Cities Commission For Climate Investment

From Challenge to Opportunity:
Unlocking a UK-wide Net Zero Investment Dividend

3Ci Net Zero Investment Taskforce Findings

March 2024

A Connected Places Catapult Initiative

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Foreword

I am pleased to present the initial findings and recommendations of the 3Ci Net Zero Investment Taskforce, established by 3Ci to interrogate from a private finance sector perspective a model for a neighbourhood-wide approach to decarbonisation focused initially on retrofit as the biggest investment need for local net zero.

Our discussions have reaffirmed that the task is not straightforward. Whilst our aim may be to retrofit homes, we are also trying to retrofit a financial system and its models to a purpose for which they were not created. A rapid evolution is required, creating an investment ecosystem that will help the market to adapt and new models to emerge.

The Taskforce's work has involved detailed discussions with investors and their advisors – the people and institutions that can make this work, and with whom "the buck stops" for investment decisions, and this update summarises what they have told us. These are central challenges which the UK must navigate on a path to increased net zero investment.

Through 3Ci, we are also engaged with many local authorities, who investors agree should have a central role in delivering local net zero, bringing their assets, local knowledge and convening power to the table.

We will continue to work on these challenges into 2024 as set out in the next steps below, and would welcome responses, offers of support, and indeed insight to more challenges that we need to unlock to get investment flowing.

The Taskforce members include many highly experienced and knowledgeable officials within the investment community from banking, insurance, pensions, venture capital, ESG and impact investors. I am extremely grateful for the generosity and enthusiasm with which they have approached this project, giving unstintingly of their time and expertise. I am also very grateful to the many contributors to our evidence sessions and other meetings which have steered our work, and to the excellent team which has supported me in our work.

We must now take their comments seriously and act to address them if we are the reap the major opportunity that local net zero undoubtedly represents.

Catherine McGuinness CBE

Non-Executive Director, Connected Places Catapult

Executive Summary

3Ci, the Cities Commission for Climate Investment, is an innovative collaboration between UK local government and the private sector. Our aim is to support local authorities secure the necessary long-term finance for achieving net zero.

3Ci formed a Taskforce of investors to consider the investment case for an innovative financing model for retrofitting housing – Net Zero Neighbourhoods ("NZNs") – set out in an Outline Business Case developed by 3Ci to HMT Green Book standard, and to provide feedback and insight. The Taskforce included bankers, insurers, pension funds, venture capitalists, and impact investors. The Taskforce first met in June 2023 and held three Evidence Sessions considering different sectors. This report outlines the findings from those Evidence Sessions and our proposed next steps. The Taskforce is chaired by Catherine McGuinness CBE, Connected Places Catapult Non-Executive Director and former Policy Chair at the City of London Corporation.

Taskforce members showed interest in many aspects of the 3Ci Outline Business Case, but as with any model, also identified challenges that cannot be fully answered on paper. Taskforce members firmly stated that we need to provide proof of concept on the ground, dealing with the complexity of place and investment frameworks. Members told us that **there is strong support for demonstrator projects** that show how new investment models focusing on retrofit, including the model in our Outline Business Case, could work in practice. We must now work to find ways to activate this.

The Taskforce highlighted that demonstrators must be co-designed across a wide range of stakeholders from the outset. Government investment would be needed to ensure acceptable allocation of risk. However, by bringing investors together with local authorities that have projects on the starting blocks, we can begin work now, understanding and building the investment case. Investors are keen to support this approach, developing a small number of **pilot demonstrators**, accelerating future implementation. 3Ci will be actively collaborating with investors and local authorities to test and prove the viability of our model in real-world settings

To get investment flowing, there is also an opportunity – and we would say a need – to leverage the work of the Taskforce and many others in the net zero finance space by **convening a national conversation**, steered by local partners and national agencies, enabling better sharing of research, data and practice.

And there is a need for longer term commitment to delivering a programme of projects. This will require financial and policy commitment from government to back NZNs. In practical terms, we can assist by using the lessons learned and data collected from the demonstrators to scale up the investment opportunity, providing investors with a much larger investible project pipeline. Our strategy for securing long term commitment involves active engagement with both government and private sector partners.

Recommended next steps

1. **Activate Retrofit Demonstrators as a top priority:** a series of demonstrators are needed to address the challenges highlighted by this Taskforce, considering how they can also **enable a Just Transition** through financing models and identify the key project elements/players that need to be on board.

    a. **Take a place-based approach to solving challenges, not one size fits all:** Understand the needs of different approaches, geographies and tenures, exploring challenges raised for the model including:
    - community engagement and resident buy-in;
    - investment structures, types of finance, documentation and deals appropriate to different schemes and stages of schemes;
    - managing complex risk and volatility for different sources of revenue across different geographies including energy savings; and
    - local capacity to deliver.

    b. **Begin work now with pilot projects:** Bring the investment community, local and national government and its agencies together to co-design demonstrators, based on live and planned projects, understanding what will make them investible There is significant enthusiasm for this amongst investors and local authorities which the UK must capitalise on, working collectively to remove barriers, including through the planning process.

This will also allow for the development of a practical checklist of considerations, and for those seeking support to understand the requirements of ‘Net Zero Investment Term Sheets’ (which will vary depending on deal structures and types of finance sought) helping partners in decision making.

2. **Convene a UK-wide conversation, starting with a Net Zero Investment Summit:** with a commitment to a structured 2–3-year dialogue, steered by a collective of place leadership, investors and politicians from the Devolved Administrations as well as the UK government, alongside the many agencies delivering excellent work in this space to cohere findings and efforts.
A working dialogue resulting in practical action. The Net Zero Summit will play a crucial role in streamlining diverse policy and practical efforts into a coherent strategy.

3. **Build a wider enabling environment for Local Net Zero Investment:** taking the findings of these evidence sessions, data from other studies and models, and using them to progress the following:
    - reviewing regulatory and policy shifts to enable further investment;
    - further clarity of national intent for local net zero policy to establish market confidence;
    - aligning other key enablers of delivery that will affect investment, including supply chain readiness, labour market skills and how to address them;
    - collaborative work on technical assistance programmes, aiming for a ‘single national front door’ for those seeking support;
    - further development of Net Zero Neighbourhood forums and networks; and
    - closer collaboration with private sector funders to ensure their concerns re risk, return and timings are central to the discussions.

3Ci has made significant progress through the development of the 3Ci Outline Business Case, creating an opportunity to accelerate this and other models for local Net Zero investment, alongside its wider work on pipeline development and technical assistance, as set out below. Our shared task now is to work across sectors to make this happen, with a renewed focus on practical implementation and real-world testing.

Introduction

About 3Ci

3Ci, the Cities Commission for Climate Investment, is an innovative collaboration of local government and the private sector aimed at supporting local authorities across the UK to secure the necessary long-term finance for achieving net zero.

3Ci were initially established as a partnership between Connected Places Catapult, Core Cities UK, London Councils and a number of private investors, financiers, advisors, developers and built environment technology professionals. Membership has rapidly expanded to include representation from the M10 group of Metro Mayors, Key Cities Group, Scottish Cities Alliance, County and District Councils and the Local Government Association. We work closely with UK Government, Innovate UK, the Green Finance Institute and UK Infrastructure Bank.

3Ci are working to mobilise finance and drive investment into local net zero projects across the UK also aiming to deliver investment, jobs and green growth, revitalising local communities, tackling fuel poverty, improving quality of life and charting a course toward a just transition.

3Ci's place-based experience makes us uniquely placed to convene public, community, industry and financial institutions to help deliver the investment needed to get the UK to net zero emissions – and get there fast.

3Ci's programme includes: **The National Net Zero Pipeline**, a database of local and regional net zero projects, assessed for stage of investibility and further support needs, which will help deliver the scale that can build national market confidence and a predictive tool to map regional economic impact and associated supply chain, skills development and public investment needs; **Technical Assistance for Investible Places**, a programme of technical assistance to support the delivery of the pipeline and neighbourhood investment model above, upskilling UK local authorities: and **Net Zero Neighbourhoods**, an integrated, place-based model of multi-asset net zero technologies founded on domestic retrofit

It is this last priority which the Taskforce for Net Zero Investment has been tasked to review, exploring a detailed Outline Business Case (OBC) which 3Ci developed with government funding, for a neighbourhood-wide approach to decarbonisation: net zero Neighbourhoods. This model has focused initially on retrofit as the biggest investment need for local Net Zero, but also as the route to unlocking major benefits for communities and local economies.

In addition, 3Ci gather and disseminate innovative practice and convene regional and national events, aiming to build relationships between places and investors.

3Ci Net Zero Neighbourhoods (NZNs) model

The NZNs concept takes a multi-asset approach to neighbourhood decarbonisation operating across domestic and commercial property retrofit; renewable energy; transport; and waste. The model uses a share of returns from high-yield assets like energy to pump-prime low-performing ones like retrofit and waste, potentially captured in a single financial vehicle.

Whilst outlining the wider NZNs concept at a high level, the OBC focuses in on a domestic retrofit model in detail, because:

- housing is a major contributor to emissions, with UK homes amongst the least energy efficient in Europe[1];
- retrofit is the biggest single element of local net zero investment need;
- current models are reliant on high levels of public subsidy or individual debt that is highly unattractive to the majority of residents; and
- improving energy efficiency of homes will help address cost of living challenges.

The NZNs retrofit model:

- Takes a place-based approach placing communities and local authorities at its heart.
- Delivers multiple interventions at neighbourhood level to achieve scale and efficiency.
- Provides a blended funding model combinsing public, private and outcome seeking investment.
- Generates revenues by capturing part of the energy savings that result from the retrofit work.
- Links to local regeneration plans to maximise socio-economic co-benefits.

It must aim to reduce the need for the scale of public subsidy required for retrofit whilst delivering interventions at no additional upfront cost to the homeowner or tenant. NZNs are a means to reduce carbon, but also have the potential to transform entire communities into hubs of sustainability, enhancing quality of life for residents. The OBC concludes by proposing retrofit demonstrators, setting out a detailed implementation plan to prove the financial model and build market and investor confidence.

The model is based partly on the idea of creating an annuity from savings on energy bills which delivers a long-term return on investment. The model focuses on a scenario where property owners and residents benefit from reduced energy bills, whilst the community benefits from reduced emissions, new and greener jobs and economic growth through links to wider area regeneration plans.

1 Net Zero Homes, UK Finance, 2022

About the 3Ci Net Zero Investment Taskforce

Whilst the majority of public opinion aligns with net zero ambitions and many localities have plans, funding the transition poses a significant challenge. The cost of reaching local net zero, estimated at over £2 trillion for the entire UK[2], far surpasses the public purse's capacity without a very major fiscal initiative. Private investment is therefore crucial to solving the net zero challenge.

Following publication of the Outline Business Case in early 2023, 3Ci convened a Taskforce inviting members of the investment community to provide a perspective on the OBC's retrofit model and the Net Zero Neighbourhoods concept. Taskforce members include representatives across banking, insurance and pensions, venture capital, ESG and impact investing.

The stated objectives of the Taskforce are to provide confidence to government and other key stakeholders and funders of 3Ci that private investors support the 3Ci approach, whilst increasing investor engagement in 3Ci's work, specifically by delivering a private sector and investor perspective on:

a) 3Ci's Outline Business Case recommendations and retrofit model;

b) ways to incentivise private investment into Net Zero Neighbourhood demonstrator projects; and

c) the fit and need for 3Cis work within a wider landscape of support for net zero finance, including 3Ci's Net Zero Project Pipeline approach.

Taskforce members met initially in June 2023, followed by three evidence sessions to maximise sectoral inputs and feedback. The evidence sessions were divided into sessions for (1) banks, building societies and other mainstream lenders; (2) insurance and pension companies and other forms of private finance, and (3) public funding, impact investing, and international organisations.

The Taskforce's work aligns with recent publications related to net zero. The 2023 Skidmore Review[3], an independent review of the UK Government's approach to delivering its net zero target; the 2023 Green Finance Strategy[4] (both of which acknowledged the work of 3Ci); and the Oppositions Climate Mission[5].

These findings set out proposed next steps for the Taskforce on which responses would be welcomed.

2 City Investment Analysis Report, 3Ci, 2022

3 MISSION ZERO – Independent Review of Net Zero (publishing.service.gov.uk)

4 Green finance strategy - GOV.UK (www.gov.uk)

5 Labour Mission – Clean Energy (labour.gov.uk)

Key Challenges Identified by the Taskforce

Taskforce members widely welcomed both the OBC and NZNs retrofit model in attempting to solve a significant challenge for investment into local net zero projects.

This chapter summarises the feedback from Taskforce members, organised in different challenge areas. These include key challenges for government, local authorities and non-governmental organisations, the retrofit model, the outline business case, and investors.

6 The Energy Technology List, BEIS

Government, Local Authorities and Non-Governmental Organisations

Investors see local authorities' role as central

Taskforce members emphasised that Local Authorities are best placed to develop and coordinate neighbourhood schemes, given their convening role and ability to align multiple partners around local strategies and regeneration schemes. Councils can utilise their existing assets including housing, land, and infrastructure alongside their convening power and community relationships, increasing investor confidence. The viability of public subsidy programmes relies on funding from national government, particularly given the extreme financial challenges local authorities in the UK currently face, something acknowledged by all contributors. It was noted that there is currently no national public subsidy specifically designated for home energy retrofits.

Government support is needed to initiate demonstrators

Investors are keen to work alongside local and national government on live projects but are unable to take the whole risk of development finance for new and innovative models. They want to support and test models – potentially providing some portion of the required investment – in a way that allows them to invest at scale following completion. Investors believe that guarantees that underwrite investment, at least initially, would be useful, alongside government project co-funding.

Government support may also be helpful in facilitating the right regulatory framework for demonstrators. It has been suggested that one way to accelerate pilots would be a 'sandbox' approach, removing regulatory and other barriers to alignment of policy, agencies and funds at the local level, alongside community engagement to understand the detailed impacts of new revenue models. (similar to the Universal Basic Income trials[7]).

Market certainty and incentives

National policy stability and messaging will determine a large part of the investment landscape and appetite. Investors would welcome a clearer commitment by UK Government to meeting net zero targets and the models and support to achieve these. This would ideally include certainty over the UK's strategic course of direction, alongside more detailed regulation, for example setting out the trajectory for EPC rating requirements for rented properties.

Regulation, governance and supply chain key enablers and barriers

It is believed that minimum standards for energy and retrofit technology performance and installation will increase consumer and therefore investor confidence. Existing regulations require review, for example the Consumer Credit Act which might result in holding an investor accountable for the performance of technology they may have promoted as part of a deal, which investors tell us is a disincentive.

Planning and regulation must promote the reliability of technology and building standards

For example, by using a similar concept to the Energy Technology List (government's list of 8,000 energy efficient products[6]) for retrofit products (where tax breaks exist for proven technologies), and by setting net zero design standards for new buildings, retrofits, and rental accommodation. Such moves should go hand in hand with an assessment of the supply chain needed to get to net zero, in terms of available technology, but also green skills in the labour market, without which technology cannot be installed.

A lack of robust comparable data is slowing progress

Specifically, in understanding the financial, technical and behavioural outcomes of retrofit interventions. Government support to gather and share a harmonised set of data could help identify regional trends and enable local authorities and investors to better understand the expected performance and risk related to further investment.

7 BBC News, Universal basic income: plans draw up for £1,600 a month trial in England, June 2023

Government, Local Authorities and Non-Governmental Organisations (cont)

Changing the narrative on net zero could help buy in. Reframing net zero as an investment opportunity that can create local jobs and economic growth, lower bills and create warmer homes could help with buy-in, which itself is a determinant of investor interest. Governments should promote net zero using these terms. Other narratives around creating energy security and resilience against price volatility should also be considered.

The net zero support landscape can appear overly complex

We are working with stakeholders to ensure that the 3Ci programme meets gaps and does not duplicate, but even when this is clear to providers of support, it is not always clear to consumers, including investors. A clearer 'single front door' and signposting of support could make a major difference in accelerating pipeline development and investment.

Strategic public investment can leverage private finance

Further consideration should be given to integrating existing and future public investment with private finance, including grant funding. For example, local authority stakeholders reported an overly competitive and fragmented landscape of public funding, whilst patient investors suggested public funds could be used more strategically to create pipelines of investible projects.

3Ci's unique coalition should be leveraged

The platform created by 3Ci between UK-wide representatives of the local government family and major investors can be used in a variety of ways to solve the net zero investment puzzle, providing a route tn a single conversation. It can't and should not work on every aspect of net zero investment, particularly where others are mandated to act, but can make a complimentary, bottom-up contribution alongside other organisations working in this space.

Investors

Access to Capital

Feedback indicates that investment could come from a wide range of sources. Venture Capital Funds, for example, could be particularly engaged in creating innovative technology (enabling investment), whilst ESG or Impact Investing could deliver social and environmental outcomes (value adding investment), with pension and insurance funds engaged in low risk, long term investments (foundational investment). Different aspects of the project with different financing needs and risk-return profiles might be packaged together in one instrument, emulating a diversified portfolio.

There is a pressing need for a pipeline of more investable projects

Without investment grade projects, there can be no investment. Pension providers and other investors consistently report a lack of investable projects. 3Ci's National Net Zero Pipeline aims to help develop and bring forward investable projects understanding what support is needed where to bring them up to investment grade, and this is very much welcomed. It may also be necessary for Government intervention to broaden the categories of investment acceptable for particular entities. Recent moves to increase pension scheme investment into local and regional programmes are a case in point, underlined in the Chancellor's 2023 Mansion House speech.

Retrofit scale needs to grow to attract patient capital

Major patient investors like pension and insurance companies, whose capital is in some ways most suited to retrofit, are attracted to very large-scale projects, the likes of which most current schemes cannot achieve. Creating scale across multiple programmes and geographies could unlock this capital.

Replicability appeals to investors

Most investors have either allocated capital against net zero or intend to do so but struggle to find projects and models capable of providing the right returns. Retrofit involves a fragmented market of localised models that have yet to be replicated at scale. This does not mean finding only one model that works, it means that all models will be more attractive to investors if they can be replicated to some extent.

Potential defaults on energy bills add a layer of risk

The insight from industry is the need to manage diverse layers of risk, including a predictive analysis of current defaults, vetting of service providers and ensuring owners and tenants fully comprehend financial responsibilities through robust and clear contracting that outlines obligations.

The Retrofit Model

Now is the time to move from theory to practice

A key insight from investors is the need to mitigate a complex set of risks and obligations across property owners, residents, service and technology providers, and funders. This is a recognition that the only way to work through the challenges to any net zero investment model is by doing so in practice, not on paper. Demonstrators are an opportunity to explore and develop how the model could work. Investors back the need for demonstrators of retrofit models, including the OBC's approach. Many investors are prepared to actively engage in demonstrators and bring their resources to bear.

Linking investor repayments to energy bills has strengths and weaknesses

Whilst energy savings could be used to create an annuity for investors, there is some complexity in collecting fees. To successfully collect fees on energy bills would require the agreement and support of energy suppliers. In any neighbourhood, there are likely to be several suppliers and so this requires multiple companies to agree to get a Net Zero Neighbourhood to work. Enabling consumers to switch supplier also requires most if not all suppliers to be on board. This could be prohibitive, at least in the short-term, until a national programme was developed and/or this billing approach was mandated by government. Therefore, a different approach may be needed in the short-term, such as separate billing by the NZN vehicle.

Perceptions of the periodic payment obligation

Ideally NZNs would use a reworked version of the Green Deal legislation that enables the placing of a periodic payment obligation on a property. Whilst not a debt, this has the potential to be perceived as a debt and might lead to concerns over subsequent sale of property. If other mechanisms were used, such as a charge being placed on the property, this would also have implications on resale and the associated concerns of owners which need to be fully explored and planned for. The next stage of work will need to include discussions with power suppliers, their perceptions and how a charge might be treated in accounting terms.

Complex retrofit processes and decisions across multiple technologies, contractors and funding options is off-putting

Compounded by the variable quality of technology and installers, many residents and owners will struggle to assess the viability of different technologies, financing options and contracting. Recent high-profile failures of technology and its installation have exacerbated this. The model therefore will need to ensure that residents and owners have simple, well informed decision-making opportunities and that trusted partners are available to support their journey through this process. Minimum national standards for technology and installation would help resolve these issues.

Different tenures raise challenges

A neighbourhood-wide approach would need to address the possibility that some might pay more than others but not see additional benefits. It was noted that there is a reducing group of owner occupiers who can afford to invest in retrofit. Taskforce members commented on models for single-ownership sites, for example social housing; and mentioned that lessons have already been learnt through the Social Housing Decarbonisation Fund Programme[8]. Participants also suggested integrating net zero into Section 106 agreements[9], compelling or encouraging developers to incorporate energy efficiency improvements into existing buildings within or alongside planned new developments.

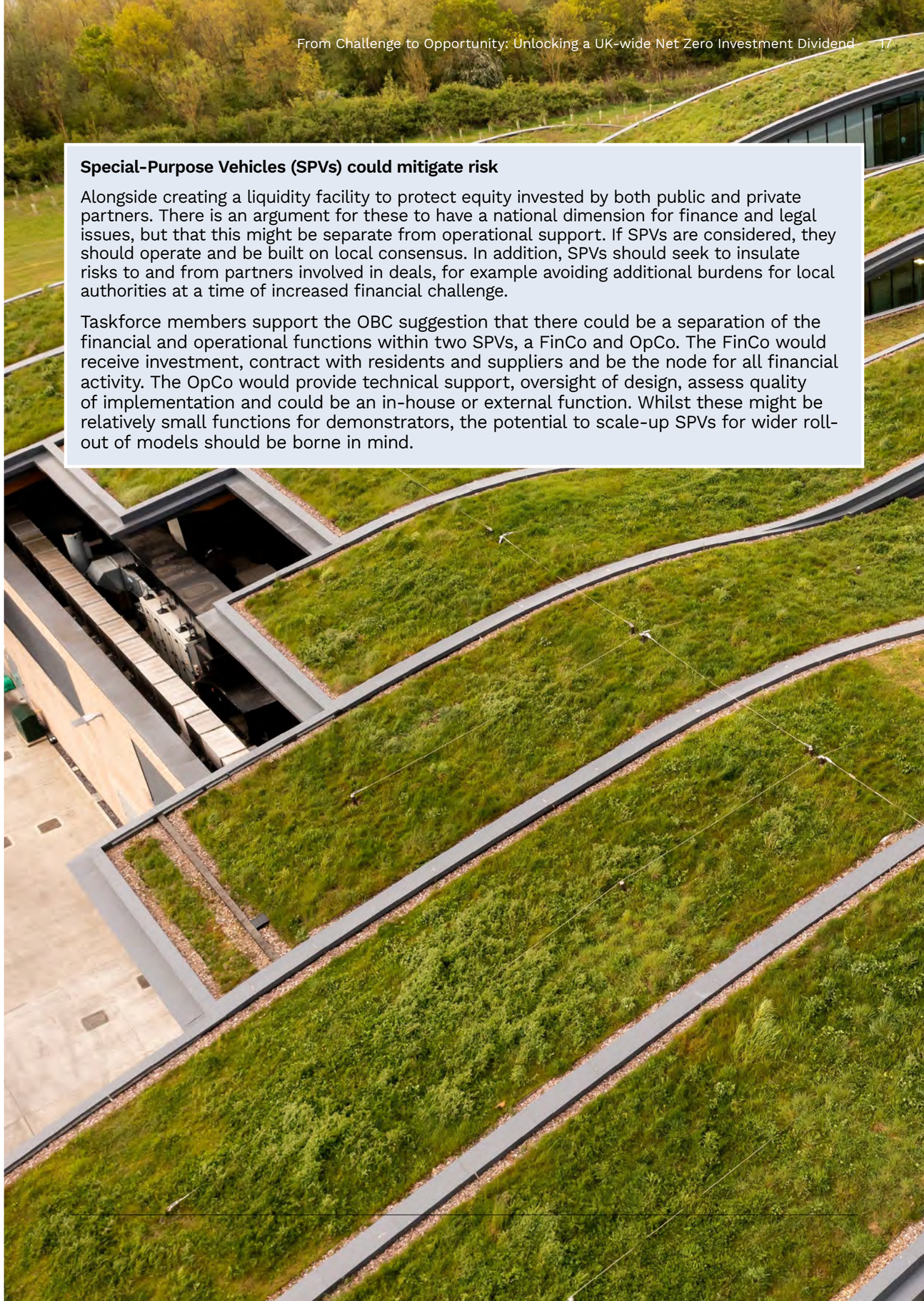
8 Social Housing Decarbonisation Fund: Wave 2.1 (closed to applications) - GOV.UK (www.gov.uk)

9 Legal obligations entered to mitigate the impacts of a development proposal: Guidance – Planning Obligations, UK.gov.uk

Special-Purpose Vehicles (SPVs) could mitigate risk

Alongside creating a liquidity facility to protect equity invested by both public and private partners. There is an argument for these to have a national dimension for finance and legal issues, but that this might be separate from operational support. If SPVs are considered, they should operate and be built on local consensus. In addition, SPVs should seek to insulate risks to and from partners involved in deals, for example avoiding additional burdens for local authorities at a time of increased financial challenge.

Taskforce members support the OBC suggestion that there could be a separation of the financial and operational functions within two SPVs, a FinCo and OpCo. The FinCo would receive investment, contract with residents and suppliers and be the node for all financial activity. The OpCo would provide technical support, oversight of design, assess quality of implementation and could be an in-house or external function. Whilst these might be relatively small functions for demonstrators, the potential to scale-up SPVs for wider roll-out of models should be borne in mind.



The Outline Business Case

Achieving project investability

Major long-term investors are attracted by the potential of retrofit models, but only if there is a realistic prospect of stable returns, based in part on creating scale and replicability. To enhance investability, it's crucial to ensure that value creation aligns with investor expectations for returns. Investors want to actively help local and national government to develop approaches that deliver this, working with 3Ci. There was also a clear requirement that investments be replicable, with the structure and content being similar from neighbourhood to neighbourhood to enable investors to assess risk and viability with relative ease.

The 'mathematics' of deals and robustness of returns is critical in ensuring effectiveness

Certainty over payback is critical to confidence and must take volatility into account, of the economy in general, and of energy prices where a model is linked to bills. It was noted that the previous Green Deal[10] did not have a high uptake due to high interest rates which made it less attractive; it did not mean that the model was wrong, only that the mathematics of the deal were a critical challenge. Most contributors to evidence sessions felt that longer payback periods would help, although the optimum limits of any payback period were debated.

Community buy-in is critical

Investors require this yet is difficult to achieve even when there is no cost to owner. Before NZNs are implemented, investment into local education is paramount to ensuring uptake of the programme. Communication is also key during the programme; technology can be used to keep users on the same grid linked together. Local authorities have a key role as trusted convenors, and behavioural studies suggest operating at neighbourhood level may help achieve wider buy in. The affordability concerns of households could be a major barrier particularly during a cost-of-living crisis. Whilst the model aims for no upfront cost to homeowners and provides reductions in energy payments to residents through them retaining part of the energy bill savings, there is the potential for the perception of another payment creating more obligations, and overcoming this perception will be vital to achieving community buy-in. Other models, based for example on resident / owner loan repayments are likely to only deal with a relatively small portion of retrofit need, disadvantaging those unable to pay.

We should focus on fairness and a "Just Transition":

Retrofit can have a significant impact on energy bills and thermal comfort in buildings, which can then impact positively on those in fuel poverty. The ability invest in retrofit is much less likely for those in fuel poverty and so it is often those who would most benefit from this work that can least afford it. The model must ensure that even where these residences may not yield big returns, they are included in the transition. There is an issue within this that those going without heating now may still be unable to afford heating in a retrofitted property. The model must therefore also explore how to ensure that residents are able to affordably heat their homes post-retrofit, and that other benefits, for example job creation are distributed fairly across and between communities. Exploring options to redirect some savings from an area-wide approach to retrofit to address this should be considered, for example into community wealth building.

ESG and Impact Investment may be small but can be catalytic

Whilst small relative to the market, this sector can catalyse community and social benefits, should be considered from the outset, and should be deliberately structured-in from the beginning. This must account for the objectives and needs of different investors, incorporating deal structures that serve multiple interests, and prevent the selective investment in only the most lucrative elements of projects.

10 Green Deal: energy saving for your home: Overview - GOV.UK (www.gov.uk)

Opportunity: Demonstrators

We propose to test the financial model and build market and investor confidence by launching retrofit demonstrators. These are projects that showcase how the model could work in practice across neighbourhoods of around 1,000 properties. Investors support the need for such demonstrators and are willing to participate and contribute their resources. The Taskforce emphasised that demonstrators should be co-designed with various stakeholders from the beginning, with Government investment as a catalyst. However, there is also an opportunity to start working now with local authorities that have ready-to-go projects and investors that are eager to support them.

Demonstrators should consider the following key issues and challenges:

- **Learning from past lessons:** including the experience of the Green Deal, Social Housing Decarbonisation Fund and other projects both in the UK and elsewhere to rule-in or out specific approaches.
- **Data requirements:** the specific types of data that are required to understand the technical and behavioural outcomes of the model, as well as measurement and verification that might be required of the funding model (e.g. the **International Performance Measurement and Verification Protocol**), which impact on investor attractiveness.
- **Community engagement:** drawing on existing practice to understand how best to achieve this, including messaging, clarity of information, the need for – and impact upon – Just Transition.
- I**mpacts of different tenures:** owned, rented, social, and on different types of property. It may be advisable to include a set of properties in demonstrators owned by a social landlord. Commercial properties could potentially be part of some demonstrators, exploring how standards for domestic retrofit could support standards for commercial retrofit.
- **Interaction with place-based strategies:** including wider area regeneration, economic and public service plans, understanding how to align these to achieve maximum co-benefits.
- **Routes to investor repayment:** assessing the viability of models based on energy savings and other revenue streams, factoring in volatility in pricing, usage and the wider market (e.g., interest rates).
- **Roles of different types of finance:** venture, patient, ESG and other investment can all have a role to play, and demonstrators should seek to understand this in detail.
- **Risk assessment and mitigation:** there are a wide range of risks associated with this and any net zero model that moves beyond public subsidy, which should be clearly identified and tracked within demonstrators.
- **Replicability, scalability and investability:** addressing this tripartite challenge could begin through the creation of an ‘Investor Terms Sheet’ for retrofit projects. The industry-led National Retrofit Hub could partner in developing this.
- **Regulatory barriers or impediments to delivery:** remove or suspend these for demonstrators where analysis suggests this will accelerate delivery, taking a ‘sandbox’ approach, considering longer-term regulatory reviews where indicated.
- **The need for and design of Special Purpose Vehicles:** 3Ci’s OBC suggested separating out the financial and operational elements of NZNs, which requires testing within demonstrators. SPVs can help to insulate risk but should avoid increasing costs and be based on local consensus (see also below). In addition, SPVs should seek to insulate risks to and from partners involved in deals, for example avoiding additional burdens for local authorities at a time of increased financial challenge.

Building on the feedback from the Taskforce reflected in this report, 3Ci is committed to transitioning from the theoretical model to practical, on-the-ground demonstrators focusing on fostering net zero investments in public net zero projects. These demonstrators will serve as real-world projects to test our financial model and build market and investor confidence.

Our engagement with the sector and the Taskforce underlines the wish of the investment community to develop viable financing models in response to the pressing need and opportunity for retrofitting and broader net zero investments in the UK. This is not new, nor has it suddenly appeared. It is instead built on the hard work of many organisations and institutions over several years.

Our more recent contribution has been to bring a public-private coalition to bear, alongside a detailed model for retrofit. The original OBC has, in this sense, achieved what was intended, to kick-start a debate on retrofit, paving the way for action through on-the-ground demonstrators. Whilst the work of the Taskforce underscores the significant challenges to delivering retrofit and highlights issues which need to be addressed as we take the OBC model forward, it has also emphasised the support that exists across the investment community to work in a direct and detailed way on schemes to make this happen.

This is also the case for local authorities, who have underlined the importance of NZNs and other models, operating them in a manner that avoids creating additional liabilities for them and which ensures financial sustainability of projects for the long term.

Recommendations

The next stage of this work will be to consider these challenges in greater detail and the measures capable of addressing them, working alongside investors and local authorities around the UK. There are two actions we see as particularly important.

Firstly, **there is strong support for demonstrators** of new investment models, and in that context to pilot and demonstrate projects implementing the OBC model. Investors are keen on many aspects of the OBC, but like any model, it also raises questions that cannot be fully answered on paper. We need to provide proof of concept on the ground, dealing with the complexity of place, making the inevitable mistakes quickly, learning from them and evolving a fully viable model. **We must now work to find ways to activate this**, developing a practical checklist of considerations for investors.

The challenges to successful implementation highlight that demonstrators must be co-designed across a wide range of stakeholders from the outset, backed by Government investment. However, by bringing investors together with local authorities that have projects on the starting blocks we can begin work on now, understanding and building the investment case. Investors are keen to support this approach, developing a small number of **'pilot' demonstrators**, accelerating future implementation.

Secondly, to get investment flowing, there is an opportunity to leverage the work of the Taskforce and many others in the net zero finance space by **convening a UK-wide conversation, a Net Zero Summit**, organised with local partners and national agencies including local and national politicians.

As examples, organisations including the Green Finance Institute, UK Finance, Association of British Insurers, UK100, and RSA have recently released compelling reports that all touch on this set of issues. Alongside this activity, organisations such as the UK Infrastructure Bank have built up sectoral expertise through market engagement and working closely with Local Authorities. This reflects a shared and urgent concern, but also a well of expertise on which we should draw. The UK has an opportunity to further cohere and positively exploit work already taking place, including of course that within Whitehall and within the Devolved Administrations, without which progress cannot be made.

Finally, **there is a need for longer term commitment to delivering a programme of projects.** This will require financial and policy commitment from government to back NZNs. In practical terms, we can assist by using the lessons learned and data collected from the demonstrators to scale up the opportunity, providing investors with a sufficient scale of investible projects within a pipeline.

We will be working on developing a programme of investible projects over five-plus years, through a partnership approach including project identification, concept / pre-development, and development / implementation stages.

Next Steps

Recommended next steps therefore include the following.

1. **Activate Retrofit Demonstrators as a top priority:** 3Ci will work to create a series of demonstrators, needed to address the challenges highlighted by this Taskforce. Investors support this approach which will lead to significant additional investment into communities around the UK. Demonstrators must therefore consider enabling a Just Transition as central to financing models.

   a. **Begin work now with 'pilot' projects:** Bring the investment community, local and national government and its agencies together to co-design demonstrators, based on planned projects. This will be an opportunity for 3Ci to capitalize on the enthusiasm for this amongst investors for practical, actionable, investible projects that demonstrate our models in real-world examples.

   b. **Take a place-based approach to solving challenges, not one size fits all:** Understand the needs of different approaches, geographies and tenures, exploring challenges raised for the model including:

      - community engagement and resident buy-in;
      - investment structures, types of finance, documentation and deals appropriate to different schemes and stages of schemes;
      - managing complex risk and volatility for different sources of revenue across different geographies including energy savings; and
      - local capacity to deliver.

   This will also allow for the development of a practical checklist of considerations, and for those seeking deals to understand the requirements of **'Net Zero Investment Term Sheets'** (which will vary depending on deal structures and types of finance sought) helping partners in decision making.

2. **Convene a UK-wide conversation starting with a Net Zero Investment Summit:** with a commitment to a structured 2–3-year dialogue, steered by a collective of place leadership, investors and politicians from the Devolved Administrations as well as the UK government, alongside the many agencies delivering excellent work in this space to cohere findings and efforts. A working dialogue resulting in practical action. The Net Zero Summit will play a crucial role in streamlining diverse policy and practical efforts into a coherent strategy.

3. **Build a wider enabling environment for local net zero investment:** taking the findings of these evidence sessions and using them to progress the following:

   - reviewing regulatory and policy shifts to enable further investment;
   - further clarity of national intent for local net zero policy to establish market confidence;

- aligning other key enablers of delivery that will affect investment, including supply chain readiness, labour market skills and how to address them;
- collaborative work on technical assistance programmes, aiming for a ‘single national front door’ for those seeking support; and
- further development of Net Zero Neighbourhood forums and networks.

3Ci has made significant progress through the development of its Outline Business Case, creating an opportunity to accelerate this and other models for local net zero investment, alongside its wider work on pipeline development and technical assistance, as set out above. Our task now is to work across sectors to make this happen.

We acknowledge the Taskforce members and consultees for their participation:

- Association of British Insurers (ABI), Investment Delivery Forum
- Barclays
- Big Society Capital
- Building Societies Association (BSA)
- British Property Foundation (BPF)
- British Private Equity & Venture Capital Association (BVCA)
- City of London Corporation
- Green Finance Institute
- HSBC
- Impact Investing Institute
- Institute of Chartered Accountants in England and Wales (ICAEW)
- Legal & General (L&G)
- Local Government Association (LGA)
- Lloyds Banking Group
- NatWest
- Scottish National Investment Bank (SNIB)
- United Kingdom Infrastructure Bank (UKIB)
- UK Finance

Any conclusions drawn in this report are those of 3Ci alone.

We would welcome responses to these findings to Mariana Berganton, Strategic Programmes Manager, at the following address:

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Appendix A: Methodologies and Standards

The taskforce recommends the following standards and methodologies for the implementation of net zero retrofit projects:

Public Available Specification (PAS) 2030: This specification refers to the installation of energy efficiency measures (EEM) in existing buildings. It provides a framework for quality installation of EEM, including insulation, windows and doors, heating, lighting, and hot water systems. PAS 2030 sets out requirements for installers to ensure that energy efficiency measures are installed to a high standard, which is crucial for maximizing the effectiveness of these measures in reducing energy use and carbon emissions[11].

PAS 2035: This specification is an overarching document that provides guidance on how to conduct energy retrofits of existing buildings effectively. It covers the assessment of buildings, the identification of appropriate energy efficiency measures, and the design and specification of retrofit projects. PAS 2035 is particularly important for ensuring that retrofits are carried out in a holistic and coordinated way, considering the building as a whole, rather than just focusing on individual measures[12].

International Performance Measurement and Verification Protocol (IPMVP): The IPMVP provides a framework for quantifying the results of energy efficiency investments and retrofits. It's used globally for performance contracting and guarantees, helping to ensure that energy savings are accurately measured and verified. This is crucial for validating the effectiveness of retrofit projects and ensuring that they deliver the promised energy savings[13].

Building Performance Institute (BPI) Standards: BPI standards cover various aspects of home performance and energy efficiency retrofit work, including assessments, air sealing, insulation, HVAC systems, and more. They're widely heating, ventilation, and air conditioning (HVAC) system recognised in the field of home performance and are useful for ensuring quality and effectiveness in retrofit projects[14].

Leadership in Energy and Environmental Design (LEED): While mainly known for new construction, LEED also includes guidelines and certification processes for retrofitting existing buildings. It focuses on sustainability and efficiency in various areas like energy use, water use, indoor environmental quality, and material use[15].

11 British Standards Institution (BSI): PAS 2030
12 BSI: PAS 2035
13 Energy Valuation Organization: IPMVP
14 BPI: Current Standards
15 SRE: LEED

Appendix B: External Project References

The taskforce noted that the following projects provide insight and lessons which can be drawn on for future demonstrators.

Bristol City Leap Energy Partnership: A collaboration involving Bristol City Council, Ameresco, and Vattenfall Heat UK, planning a £1 billion investment over 20 years to upgrade Bristol's energy infrastructure. Initial projects include expanding the Heat Network, enhancing energy efficiency in schools and council housing, and supporting community renewable energy initiatives[16].

Coventry Council have agreed a UK-first strategic energy partnership with EON, to work together to develop projects to build a cleaner and more sustainable city. The partnership includes projects like a 30MW solar farm, solar power in schools, decarbonising council vehicles, and increasing electric vehicle charge points. It leverages EON's expertise and Coventry's industrial heritage to attract private investments and create jobs. The strategy aligns with Coventry's Climate Change Strategy and Net Zero Routemap[17].

Glasgow City Council are using £6.437million in funding from the Scottish Government Energy Efficient Scotland Area Based Schemes (ABS) programme for 2022/23 to deliver energy-efficient improvements in homes in Glasgow. The funding takes an area-based approach with the twin aims of tackling fuel poverty and improving energy efficiency to make Scotland's existing buildings near Zero-Carbon wherever feasible by 2045[18].

Leeds Retrofit Accelerator: This initiative by Leeds City Council and Leeds Local Combined Authority, targets creating a scalable retrofit blueprint for the 'able to pay' market. It aims to streamline processes, provide clear financing options, and establish a central coordinating entity. Focused on reducing residential emissions and generating jobs, the pilot phase will refine the model with private sector input. Key aspects include leveraging detailed housing databases, implementing targeted schemes, and using centralised coordination for enhanced customer engagement and supplier mobilisation. The project draws on lessons from a successful £4.5 million retrofit program in Holbeck, addressing the diverse housing stock of Leeds, including Victorian homes and tower blocks[19]. A novel aspect is the development of property-linked financing, attaching loans to properties rather than individuals, facilitating broader homeowner participation and investment[20].

16 Bristol City Leap Website
17 Coventry City Council and E.ON agree UK-first strategic energy partnership, Coventry.co.uk, September 2023
18 Affordable Warmth programme to bring free energy-efficiency to Glasgow homes, Glasgow.gov.uk, 2022
19 3Ci Case Study: Leeds' bundle of retrofit interventions for multi-tenure neighbourhoods
20 Local Low Carbon Accelerator, Delivering jobs and growth through local green infrastructure projects, Lloyds Banking Group, Chapter 5: Moving the dial on energy efficiency across Leeds, 2023

Sustainable Homes and Buildings Coalition Home Improvement Pilot: The Coalition, comprising NatWest, British Gas, Worcester Bosch, and Citizens Advice, upgraded nine properties across the UK. The Pilot, aiming to demonstrate the benefits of nationwide energy efficiency, highlighted key findings: consumer satisfaction despite initial disruption, the need for bespoke solutions due to varied housing stock, and the complexity of planning restrictions. The £250,000 funding pot for the upgrades was provided by coalition members. The pilot's outcomes, focusing on energy security, cost reduction, carbon emissions, and comfort, will be monitored and reported in 2024[21].

Central Somers Town Regeneration: This London-based initiative part of the Council's Community Investment Programme, focuses on community and environmental improvements. Key aspects include transitioning 550 council homes to air source heat pumps, enhancing thermal efficiency in homes, and developing a "low traffic neighbourhood" with green mobility solutions. The first phase of the project was completed in 2022, which included the improvement of 10 homes, a community play facilities, a youth club, a school and a rooftop multi-use games area. Phase 2 is under way with results to be announced[22].

Low Carbon Accelerator – Blended Finance: A collaboration led by Lloyds Banking Group, Octopus Energy, Shell, and National Grid, part of the Prime Minister's Business Council. This initiative focuses on how to fund green infrastructure projects for net zero emissions, including local transport, homes, and buildings. Projects include developing a retrofit model in Leeds for homeowner energy efficiency funding, devising finance models for zero-emission buses in Liverpool, and strategising on zero-emission vehicle infrastructure in the West Midlands with the intention of identifying key enabling elements and barriers to entry[23].

Stamp Duty Land Tax (SDLT) Recalibration for Energy Efficiency: A proposition by the UK Green Building Council, with support from various organisations, to adjust SDLT based on a home's energy efficiency, as indicated by its Energy Performance Certificate (EPC). This model, aimed at being revenue-neutral, incentivises energy-efficient home purchases by offering lower SDLT for higher EPC ratings, while higher SDLT for lower ratings encourages improvements in energy efficiency. This strategy is designed to drive energy efficiency in the UK housing market and support net zero goals[24].

London's Green Bond Scheme: Launched by Mayor Sadiq Khan, this plan mobilises over £500 million, including a £90 million commitment from the Greater London Authority, to finance net zero projects through green bonds. It focuses on making social housing and public buildings energy-efficient, supporting renewable energy projects like solar PV installations and heat pumps, and addressing fuel poverty. The initiative aims to reduce over a million tonnes of carbon emissions and save 328,638 MWh annually, equivalent to the consumption of 85,000 households[25].

Net Zero Terrace Project by Electricity North West: This project, in partnership with Buro Happold, RV Energy, Rossendale Borough Council, and Northern PowerGrid, focuses on decarbonising terraced streets using a Smart Local Energy System (SLES). The first phase of the project was delivered in April 2023. The system includes ground source heat pumps, community storage, solar PV, and local peer-to-peer Power Purchase Agreements, controlled by optimisation software. It aims to provide affordable decarbonisation solutions for terraced housing, integrating with the electricity network, reducing bills, and deferring network reinforcement. The project also emphasises community engagement through an innovative app, assessing household willingness to adapt to changes like building works[26].

Newcastle and Northern PowerGrid Low Carbon Neighbourhood: A partnership between Newcastle City Council and Northern PowerGrid, focusing on developing a Low Carbon Neighbourhood in the 228-home area of St Paul's Place. The pilot project involves collecting neighbourhood data, using laser scans for Building Information Modelling of properties, and assessing energy retrofit measures. It aims to model energy demand, integrate local renewable energy sources, and build a financing model to attract investments. As NCC zero in on the most feasible technical options for the first Low Carbon Neighbourhood, they will work on which are the most feasible, and how to deliver them, both in terms of financing and legal / contractual terms (including any potential need to modify tenancy agreements).

WMCA's Net Zero Neighbourhood in Dudley: The West Midlands Combined Authority started working with Bankers Without Boundaries and Dark Matter Labs on the first Net Zero Neighbourhood of Dudley. Through the Pioneer Places programme, WMCA is investing £1.6 million in Brockmoor, Dudley, to upgrade 50 homes for energy efficiency, with plans for broader neighbourhood enhancements including green spaces and transport links. The project, part of a larger ambition to create additional Net Zero Neighbourhoods, has secured further funding for expansion in Elmdon and Foleshill. WCMA expects that the funding model will incentivise a stream of private finance investment to continue the roll out of the concept across the region[27].

The Energiesprong Retrofit Model in Nottingham: Targeting nearly 2000 homes, offers a net zero approach with all-encompassing upgrades including prefabricated insulation and solar panels. With initial grant funding, this model seeks financial sustainability through a 'comfort plan' for utilities, which aligns costs with tenant benefits. Tenants pay an energy service plan, akin to their old energy bills, to fund these upgrades, gaining improved comfort without extra cost. Landlords benefit from this new income stream to offset renovation expenses. Retrofit costs range from £50,000 to £60,000 per home, banking on economies of scale for future cost-effectiveness[28].

The Green Deal: Continues to lend to householders for retrofitting projects in England and Wales. This is administered by the Retail Energy Code[29].

Scottish Government's Energy Saving Grants and Loans: Administered by Home Energy Scotland provide funding for energy generation, heating, draught-proofing, insulation, windows and door double glazing and energy generation for homes in Scotland[30].

The Welsh Government's grants: For home energy efficiency improvements in Wales, which are administered by Nest.

The Northern Ireland Sustainable Energy Programme fund: Collected from all Northern Ireland electricity customers through a public service obligation. Households across Northern Ireland can benefit from the Programme with funding being used for such energy efficiency schemes[31].

21 Sustainable Homes and Building Coalition delivers key findings from Home Improvement Pilots in Home is Where the Heat Is: Outcome Report, NatWest Group, September 2023

22 Camden Community Investment Programme – Annual Report 2022

23 Major firms work together to drive regional green investment – Lloyds Banking Group, November 2022

24 A housing market catalyst to drive carbon emission reductions – UK Green Building Council, April 2021

25 Mayor announces £90 million towards new green bonds, London.gov.uk, February 2022

26 Introducing Net Zero Terrace, Electricity Nort West

27 WMCA to lead national drive to accelerate Net Zero transition, WMCA, February 2023

28 Green Finance institute, Retrofitting social housing: a model for the UK, Case study 2: a route to self-sustaining finance for Energiesprong UK, October 2022

29 Retail Energy Code Website

30 What the Home Energy Scotland Grand and Loan covers and how to apply, Home Energy Scotland

31 Northern Ireland Sustainable Energy Programme, Energy Saving Trust

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