

Living Places Built Environment Investment Analysis Service

Sub-heading: Empowering local authorities and mortgage lenders with data-driven tools to accelerate green home retrofit investment.

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Partners: SkenarioLabs, Eunomia Research, Consulting Ltd

Funding received from GHFA:

- Discovery Phase: £99,241
- Pilot Phase: £887,240

Project duration:

- Pilot Phase: January 2024 – March 2025

Innovation overview

The Built Environment Investment Analysis Service, piloted by Living Places, developed two tools to provide mortgage providers and local authorities with comprehensive data insights to facilitate greater investment in green home retrofit:

1. **The mortgage provider tool supports the development of green finance products by providing modelled current state, retrofit scenarios, impacts and costs data:** Property-by-property and aggregated at mortgage book level. In addition, it enables lenders to assess their property portfolio's exposure to climate risks, such as flooding, and identify investment opportunities for risk mitigation. It is anticipated that these assessments could be used at an individual property level to link mortgages to climate action requirements for retrofit and adaptation.
2. **The local authority tool aggregates geospatial data, climate impact projections, energy efficiency metrics and costs:** To help local authorities compare and prioritise areas for Net Zero Neighbourhood (NZN)¹ planning and feasibility. The pilot revealed that most local authorities have limited capacity to

¹ The project defines a Net Zero Neighbourhood (NZN) as a set of approximately 1,000 properties, grouped together as part of a locally driven decarbonisation project, aimed at reducing domestic greenhouse gas (GHG) emissions. The tool can aggregate any number of properties selected.

directly plan NZNs, therefore the tool is now being marketed primarily to consultancies that work with local authorities.

A key innovation of both tools was integrating climate and finance data to provide novel insights and analysis for local authorities and lenders.

What were the objectives of the project?

The project aimed to develop tools that could address the lack of accessible granular data on domestic energy efficiency, to empower local authorities and mortgage lenders to do more to help decarbonise buildings.

For mortgage lenders, the tool aimed to:

- **Improve understanding of which properties in their portfolio might benefit:** Assess which properties could make use of green mortgage offers.
- **Improve understanding of the cost of climate hazards on property portfolios:** Including extreme weather events, justifying financing efforts to mitigate those climate risks.

For local authorities, the tool aimed to:

- **Improve understanding of the return on investment for individual properties:** Support them to make the case for investing private finance in neighbourhood decarbonisation.
- **Improve understanding of where to target initial NZN work:** Enable comparison between areas so that the most effective and impactful demonstration areas can be identified and promoted.

Activities funded by the Green Home Finance Accelerator

GHFA Pilot funding was used to develop the two tools, enhance usability and tailor insights to specific user needs. Whilst described as two separate tools, both were built on the same core back-end, with front-ends designed to be most appropriate to each target user group, maximising potential engagement. Funding was used to develop, test and integrate the following features:

Lender tool:

- **Portfolio segmentation:** Enables lenders to analyse climate risks at different levels (e.g., property type, location, EPC ratings, mortgage product categories)., Using the tool mortgage lenders can, for example, analyse climate risk in their mortgage book according to a specific property type.
- **Risk scoring and threshold customisation:** Enables lenders to set their own climate risk thresholds and receive property-specific information on high-risk properties.
- **Retrofit pathway modelling:** Enables lenders to adjust assumptions to model investment scenarios for different retrofit pathways and associated lending criteria. Different retrofit pathways can comprise varying levels of energy

efficiency improvements and low-carbon technology installation across a portfolio.

Local Authority tool:

- **Project area comparison:** Enables local authorities to create and edit different NZN proposals and compare them to create various delivery options.
- **Spatial data mapping:** Enables users to filter assessments by neighbourhoods, housing characteristics or socio-economic factors. This required the application of predictive modelling to evaluate assets without current Energy Performance Certificate (EPCs) and predict their energy efficiency.
- **Retrofit scenarios:** Allows specific retrofit scenarios to be applied, enables users to compare impacts of different levels of retrofit, and includes deep retrofit, electrification of heat, and solar/battery.

What did the project achieve?

The project successfully developed and tested the two tools, which are receiving positive feedback from user groups and are ready for full-scale deployment. Their achievements included:

User engagement:

- **Lender tool:** Living Places engaged five mortgage lenders in user groups who provided feedback on the Lender Tool interface and functionality. Four of these lenders rank in the top 10 lenders by mortgage book size, and one is a smaller building society. This feedback was used to refine the tool to better meet user needs. Through the Lender user group, the project directly engaged with 32% of the Lender market (based on the market share of the Lenders involved in the group). The project reported that the tool exceeded the expectations of at least half of the users engaged.
- **Local authorities:** Three local authorities (from London, the South West and the North West) participated in user groups, offering insights that helped enhance the tool's usability and effectiveness. The project reported that this was particularly important as the Local Authorities had different priorities and approaches.

Lender tool development:

- **Financed emissions analysis:** Enables lenders to assess the carbon footprint of their mortgage portfolios. All five members of the lender user group were given logins to sample an example bank portfolio and provide feedback from that testing of the emissions analysis function.
- **Climate risk assessment:** Offers tools to evaluate the impact of climate risks on mortgage assets through transitional risk analysis. Utilises a novel Automated Valuation Model developed by SkenarioLabs to estimate green dividends and

brown discounts², enabling assessment of the value of retrofit as a mitigation to financial risk.

- **Basel III compliance³:** Ensured the tool met regulatory requirements for financial reporting.

Local Authority Tool development:

- **Enhanced data visualisation:** The project reported that improved features such as heat maps and detailed charts made it easier for local authorities to interpret data.
- **Area selection mechanisms:** The project developed map interfaces that allow users to select geographic areas for analysis.
- **Socio-economic data integration:** Socio-economic data was incorporated into the tool to support strategic decision-making for decarbonisation initiatives.
- **Reorientation to consultancies:** It was recognised that local authorities are unlikely to have the capacity to work on NZNs themselves, and so it is more probable that the tool will be used by consultancies in support of local authorities, requiring a minor reorientation of the tool to these groups.

Market readiness:

- **User feedback:** Initial users have provided positive feedback, highlighting a high level of satisfaction with the tools' functionalities and ease of use.
- **Purchase intent:** While not yet sold commercially, potential users are actively seeking funding to enable purchase – demonstrating clear market interest and readiness.

Key challenges and learnings for the wider sector

- **User-centric design:** It was a challenge to ensure tools met the diverse needs of different user groups. Early and continuous stakeholder engagement was crucial for refining tool interfaces and functionalities.
- **Data integration:** Integrating disparate datasets from various sources required robust pre-processing and validation pipelines to ensure data compatibility and accuracy. This step was necessary for providing reliable analysis and insights.
- **Market development:** The nascent NZN market requires further support to help local authorities move from NZN planning to implementation, including financial

² A "green dividend" is a premium that a person may pay to purchase a highly energy efficient property. A "brown discount" is the reduction in the price that a person may be willing to pay for a property that lacks energy efficiency measures (or other green features) that a typical home may have.

³ Basel III is a set of measures which form part of the Basel Framework. The measures apply to active banks and were developed in response to the 2007-09 financial crisis and intended to increase banks' resilience. Banks are required to identify, assess, monitor and manage ESG risks as part of overall risk management practices.

and capacity-building support. This includes providing resources and training to help local authorities effectively use the tools and implement retrofit programmes.

What's next for Living Places?

Both tools are functionally ready for full-scale deployment. The Lender Tool is market-ready and able to provide underlying data for feasibility analysis (and is being used in two areas for this purpose via consulting firms). The project's research indicates that 14 local authorities are at the necessary stage of their NZN development to begin using the local authority tool. Further development would mean that intermediaries such as Living Places are not needed to interpret the data.

Living Places plans to scale up the deployment of the tools, focusing on expanding market reach and refining functionalities based on user feedback. Further iterations will incorporate dynamic policy scenario analysis and advanced risk modelling.

Where to find out more?

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