent and specific for the sector. With over 100 early adopters since inception, it is getting good traction.

Q: What are the most appropriate financing models to fund retrofits at scale?

A: We are seeing lots of innovation across our housing association clients, taking a test and learn approach, but ultimately there is yet to be primacy on which solution or financing model works best. There are some new financing models that will need careful consideration and stress testing. There’s a huge capital requirement to decarbonise buildings, so innovation such as those convened by the Green Finance Institute, like local climate bonds and other ways of crowding in more types of capital, are welcome. Alongside the new innovations, the sector has access to increasing liquidity in the traditional loan and debt capital markets, as well as through public initiatives such as the Social Housing Decarbonisation Fund. There is a balancing act required in terms of credit ratings and cash flow requirements and funding decarbonisation at scale.



Q: If the third party capital is already available, what is the main challenge?

A: Retrofitting tenanted homes at scale is difficult. As we have touched on, there isn't currently primacy on the solution or the technology. Beyond the technology, a key barrier is skills, both within the sector, but also for the physical delivery of retrofits. The

availability and cost of labour is a challenge and so is ensuring that the quality and intended outcomes are delivered.

There's an important tenant/occupier aspect too. Deep retrofit can be intrusive, so ensuring tenant needs are met throughout the process is a key consideration, ensuring that there is buy in and clear communication.

To address these challenges, the sector needs to radically collaborate, including with the supply chain and tenants. No matter how challenging, the increasing issue of fuel underlines the imperative we have as a society in this area.

Q&A

with **Patrick Berry**, director of net zero at Together Housing



Q: How is Together Housing financing the decarbonisation of its existing housing stock?

A: We were successful with wave one of the Social Housing Decarbonisation Fund and we are preparing two new bids. We are also looking at other ways we can generate revenue. Our solar PV portfolio, for example, currently generates about £1.5 million of revenue a year and our PV and battery model is self funding and will generate revenue permanently. We're thinking about how decarbonisation fits with how the electricity grid is being revolutionised and new emerging markets like grid flexibility and the balancing mechanism, which have potential revenue streams.

Q: Are rising energy costs making energy efficiency more of a priority for housing associations?

A: Yes, because it affects people's well being if they are not using their heating and could affect rent defaults. I would say rising energy costs will be at least a medium term issue, not just a short term one, because the country's traditional generating assets are declining and we're at the start of an exponential growth in demand for electricity as we switch over to electric heating, electric vehicles and other forms of electric transport.

Q: What needs to happen to secure more private finance in this market to retrofit at scale?

A: Raising money has never been an issue for us. It's paying it back. On one level, there's an absence of workable financial models, because even if you can borrow the money, your core revenue doesn't increase, because we can't change the level of rents that we charge. So we're doing what we can to maximise grants and look at other ways of generating revenue.

Q: What other barriers exist for housing associations trying to retrofit at scale?

A: Doing this at scale is not easy because markets are relatively immature and the price of equipment

remains high. For example, major assets like ground source heat pumps for tower blocks are very expensive and cost about £17,000 or £18,000 per property. More needs to be done throughout the industry to get prices down for retrofits. More certainty around government support of the retrofit market would help, but we need the noise around retrofit to convert into real market contracts. What makes a market work is real opportunities to make money, so we're developing three-year contracts at scale, including one that will retrofit and install solar PV and battery systems in several thousand homes. We're trying to industrialise our investment plans across our stock.

Q: How many larger-scale retrofits are happening in social housing?

A: They are happening, but at the moment, more organisations are talking about spending money, rather than actually spending money. That's a problem because the home owning public will not be the early adopters on this. It will be the public sector, because we can afford to do in scale. When the market becomes more efficient, it's much more likely that decarbonisation will occur in other parts of the housing market.

Case study 1:

London launches £90 million green bond programme to decarbonise social housing

In February 2022, the Mayor of London, Sadiq Khan, announced a £90 million green bond investment to fund the retrofit of social housing throughout the capital, as well as public buildings, and invest in local energy projects, such as solar PV, heat pumps and district heating.

Of the £90 million committed, £86 million will fund the GLA Green Bond Programme, which will issue green bonds to finance the GLA Group's decarbonisation projects and that of its strategic partners. The remaining £4

million will fund the development of high impact green investment opportunities for the public and private sector.

The social housing retrofit programme will move the city closer to its net zero targets, but also improve the living conditions of thousands of London residents, while helping to combat rising energy bills and fuel poverty. London has some of the highest levels of fuel poverty in the country, with one in nine London households unable to meet the cost of heating their homes.

The Retrofit London Housing Action Plan, developed last year by the London Housing Directors' Group with support from the London Environment Directors' Network, the Greater London Authority, and Enfield and Waltham Forest as lead boroughs, recommended that London boroughs retrofit their own stock of 390,000 council homes.

The end goal of the £90 million investment announced in February is to mobilise around £500 million of private investment in the GLA's Green Bond Programme. ■

Case study 2:

A route to self-sustaining finance for Energiesprong UK

The Energiesprong model, first deployed in social housing in the Netherlands, enables socially rented homes to become completely net zero and energy independent through a whole house retrofit. This is done through a number of measures, including the installation of pre-fabricated insulated external wall panels and roofs, with integrated solar panels and battery storage, and new energy efficient heating and hot water systems.

After an Energiesprong retrofit, the company guarantees the energy performance, cost of energy and level of household comfort for up to 40 years. The first Energiesprong pilot in the UK was done for Nottingham City Homes in 2017, transforming 10 hard-to-heat socially rented homes in Sneinton, on the edge of a city centre regeneration area, into net zero homes. The tenants were involved in the design brief and the retrofits incorporated their suggestions.



Nottingham City Homes, solution provider: Melius Homes & Studio Partington. Photographer: Tracey Whitefoot

The result has created homes that are warm, comfortable and more desirable, with lower heating and energy costs for residents.

The Energiesprong project, which is partly funded by the European Regional Development Fund, has now been expanded to 58 social housing homes in

Nottingham, with a further 85 that are funded, getting the city closer to its ambition to be the first UK city to become carbon neutral by 2028. It was one of just 17 projects worldwide showcased at the 26th United Nations Climate Change Conference (COP26).

Energiesprong UK is now working on a

▶ number of different projects throughout the UK, with a pipeline of almost 2000 homes, including two new projects funded by the Social Housing Decarbonisation Fund. One, with Nottingham Homes and Nottingham City Council, will retrofit a further 104 homes in Nottingham, and the other, through a National Net Zero Retrofit Accelerator project, will enable six landlords to retrofit 200 homes in London.

A retrofit with a revenue

Because homes no longer have external energy bills after a Energiesprong retrofit, a particular benefit at a time of rising energy costs, RSLs can charge tenants for heat, hot water and electricity through a comfort plan for an amount equal to or less than their previous energy bill. With these payments, and the money saved on maintenance, landlords can gradually recoup their initial investment. Although Energiesprong projects are currently grant funded, as an example of a retrofit with a revenue stream, this model could be scaled with private finance.

For Energiesprong's first pilot in Nottingham, the comfort plan was collected through Nottingham's communal energy scheme. In other Energiesprong retrofits, the comfort plan has been collected via the energy company. Jon Warren, market maker

supply and policy at Energiesprong UK, says that Energiesprong has worked with lawyers to finesse its comfort plan approach, but that it's been a challenge.

"You can't make the comfort plan part of social housing rent because of government legislation and you can't make it an energy bill, because the tenant could switch away," he says. "In the Netherlands, if social housing providers get energy performance to a certain level, they are allowed to charge the tenant a certain amount of euros per square meter, but in the UK, we don't have that."

Warren says that banks have been having conversations with local authorities about how to finance Energiesprong projects at scale, but to create a self-sustaining financial model, the cost of Energiesprong retrofits also has to be reduced. "A self-sustaining market would require costs to be around £50,000 to £60,000 per home," he says. "Currently, they are too high because this is an immature market delivering pilot projects. In Nottingham, where learning is being implemented phase by phase, and project scale is increasing, costs have reduced by 45%, and are starting to get near to that target."

He's hopeful that current investment and improvements in the supply chain will make this target possible. "If we got the cost down to £65,000, which I can see happening in the next 12 or 24

months, a finance solution starts to look interesting." He adds that Energiesprong homes could be attractive for housing finance or green mortgage providers, because they improve the value of the property, and secure its future energy costs and maintenance.

To make this a self-sustaining model that works at scale, Energiesprong **is asking the government** for a clear target for net zero homes now, £250 million in innovation investment to help scale Energiesprong retrofits while reducing the costs, the removal of VAT on manufactured energy efficiency products, which was announced in Chancellor Rishi Sunak's Spring Statement in March, a legislative framework for landlords to charge tenants for comfort plans, and zero or low-interest rate financing for retrofits.

"We really need to create a runway for the supply chain to tackle net zero, rather than providing short-term funding to get to EPC band C. If we had five years of funding, lots of suppliers and housing providers would co-invest in that vision," says Warren. "At the moment, the mature market wants to do millions of low performance retrofits, while we can only do a few 100 homes to a net zero standard without industrialisation and policy intervention. We need more long-term thinking around this." ■

A selection of European initiatives supporting the retrofit of social housing

- The **QualitEE** consortium aims to bring together contractors, suppliers, public and private owners, financial institutions and investors, certification bodies and national organisations to devise quality assessment criteria and assurance schemes to scale energy efficiency measures.
- The European Investment Bank's **ELENA** programme provides technical assistance for energy efficiency and renewable energy investments targeting buildings and innovative urban transport. One example is the **Aster** project, which is retrofitting social housing in Flanders, Belgium.
- **RenOnBill** aims to scale up investments towards deep energy renovations of residential buildings by promoting the development and implementation of on-bill schemes.
- In Estonia, the **KredEx fund** is a revolving energy efficiency fund that finances housing associations that want to improve the living conditions and energy efficiency of their homes.

Acknowledgements

The Green Finance Institute and the Coalition for the Energy Efficiency of Buildings would like to thank Together Housing, Clarion Housing Group, Altair, Aquila Treasury and Finance Solutions, Lloyds Banking Group, Triodos Bank UK, the National Housing Federation and Energiesprong UK for their participation in this article.

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