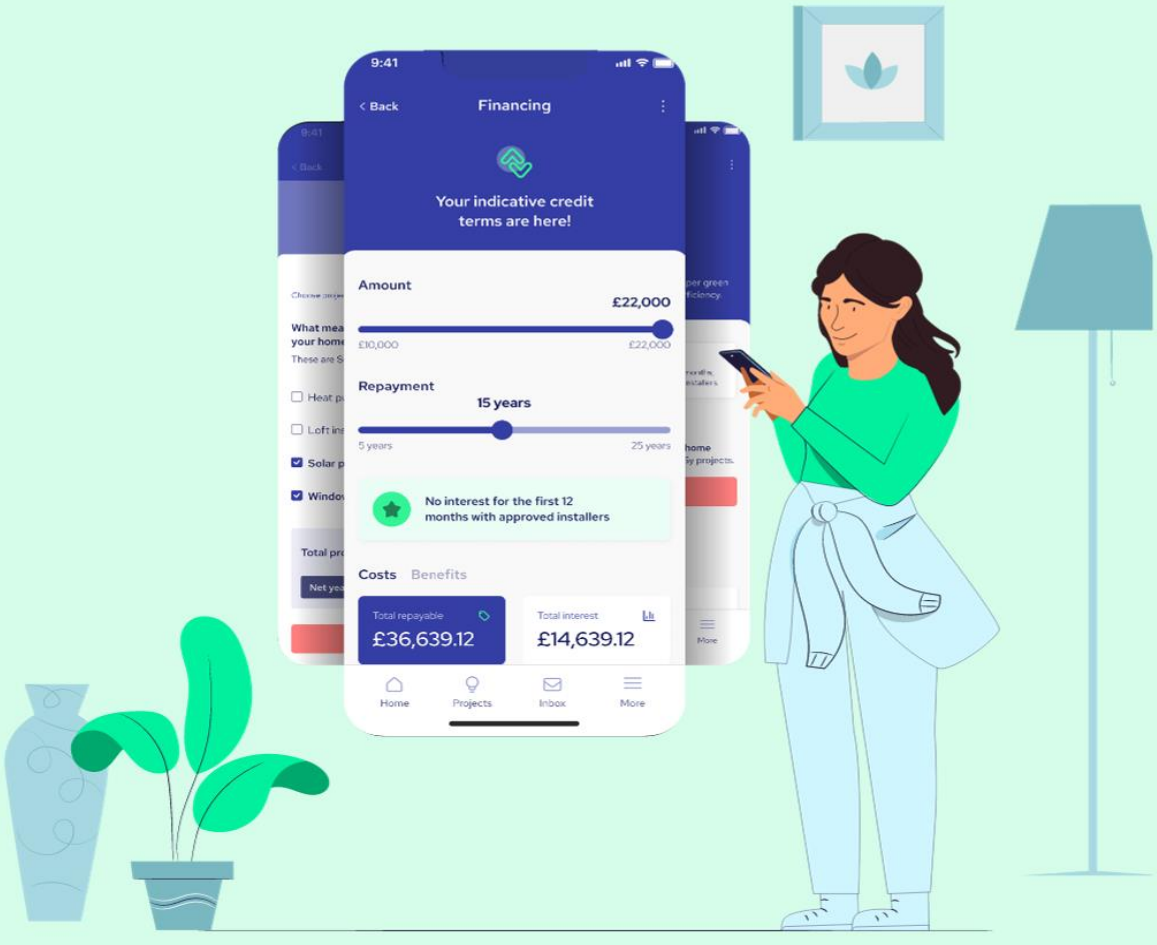
SCROLL SuSy

GLOCERS Project

Green Home Finance Accelerator

End of Discovery Phase Report

November 2023



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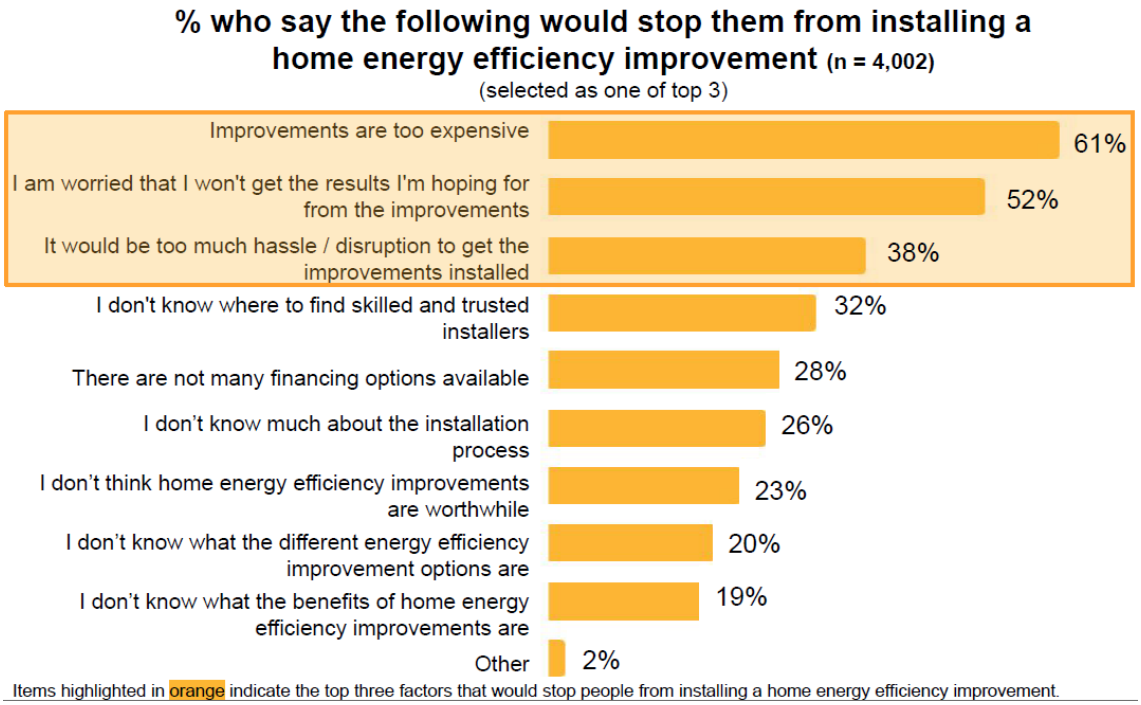
Executive Summary

1. Introduction

Today, home energy efficiency retrofits are widely perceived to have high upfront costs with long payback periods and are complex in terms of figuring out which measures to consider and which quality contractors could install suitable improvements to deliver the right outcomes. As a result, homeowners are focusing on what they can do to manage the symptoms rather than addressing the *root causes of inefficiency*. Current solutions for energy advice provide only generic suggestions on improvements, but homeowners fail to understand the underlying rationale. Homeowners are looking for guidance from trusted sources to give them a complete picture, essentially a “one-stop shop” for all their energy needs but are struggling to find trusted, credible sources. Even while considering improvements, homeowners prefer piecemeal or sequential improvements over a longer duration of time but lack the necessary finance to carry out these out, leading to deferrals or abandonment of the project altogether.

There are several financial and non-financial barriers experienced by owner occupiers and landlords ranging from high upfront costs and low confidence in energy bill savings to low awareness and lack of quality information and support on products, choices, and suppliers all of which are not being effectively addressed.



2. Project overview

Green Line of Credit Embedded in Retrofit Services (GLOCERS) is a partnership between fintech marketplace and lender Scroll Finance (Scroll) and online virtual energy consultancy Sustainable Systems (SuSy).

The project conducted research and development (R&D) over a 6-month discovery phase which led to the design and development of a novel embedded finance solution - Green Home Equity Line of Credit (Green HELOC), built specifically for energy efficiency retrofits of UK homes and delivered in an embedded fashion through partners such as SuSy.

We designed the Green HELOC in a manner that facilitates an extended period of work i.e. the facility can be used (and repaid) over time as required, particularly relevant for whole-house retrofits with sequential or multiple interventions. Other key hypotheses that were tested included: (i) pricing the Green HELOC at 0% interest rate for an initial availability period (ii) ring-fencing funds for direct payments to installers (iii) and an embedded calculator with cost-benefit dashboard integrated with partners such as SuSy, to strengthen the economic case for retrofits.

The GLOCERS project received widespread support from Low Carbon Hub, Retrofit Works, Cosy Homes Oxfordshire, Energy Capital of West Midlands Combined Authority, and the Green Finance Institute. We have aligned our approach and product design with these institutions during the course of the Discovery Phase and we hope to continue working with them to offer the Green HELOC to their customers in the next phase of the project.

The Discovery Phase lasted from April 2023 to October 2023. The consortium received approximately £158k in grant funding from the Department for Energy Security and Net Zero which contributed to an overall project cost of up to £264k.

3. Aims and objectives of the project

The primary objective of this project was to design and test the appetite for a novel green finance solution embedded in the retrofit customer journey providing consumers with the ability to:

- Explore and understand their property's current state and potential for improved energy consumption

- Receive tailored recommendations on which retrofits would have the biggest impact on energy performance and carbon footprint
- Understand impact to their property's value
- Provide access to financing which enables easy release of home equity
- Connect them to accredited installers to execute the works
- Monitor the outcomes and impacts of those retrofits to the home's energy efficiency

To this end, the project sought to research the key barriers to retrofit facing consumers today and whether the presence of an attractive finance solution such as the Green HELOC could unlock additional improvements in uptake when embedded in the existing customer journey and offered through retrofit providers such as SuSy. SuSy has a digital customer journey to assist homeowners in understanding the current energy profile of their home, recommending suitable improvements, and getting them installed by contractors. We also endeavoured to seek feedback from the retrofit supply chain and other project partners on the Green HELOC. Other objectives of the project included mapping out the smoothest possible customer journey, commission legal advice on the regulatory perimeter and product design, explore suitable advice approaches and verification measures, build machine learning models for property valuation to quantity potential uplift post-retrofit, and testing a prototype of the embedded solution within the SuSy app with homeowners to get feedback and refine the proposition further.

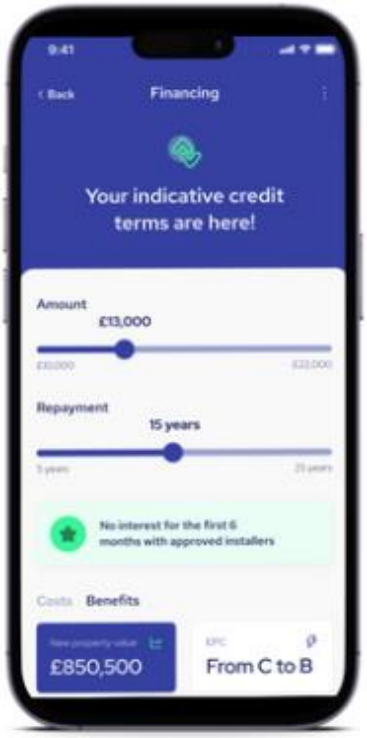
4. Key barriers and/or challenges

As a project, we overcame several barriers/challenges during the Discovery Phase. Some key challenges faced were as below:

a. **Determining the optimal product design of the Green HELOC**: The Green HELOC is a novel, first-of-its-kind finance solution for a very specific use-case. To make such a finance product successfully work, it would require 'buy-in' from a range of stakeholders. These would include consumers, retrofit partners, supply chain, investors / funders, regulators, and finance brokers / advisors, or similar. The project worked with all relevant stakeholders to design a product that met the needs of these stakeholders. This included consumer surveys and an online experiment, extensive user testing, workshops, and interviews with consortium partner SuSy and their installers / supply chain, legal counsel, and funders / investors.

Explanation of Green HELOC in the customer journey

b. **Complexity in user journey design**: While embedded finance is prevalent in industries such as eCommerce and online shopping, embedded finance for energy efficiency retrofits is a relatively novel concept and has been tried and tested in very limited cases. Retrofit projects are often complex and involve multiple parties such as the platform / contractor (in this case SuSy), assessors, retrofit coordinators, installers, designers, and many others. The project spent a considerable amount of time mapping out the most effective and user-friendly journey for consumers. We developed an embedded finance calculator within the SuSy app for consumers to check eligibility and receive quotes for retrofits they are considering through SuSy.



Mock-up of the embedded calculator

c. **Research and user testing challenges**: Through our own research, as well as existing research in the public domain[1], it is clear there are multiple barriers to retrofit. These include:

- Cost
- Knowledge/understanding of available retrofits and what would be most suitable for each home
- Perceived value/benefit
- Hassle/disruption
- Finding trustworthy installers – this is a dual problem of knowledge (knowing where to find an installer) and availability (limited numbers of installers)

SuSy aimed to create an end-to-end retrofit solution to address as many of these issues as possible. This demanded a highly complex product, which is both a technical challenge and an experience-design challenge. The end-to-end nature of the product also makes testing more challenging, as it is difficult to extract, or focus on, small

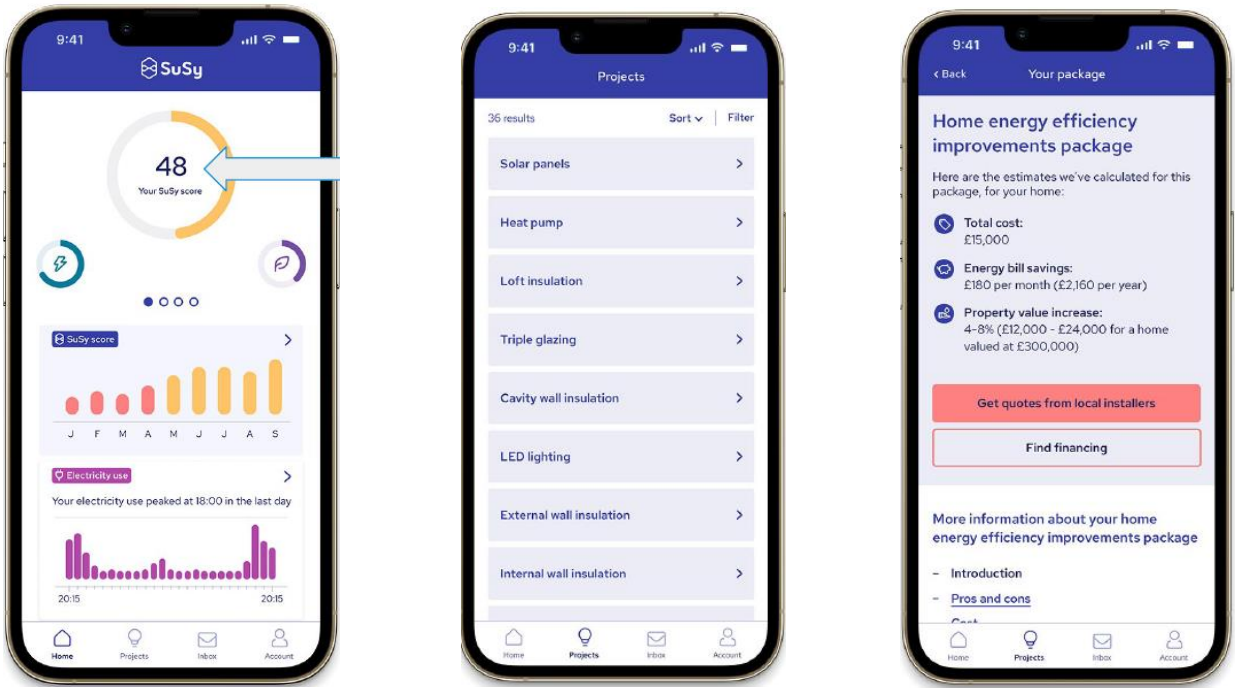
[1] Nesta Report - All the things I could do: financing green home upgrades – May 2023 (Link: All the things I could do (nesta.org.uk))

sections of the product in isolation – each feature needs to be considered in the context of the full journey. We conducted usability testing with an early prototype of the SuSy House app. Due to the early stage of development, there were numerous technical issues that meant the structure and scope of each test had to vary slightly to accommodate these issues; we were still able to obtain very useful insights from these tests. These tests were conducted in person, to allow observation of user gestures – this is more difficult to coordinate than remote tests, but we were able to recruit a small panel from the local area.

Later, we conducted user interviews with a basic digital (non-coded) prototype of the Green HELOC embedded finance feature. These were remote interviews; easier to schedule, but with slightly more technological barriers to overcome (explaining to users how to join a video call, internet connections, explaining how to screen-share and how to use the prototype). By this time, the SuSy House app was live in the app stores and participants were recruited from the pool of SuSy House users. This ensured they already had the context of the wider SuSy journey, so we could focus on the financing feature in the interview. Recruiting sufficient participants was challenging but offering a small fee for participation increased the response. The profile of SuSy House users varies and some are more likely to be suitable for retrofits and financing than others. The interviews were designed to capture some of those variables that might impact a participant's base likelihood of applying for financing, and therefore affect their responses in the interview, but in future a wider pool of participants would help to identify any of those trends or allow us to screen for the "optimum" candidate.

d. **Technical challenges for integration identified**: From a technical point of view, the project recognised several challenges for integration in the next phase relating to data collection, data analysis and data integration. Integrating the Scroll financing offer for the householder in the SuSy's end-user journey would bring a different set of technical challenges. Key challenges (and solutions prototyped) were:

- Collecting end-user data to make accurate digital twins
- Streamlining end-user profiles
- Developing a digital twin of the property as the basis for tailored retrofit projects
- Algorithms to calculate retrofit project outcomes – bespoke costs, return on investment, energy, and CO2 savings
- Presenting retrofit projects and introducing the Green HELOC solution
- Integrating SuSy data with Scroll's finance calculator



Screenshots of the SuSy app and customer journey

5. Key research findings and consumer insights

Through a combination of primary research (online survey and experiment), desktop market research, and qualitative interviews / testing, we derived insights on pain-points and barriers, needs and preferences of consumers.

a. **Online survey and experiment:** We commissioned the Behavioural Insights Team (BIT), part of Nesta, to design, run, and analyse a survey and randomised online experiment in collaboration with the project team. The experiment was run on BIT's proprietary online platform *Predictiv*. BIT recruited a sample of 4,002 homeowners to participate in the survey and experiment.

We recruited a sample of 4,002 UK homeowners who participated in the experiment

Methodology

BIT worked with Scroll and Susy to test whether a line of credit finance solution can increase uptake of retrofit, relative to more conventional options including a typical personal loan, cash savings, a government grant and other means (e.g. private loans). We ran the study on Predictiv, BIT's in-house policy testing lab. We recruited an online sample of 4,002 UK homeowners between 9 June – 30 June 2023. The sample was approximately representative of homeowners in the UK in terms of age, gender, region and ethnicity.
The sample was targeted on the basis of having a plausible way to pay for retrofits of high value, either through savings or accessing a loan. We only filtered out those who felt they would have no way of paying for retrofits even if they 'had to'. The result was a sample which was roughly 50/50 split between household income above and below £40k.

NOTE ON INTERPRETING RESULTS
1. The sample doesn't capture the digitally excluded, or people not inclined to complete online surveys.
2. Just because people say they would do something in an online experiment, this doesn't mean they always will in real life. We therefore interpret stated intent as a likely upper bound of real behaviour.
3. When we examine differences by subgroups (e.g. gender, ethnicity), we only do so when the sample size remains large enough to draw robust inferences from.

Gender	
Women	51%

Age	
18-24	12%
25-54	62%
55+	26%

EPC rating	
Good (A, B, C)	45%

Region	
South & East	29%
North	25%
Midlands	19%
Scot/NI/Wales	14%
London	13%

Household size	
Less than 3 people	44%

Household income	
< £40k	50%

Ethnicity	
White	85%
Asian	9%
Black	3%
Mixed / other	3%

Property type	
Detached	29%
Semi-detached	39%
Terrace	21%
Other	11%

Median time spent completing survey: 7m 24s
All regression analysis in this deck includes covariates: age, gender, income, country, economy concern, future time intended to live in home, type of home, number of people living in home, year home built, epc rating of home and whether participants own their home as freehold.
We also collected data from all respondents on whether they have installed home energy efficiency improvements, and whether they are a landlord.

Details of participants who were screened out of the experiment

2,447 people were screened out in total (these are mutually exclusive to the recruited sample that participated in the experiment)

BIT used the following questions to screen participants:

Which of the following describes your current living situation?

- **Homeowners** (with or without a mortgage) were allowed to **proceed** with the experiment.
- Those who **rent or live in social housing** were **screened out.**

If you needed to make energy efficiency improvements to your home costing £10,000 or more, how could you potentially pay for them?

- Those who could pay for home energy efficiency improvements with existing **savings, a loan and/or government grant** **proceeded** with the experiment.
- Those who **could not afford** to pay for home energy efficiency improvements, unless they had a grant or a subsidy covering the full cost of the improvement were **screened out.**

Gender	
Women	62%

Age	
18-24	8%
25-54	67%
55+	25%

Region	
South & East	28%
North	28%
Midlands	19%
Scot/NI/Wales	17%
London	8%

Ethnicity	
White	90%
Asian	6%
Black	2%
Mixed / other	2%

Household income	
< £40k	66%

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Sample and characteristics and details of methodology followed for the survey and experiment

Key findings from survey and experiment include:

- The Green HELOC could unlock additional retrofits: When costing £15,000, the proportion of participants opting to go ahead increased by 9% (in relative terms) when Green HELOC was offered. When costing £25,000, a bigger increase of 36% (in relative terms) is observed, showing that attractive financing is particularly important when costs are high and thus interest rates and payment terms become very significant over the full repayment period.
- Presence of the Green HELOC substantially alters financial behaviour: There is a reduced reliance on traditional methods such as personal loans and savings, and becoming the preferred option for a large proportion of people, particularly at higher financial levels
- The characteristics of the Green HELOC that were most appealing to those who chose it were: the attractive interest rate (67%), longer repayment term (60%), and low monthly repayments (59%).
- Participants indicated the benefits they find most attractive in specialist home / energy improvement loans: (i) repayments linked to energy savings (53%) (ii) No penalties for early repayment (50%) and (iii) seamless blending of the loan with grant funding (46%)

  For further reading, we have included details on initial findings from the final report issued by the BIT in the annex.

b. **User testing and qualitative interviews:** Initial usability testing focused on the SuSy House and SuSy Business apps, excluding financing. We were able to identify key themes in the feedback from these. In the SuSy House app, users needed more explanation of the overall purpose and range of features of the app, as well as details such as terminology and score methodology. The sign-up journey was relatively clear, but they wanted more guidance on the next steps. There were also specific usability issues in parts of the sign-up process and the connection to smart meters. A later survey about the SuSy House app focused on barriers to connecting with retrofit installers. The results highlighted the importance of proving to homeowners the quality of installers. It also identified an interest in connecting with retrofit experts.

   Participants in the SuSy Business usability tests encountered much fewer usability issues; this was not unexpected as it is a simpler interface with a more limited range of features. As installers, they provided feedback on what information they would require from homeowners in order to provide an estimate or quote for a retrofit. Although sign-up usability issues were not identified as part of this round of testing,

using app analytics we were later able to identify issues during sign-up via the drop-off rate.

To inform the design of the financing product, we conducted a large-scale survey of UK homeowners. With the basics of a retrofit journey and financing product designed, we combined the two into a prototype and conducted user interviews to obtain qualitative insights. Detail of background of the participants that took part in the user interviews is presented in the table below. Overall, this testing highlighted the importance of the overall financial picture (cost/benefit analysis) for users in making the decision to proceed with a retrofit and/or financing. Furthermore, users need confidence in the cost/benefit analysis; they want to understand how numbers have been sourced, calculated, or estimate – predictions of estimated energy bill savings, installation costs and property value uplift are regarded with scepticism.

Financing prototype methodology — Link to prototype

Characteristics

- 8 participants
- All homeowners, no renters
- 88% in houses, 12% in flats
- Existing retrofits:
  - 0% have a heat pump
  - 25% have solar
  - 63% have over 150mm loft insulation
  - 75% have double or triple glazing
- Age range c. 30–65

Recruitment

- Participants were recruited from the user base of the SuSy House app – open invitation sent to all users.
- SuSy users were chosen because they were expected to have some familiarity with the SuSy app. This avoided needing to explain too much context and allowed the focus to be on the financing aspect.
- Some participants were known to the SuSy team. They were encouraged to be open and honest with their feedback.

c. **Interviews with installers and supply chain:** Our research of the verification process to analyse the supply chain's service offerings to the homeowner, and the quality of services delivered such as post-retrofit energy performance improvements showed that two different processes have to be developed. Our prototype found that:
   - Verification processes will run through the SuSy platform and will analyse the results coming after an installation occurs.
   - The Susy app will be vetting the installers/subcontractor before they apply for retrofit jobs within the platform.

- Two different verification processes will be developed further, prototyped and tested in the Susy platform, during the Green Home Finance Accelerator Pilot Phase:
    - Supply chain verification:
        - Vetting system
        - Documentation
        - Approval
        - Ongoing checking
    - Energy efficiency verification:
        - Online metering (smart meters)
        - Offline metering (manual readings)
        - Plotting, comparing, and analysing patterns of energy consumption and CO2 emissions
        - Algorithms (to support analysis) - Susy Green Score recalculated/updated
        - Performance reporting (Green retrofit(s) applied, Score reported, Energy consumption comparison (before/after) reported

These enhancements to our verification process will bring certainty and assurance to users of our solution as they will have a better view of their improved energy consumption post installation. It will also help validate the quality of the installation and ensure it is meeting the necessary quality standards. With all of this, the more data we collect will improve the user experience and accuracy of our model.

SuSy app usability testing: methodology Link to apps

Householders:

- 5 homeowners, 2 renters
- Age range 18–65 (86% over 30)
- 43% houses, 57% flats
- Building age:
  - 57% 1900 and earlier
  - 14% 1950s
  - 14% 1980s
  - 14% 2000s

Businesses:

- 4 retrofit installers:
  - 2 install loft insulation
  - 1 installs windows
  - 1 installs heat pumps

All participants in this stage of research were known to someone in the SuSy business, as business or personal contacts. Participants were not known to the researcher and were briefed to provide open and honest feedback.

6. Key process learnings

The size of the pool of user testing participants was a challenge and limiting factor in some of the research activities conducted in the Discovery Phase. Going forward, we would factor this into the timeline and budget for a discovery project, allowing more time for recruitment and a larger budget for incentivising participation. We would consider paid research panels to supplement the existing user base for moderated testing.

One key learning was the need to fully understand and map out the customer journey, which is complex. Significant time was spent to fully learning the process that a user would undertake in order to take the right steps, at the right time, to benefit from successful and appropriate retrofit measures. This then enabled us to identify where the Green HELOC solution could be embedded and signposted to the consumer. This also needed to be designed in conjunction with the legal and regulatory advice to ensure we meet requirements under applicable Financial Conduct Authority (FCA) and Mortgage conduct of business regulations.

Another important learning was about the energy monitoring process. Despite the overall understanding that smart meters provide real-time online energy monitoring, technical issues are more common than expected. Many households are in areas where data connection is not available, or intermittent flaws occur due to data problems and telecommunications companies are not able to improve that. Due to this kind of problem

and the importance of energy data analysis for the verification process, we are developing new models and algorithms which consider statistical analysis and comparison results to predict energy patterns (comparing similar properties and comparing historical data).

7. Reflections on key outcomes achieved

As evidenced through our research, GLOCERS solution has the ability to unlock significant additional retrofit improvements in the next phase of the project and in years to come. We have made considerable strides during the Discovery Phase in establishing the evidence basis for incentivising uptake of energy efficiency and low carbon heating measures using an attractive and affordable green finance product.

On reflection, below are some significant outcomes achieved during the Discovery Phase:

a. **Successful online research experiment with 4,000 UK homeowners/landlords**: The project commissioned the Behavioural Insights Team to recruit a panel of 4,000+ UK homeowners and landlords and ran a detailed online survey and experiment to test, among other things, how the introduction of the Green HELOC could affect intent to install energy efficiency improvements. BIT concluded the Green HELOC was viewed by participants as an attractive financing option for retrofit and its presence substantially altered financial behaviour, reducing the reliance on traditional methods such as personal loans and savings, and becoming the preferred option for a large proportion of people, particularly at higher financial levels. BIT arrived at this conclusion based on the proportion of participants across the different legs of the experiment that opted to use other financial products offered over the Green HELOC to finance energy efficiency improvements to their home. When the Green HELOC was not offered, 38% of people chose a personal loan to finance the £15,000 improvements, and 39% chose a personal loan to finance the £25,000 improvements. When the Green HELOC was offered as well as the personal loan, 44% of people chose the Green HELOC to finance the £15,000 improvements (17% chose the personal loan), and 49% chose the Green HELOC to finance the £25,000 improvements (16% chose the personal loan).

b. **Development and testing of the embedded finance solution and calculator within the SuSy app**: Using initial research findings from the BIT study and numerous workshops on determining the customer journey, the project successfully designed and tested a prototype of the Green HELOC embedded within the SuSy app journey. Insights from the user interviews will inform the refinement of the financing product and its integration with platforms such as SuSy. In the next phase, we will refine how it sits within the overall retrofit journey, as well as exploring how to increase confidence in

cost/benefit analysis, possibly by integrating with trusted sources such as Rightmove and Royal Institution of Chartered Surveyors (RICS).

c. **Key partnerships established**: Involvement in the Green Home Finance Accelerator and this project has enabled both Scroll and SuSy to establish relationships with a range of market participants. Scroll formalised its partnerships for the next phase of the project with Low Carbon Hub, the Green Finance Institute, Energy Capital (part of West Midlands Combined Authority) and retrofit delivery partners Furbnow and Cosy Homes Oxfordshire. SuSy formalised partnerships with a number of contractors/installers in the supply chain in the Bristol area as well as with Bristol City Leap, an innovative partnership between Bristol City Council and Ameresco Ltd which is aimed at accelerating green energy investment in Bristol. As a project, we aim to develop all the partnerships listed above as the project moves to the next phase. The Green Finance Institute, Energy Capital, and Bristol City Leap will provide knowledge, policy, networking, and marketing/consumer engaged related support while Furbnow and Cosy Homes Oxfordshire will act as delivery partners in the next phase of the project.

d. **Legal and regulatory innovations**: The project commissioned legal and regulatory advice covering all aspects of product design, customer journey, and delivery. Of particular focus was advice on the regulatory framework and FCA permission status required for the various project supply chain partners. In that context we have designed a compliant customer journey which limits the regulatory perimeter to SuSy (and similar delivery partners) and exempts the various retrofit installers/supply chain from holding any FCA permissions or requiring them to become agents or representatives of a regulated entity. This was a key design decision and regulatory innovation that was devised in order to build a scalable solution.

e. **SuSy app development**: As a result of the usability testing, we overhauled the onboarding process of the SuSy House app. This included highlighting key features, providing an app tour to new users and adding tooltips to explain key terms within the app. Other improvements have been added to our roadmap to address the issues during sign-up and smart meter connection. Where smart meters are not available, SuSy´s algorithms will use energy manual readings and employ regression analysis, a machine learning technique, to predict energy performance. A key area of focus going forward will be in building the installer database and ensuring/proving the trustworthiness of installers in our network. We are connecting to Which? and Trustmark to explore possible future partnerships. To meet the needs of our SuSy Business users, as identified in usability testing, we have updated the estimate forms

in the SuSy House app. This means SuSy Business users will receive richer, more relevant information about homes, so they are able to provide an accurate estimate or quote. Due to complexities identified with quoting for heat pumps, we have modified the process for that retrofit option specifically, as installers felt it would be impossible for the estimate process to be fully digital. We are exploring a more ambitious technical solution for this, for future implementation. Ongoing engagement with installers will be key to designing a product that is useful to them and accurate for homeowners. The sign-up process has also been redesigned for SuSy Business users. We are now able to better identify and support any issues during the sign-up process but, in fact, since implementing the new journey, the drop-off rate has dropped to 0%.

Evidence Report

1. Product Introduction

1.1. Problem and solution

Identifying the problem:

The overarching aim of Green Line of Credit Embedded in Retrofit Services (GLOCERS) was to address the key barriers to retrofit faced by consumers and the wider energy efficiency market by demonstrating different ways consumers may be stimulated to undertake upgrades and how green finance providers can integrate their offerings into existing retrofit journeys. At the start of the Discovery Phase, the project commissioned independent research through the Behavioural Insights Team (BIT) to investigate barriers faced by consumers and quantify the problem that the project aims to solve. Research findings indicated that financial and cost barriers remain the largest deterrent for homeowners with 61% citing this as the top reason preventing them from pursuing improvements. Other barriers which were preventing homeowners included uncertainty on outcomes (52%), disruption and hassle involved during retrofit (38%), access to quality installers (32%), and lack of suitable finance options (28%). This strongly suggested that a “one-stop shop” or “embedded” approach that brought together consumer advice, finance, installation, and verification was desired by consumers to meet their needs.

Designing the proposed solution:

To address the problem, we designed an affordable and flexible finance product green home equity line of credit (Green HELOC) which is embedded in the customer journey of Scroll’s retrofit partners (such as SuSy). The Green HELOC is a loan with an initial revolving facility secured through a second mortgage on the property. A variation of our standard HELOC product for homeowners, the Green HELOC would serve as a flexible and secured financing option for homeowners to meet the upfront costs of retrofits.

Salient features of the Green HELOC:

- An approved credit limit secured against the homeowner’s available home equity
- Drawdown from your line of credit only when needed and save on interest
- 0% interest for up to 12 months, available for approved installers only. Interest

rates, based on current market conditions, of approximately 8-9% will apply after the initial period

- Embedded finance solution made available in existing customer journeys of Scroll's retrofit partners
- After the initial period, the Green HELOC converts into a long-term secured loan for a term of up to 25 years. Customers can flexibly pick a preferred term between 3-25 years
- Given the secured nature of the financing solution, monthly payments are lower and more affordable compared to other financing products
- Designed in accordance with the Green Finance Institute's Green Home Finance Principles (GHFP)
- Funds are ring fenced to our approved installers, where customers only pay interest on drawn funds. This feature facilitates an extended period of work i.e. the facility can be used (and repaid) over time as required, particularly relevant for whole house retrofits with sequential or multiple interventions
- Digital customer journey, and an integrated cost benefit analysis to help demonstrate the economic case for retrofits to homeowners by comparing total cost of retrofit (with financing) against energy bill savings, uplift in property value, payback period, and other non-financial metrics such as change in energy performance certificate (EPC) rating, carbon emissions reduction, and a warmer and more comfortable home. Scroll will also guide customers to get lower the cost of their existing mortgage by suggesting switching to a 'green' mortgage offered by their lender on account of the property's improved EPC rating

The Green HELOC can be used for any energy efficiency, low carbon heating and/or micro-generation measures whether single or multiple intervention, however, it works particularly well for extended periods of work when there are multiple sequential measures planned in the case of 'whole house' or 'deep' retrofits.

GLOCERS is initially targeted at owner-occupiers and private Buy-to-Let landlords with a mortgage. As per Office for National Statistics (ONS), there are 15.8 million owner occupied homes of which 26% are mortgaged[2]. There are 4.9 million private rented homes in the UK and the English Private Landlord Survey indicated[3] over 57% of landlords had a Buy-to-Let mortgage for their rental properties, suggesting approximately 2.8 million private rented homes are mortgaged, to arrive at the overall

[2] Subnational estimates of dwellings and households by tenure, England - Office for National Statistics (ons.gov.uk)
[3] English Private Landlord Survey 2021: Main report (publishing.service.gov.uk)

target market of GLOCERS at 9.3 million homes. GLOCERS will actively target homes with an EPC 'D' and below. As per Savills[4], there are c.5m properties with EPC 'D' and below. At an assumed average retrofit cost of £15,000-£25,000, the total addressable market lies between £75bn to £125bn in terms of project value / lending volumes.

This represents a significant market for us to initially target and given our loan is a second mortgage on the property it would make sense for us to target this segment.

In the future, GLOCERS could expand its target segment to unencumbered or un-mortgaged properties (9.3 million homes and ~60% below EPC D) by changing its loan criteria to include unencumbered properties as security, however that would require additional work such as an enhanced underwriting criteria and lending policy for such borrowers.

An embedded finance calculator developed by Scroll will be inserted into existing user journeys of our GLOCERS partners. Users can check eligibility, receive Green HELOC quotes, and interact with the cost-benefit dashboard tailored to the customer's property and profile. The calculator includes product FAQs and links to Scroll's portal to complete the application and access the Green HELOC facility. Since it is embedded in the existing journey of our partners, customers would have access to all the information, advice, and verification services offered by our partners.

By designing this embedded journey, we are adopting a digital-first approach however based on our learnings and feedback, primarily based on user interviews and inputs from the BIT survey, from the Discovery Phase, we have included human touchpoints whether that's financial advice from a qualified mortgage advisor or the availability of a retrofit advisor/expert from our partners. Our offering has evolved from a digital-only to an omnichannel service.

1.2. Product Innovation

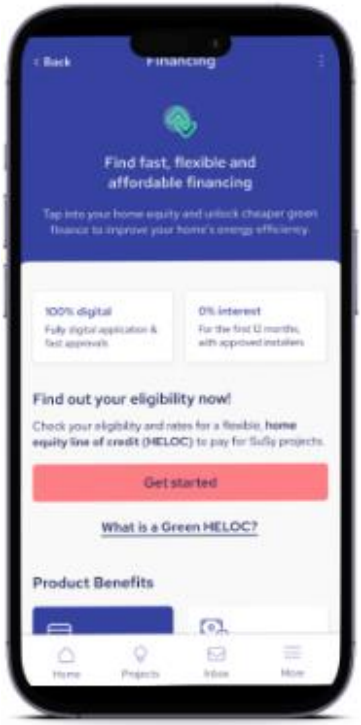
Based on research conducted during the Discovery Phase we believe the GLOCERS solution can help incentivise and address the various consumers barriers preventing uptake of energy efficiency retrofit due to the following reasons:

a. **Digital advice backed up by expert human advice:** Initial energy advice delivered digitally allows the solution to scale and tailor the service for specific customer

[4] spotlight---real-estate-and-the-carbon-challenge.pdf (savills.co.uk)

segments, geographies, and property types. It serves as a lighter-touch approach to begin with, allowing customers to interact digitally and understand what retrofit measures their property could be eligible for and what impact it has on their energy consumption and carbon emissions reduction. Consortium partner SuSy utilises a blend of public and proprietary data, including smart meter readings, to create a "digital twin" of the property. Applying virtual retrofits, users receive free advice on potential upgrades and estimated costs. SuSy extends its support further by offering phone consultations and site surveys with expert retrofit advisors. These consultations with retrofit advisors/experts are made available for a small fee. User testing interviews with 10 homeowners helped validate and refine this approach. To address initial barriers such as awareness and uncertainty of outcomes, we will also digitally signpost links to credible sources such as GOV.UK / Energy Savings Trust during the journey to build trust and engagement.

b. **Embedded finance journey**: Currently, retrofit and finance are two disjointed journeys that run in their own separate way. Our embedded customer journey design would allow customers to seamlessly access finance at every step through the journey whether that's while researching, reviewing installer quotes, or deciding on which measures to install. By inserting tools such as calculators that help customers check eligibility and receive quotes, they have the necessary financial information at hand to make an informed choice. By integrating financing in the retrofit journey and tying it to the project, homeowners can better understand the 'real' impact of measures and financing on the property. This hypothesis was validated in the qualitative interviews / user testing sessions with homeowners.

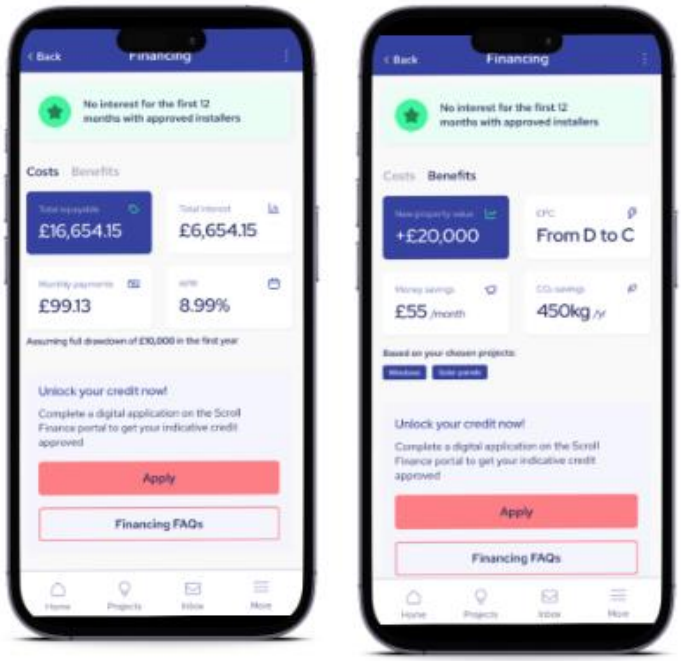


c. **Flexible nature of the Green HELOC**: The Green HELOC has a revolving facility for an initial period providing customers the freedom and flexibility akin to an overdraft or credit card. It works particularly well for sequential measures planned over a longer period of time i.e. 12 months or similar where customers can flexibly draw and repay against their approved credit limit. Approximately 38% of consumers in the BIT research indicated having the ability to flexibly use the finance facility as a reason for picking Scroll's Green HELOC.

d. **Promotional 0% pricing and enhanced affordability**: During the Discovery Phase, Scroll devised a 0% finance offer for the initial availability period of up to 12 months to incentivise uptake of the Green HELOC for funding energy efficiency retrofits. We tested this during the online research experiment conducted with BIT and over 67% of the sample (n = 744 out of 1,923 people who saw Scroll's offer) chose this as their top reason for picking the Green HELOC. More than 44% of the sample liked the fact no payments were required during this initial period.

e. **Cost-benefit analysis**: For a vast majority of homeowners, the decision to retrofit is a financial one with 61% of participants in BIT's online experiment citing it as the top reason preventing them from installing energy efficiency improvements. Our research indicated that homeowners are looking for the 'full financial picture' and want to weigh

costs of retrofit versus benefits to make an informed financial decision. We designed a cost-benefit dashboard to give homeowners exactly this information. Integrated with our partners data, Scroll presents homeowners with an interactive dashboard where they can weigh costs for retrofit and financing against benefits such as energy bill savings, uplift in property value, carbon emissions, and other non-financial benefits such as improvement in EPC rating, and a warmer and more comfortable home.



Embedded finance calculator and cost-benefit dashboard mock-ups

f. **Focus on quality assurance and good outcomes**: 52% of participants in our research indicated they are worried that they won't get the results they are hoping for from a retrofit. GLOCERS has taken a conscious decision to work only with Trustmark and MCS accredited installers to ensure the right quality standards and procedures are being followed during the retrofit process. Our solution will signpost the relevant accreditations such as Trustmark and/or to consumers during the journey to assuage any fears around quality standards of the contractor in question. We are also considering other accreditation / consumer protection schemes such as Home Insulation and Energy Systems Consumer Code (HIES), Renewable Energy Consumer Code (RECC), and Energy Performance Validation Scheme (EPVS) to reduce risk and ensure good outcomes are being delivered.

g. **Estimating the uplift in property value from energy efficiency improvement projects**: Scroll analysed some of the existing research[5] related to this, built a desktop property valuation model to estimate this and concluded the next steps to build a concrete model for this purpose. While existing research unambiguously points to a material property value uplift from such projects, we concluded that the lack of specificity of such research and an inability to validate findings independently would prevent Scroll from using these. Our own desktop models performed well for general property valuation but require significantly better data for this specific task. As a next step, we will focus on collecting better data to improve the models and make them usable for this purpose.

[5] Research cited - Sustainability Insights Research: Building Energy Regulations And The Potential Impact On European RMBS (spglobal.com), Better_Home,_Cooler_Planet_Report.pdf (wwf.org.uk), Rightmove Greener Homes Report 2023 | Rightmove Guides, and Energy Performance Improvements That Add the Most Value - the Bricks&Logic Green AVM (bricksandlogic.co.uk)

2. General scoping research and other activities

2.1. Product innovation

The project team adopted a multi-pronged approach to conduct primary/secondary research and obtain customer insights:

a. **Primary quantitative research consisting of a blended customer survey and online experiment:** We commissioned the Behavioural Insights Team (BIT), part of Nesta, to explore a range of research questions:

- Intentions to use Scroll's Green HELOC to finance improvements versus other finance options
- Whether Scroll's offer 'unlocks' retrofits that otherwise would not have been funded
- People's intentions towards, and barriers in the way of, undergoing retrofits under a range of retrofit price scenarios
- Ways to optimise the financial and non-financial aspects of the offer (within the SuSy journey) to maximise uptake

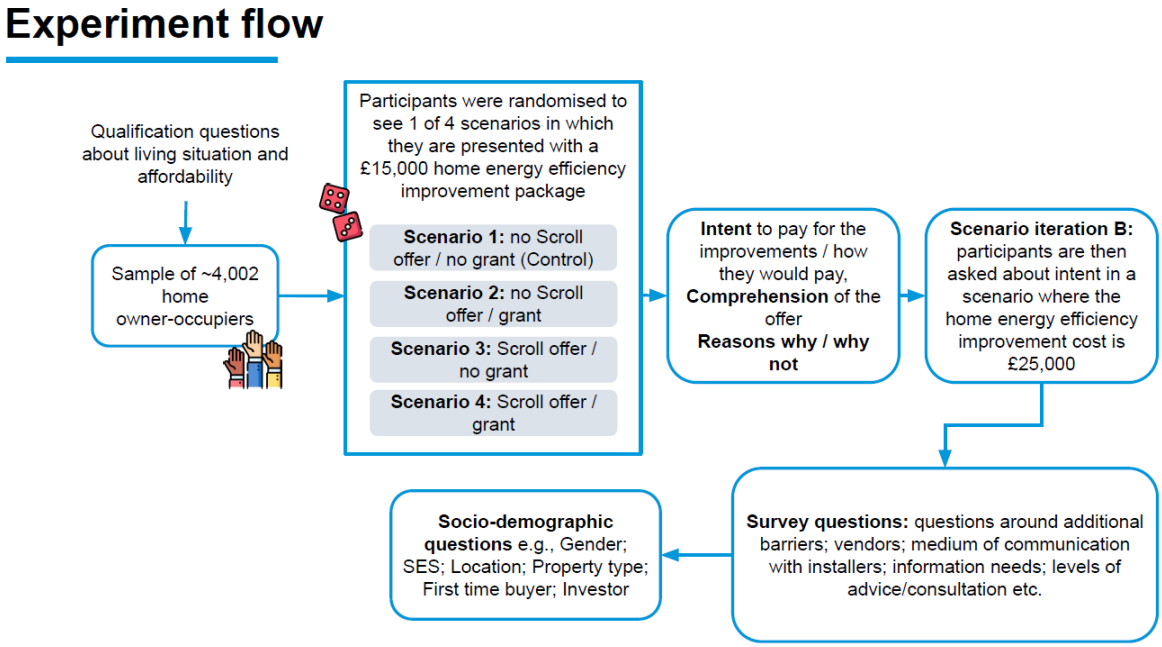
BIT in collaboration with the GLOCERS project team designed, ran, and analysed this survey and randomised experiment which was run on BIT's proprietary online platform *Predictiv*.

In collaboration with BIT we adopted the following methodology for designing the consumer survey and experiment:

- A large sample (thousands) of members of the public was recruited, nationally representative on age, gender, region, income, and ethnicity
- This sample was filtered further with screening questions: (i) those living on rent or in social housing (ii) those who could not afford to pay for energy efficiency improvements, unless they had a grant or a subsidy covering the full cost of the improvement.
- Participants were presented with a range of stimuli, scenarios and questions including surveys and experiments. In the latter, we randomly assigned participants to one of four 'arms' (where each 'arm' was invited to consider a different scenario / shown different stimuli) - Participants were randomised to see 1 of 4 scenarios in which they are presented with a £15,000 home energy efficiency improvement package. Each participant was only shown one

scenario from the experiment based on which they answered a series of questions.

- After exposure to the scenario's materials, we measured a range of outcomes including intent to pay for the improvements / how they would pay; and comprehension of the offer.
- We then presented a second scenario where participants were asked about intent in a scenario where the home energy efficiency improvement cost was higher (£25,000).
- This was followed by survey questions: questions around additional barriers; vendors; medium of communication with installers; information needs; levels of advice/consultation etc.
- Lastly, we posed certain socio-demographic questions for segmentation purposes e.g., Gender; SES; Location; Property type; First time buyer; Investor.



BIT experiment flow

b. Desktop research: We carried out focused desktop research using published reports, market data, and papers issued by credible / competent private and public bodies such as the Office of National Statistics, Green Finance Institute, Savills, Rightmove, and similar. Key areas of desktop research included:

- Market size figures and segmentation
- Competitor benchmarking

- References and other similar models for designing the customer journey
- Geographic and demographic information of pilot locations
- Relevant accreditation and consumer protection schemes / bodies

The desktop research helped inform our experiment design, subsequent product design, and inputted into our marketing strategy for the next phase of the project.

c. **Qualitative interviews and user testing:** We recruited a panel of 10 homeowners based in Bristol (including some existing users of the SuSy app) to follow-up on the BIT research, conduct qualitative research, and testing the GLOCERS embedded finance customer journey. Below is the approach adopted for the qualitative interviews:
   - Screening criteria:
     - Owner occupier homeowners - Tenants, social housing residents, and landlords were screened out (owner occupiers that are also landlords were accepted)
     - Living in houses - Screen-out participants living in flats
     - Have an existing mortgage on the property
     - Existing SuSy app users – preferred
     - Living in older homes - no new-builds, ideally pre-1970
     - EPC rating of D and below
   - A script was prepared, outlining introductory questions, a task (running through a user journey), and wrap-up questions
   - Before starting, participants were checked for familiarity with the SuSy app and journey
   - Using the insights from the BIT research and desktop research, we developed a Figma design prototype of the embedded journey within the SuSy app. Participants were asked to walk through the user journey by putting up the prototype on their own screens and talk through the different steps in the journey and at all times commenting on general feedback, usability, issues, things they like/dislike, and recommendations.

Additionally, SuSy held discussions and interviews with c.30 supply chain partners and installers which yielded positive results. SuSy's installer partners expressed enthusiasm for the product, citing benefits such as higher conversion rates, enhanced affordability for consumers, and larger projects. Installers cited that GLOCERS will help address key barriers they are facing such as affordability, time taken to educate homeowners, and finding sufficient and qualified labour.

d. **Legal and regulatory advice:** We commissioned Osborne Clarke (OC) to opine on the legal and regulatory elements of the project. OC's legal opinion primarily covered:
   - Proposed product design
   - Regulatory perimeter of the solution and related considerations
   - Customer journey
   - Working with introducer partners such as SuSy
   - Financial promotions and marketing
   - OC also drafted the suite of product documents that were required for issuing the Green HELOC to customers

Based on the various research activities, we were able to confirm and validate certain hypotheses on the product design and embedded customer journey (see Section 1.2 for more detail). Feedback and insights have helped evolve these considerably including the commercial model post discussions with the supply chain. We have refined and improved the prototype based on the qualitative interviews and received additional feedback for consideration in the next phase. The BIT study helped confirm our hypotheses that the Green HELOC could unlock additional improvements and could be viewed as an attractive financing solution for retrofit.

2.2. Benchmarking against existing competitive solutions available in the market

Based on desktop research we scanned the market for existing solutions that could compete with our proposed solution. We also leveraged the expertise and market intelligence held by various project team members. We concluded there are currently very few solutions that exist today directly competitive to GLOCERS where finance (especially secured finance) is truly embedded in the retrofit customer journey, making the customer feel as if it is one holistic offering. Whilst embedded finance exists in eCommerce and online shopping, these are typically are buy now pay later products for low-value purchases.

Boxt has an embedded proposition but is focused on lower-ticket, single intervention projects like boiler replacements or Solar PV. The finance on offer is an unsecured loan to consumers with relatively high APR (Annual Percentage Rate) of c12%+ and is short-term (12-120 months), the upshot being that they are generally less affordable relative to long-term secured finance.

A review of the decarbonisation market has indicated the presence of several decarbonisation apps (Heero, Loop Energy, Nuable, etc.). These solutions are complex

in scope, require ongoing, detailed input, hindering user engagement or are not specifically focused on promoting retrofit.

We also recognise there are a number of “One-stop shops” in the market. While many of these are no doubt innovative and essential for overall market development, we believe these models are less scalable and are restricted to specific geographies / customer segments. One-stop shops merely provide links to different services whether that’s installers or to finance. They are not properly embedded into a seamless customer journey.

Other potentially competing financing products that may be used for retrofit include:

- Cash out remortgage / further advance: These products are often suitable from an affordability perspective, but they have increasingly complex lending journeys and are not offered / integrated with trusted retrofit installers
- Unsecured loans: If available for the amounts required for the typical retrofit use cases (unlikely in our view), this would be much more expensive relative to secured lending (15% APR versus 89% for the Green HELOC). Bridging loans as with unsecured lending, this would be more expensive and short term in nature than a traditional mortgage product and could take a long time to secure.

None of the above financial options are integrated with retrofit partners and available at the time of decision making. By embedding the Green HELOC into existing customer journeys of our partners, we are essentially making financing an enabler to facilitate retrofit. Other advantages include flexibility and cost effectiveness by offering a promotional 0% interest during the first 6 or 12 months.

2.3. Research findings on consumer attitudes, trigger points, and consumer behaviour

In our consumer research, we delved into the core aspects of consumer attitudes, trigger points, and behaviour concerning the Green HELOC for energy efficiency improvements. Research, conducted through an online experiment and survey in collaboration with BIT, qualitative interviews, and surveys for the SuSy.House app provided valuable insights into the impact of Green HELOC on consumer decision-making. A summary of our consumer research findings across the various research areas is presented below:

a. **BIT online experiment and survey:** The online experiment conducted with BIT was aimed at testing how the introduction of the Green HELOC could affect intent to install energy efficiency improvements (retrofits). Below are the key findings:
   - The Green HELOC could unlock additional retrofits: When costing £15,000, the proportion of participants opting to go ahead increased by 9% (in relative terms) when Green HELOC was offered. When costing £25,000, a bigger increase of 36% (in relative terms) is observed, showing that attractive financing is particularly important when costs are high and thus interest rates and payment terms become very significant over the full repayment period
   - The presence of the Green HELOC substantially alters financial behaviour: There is a reduced reliance on traditional methods such as personal loans and savings, and becoming the preferred option for a large proportion of people, particularly at higher financial levels
     - When Scroll's offer was not present, 38% of people chose the personal loan to finance the £15,000 improvements, and 39% chose the personal loan to finance the £25,000 improvements.
     - When Scroll's offer was present as well as the personal loan, 44% of people chose Scroll to finance the £15,000 retrofits (17% chose the personal loan), and 49% chose Scroll to finance the £25,000 retrofits (16% chose the personal loan)
   - From these findings, it can be inferred that a significant portion of consumers exhibit a higher level of financial literacy than commonly assumed. They demonstrate the ability to choose a financial product based on its merits rather than opting for a more familiar product. The characteristics of the Green HELOC that were most appealing to those who chose it were: the attractive interest rate (67%), longer repayment term (60%), and low monthly repayments (59%)
     - Those who opted for the personal loan indicated that they would be more inclined to select Scroll's offer if it provided an even lower interest rate (50.5%), lower monthly repayments (43.5%), an option to be unsecured against assets (42%), and additional cashback or rewards (40.5%)
   - Almost a third of participants would pay for the improvements using their savings, primarily to avoid paying interest, as well as having a general dislike of borrowing money
   - Improvements being too expensive, not being a priority, or that better grants may yet become available, were the top reasons why people would not install retrofits (16% of sample)
   - Participants indicated the benefits they find most attractive in specialist home /

energy improvement loans: (i) repayments linked to energy savings (53%) (ii) no penalties for early repayment (50%) and (iii) seamless blending of the loan with grant funding (46%)

For further reading, we have included details on initial findings from the final report issued by the BIT in the annex.

b. **Qualitative interviews / user testing:** The users we interviewed had different attitudes towards financing in general. At one end of the scale certain users prefer to use financing wherever possible, whereas others prefer to avoid any kind of debt and rather pay from savings. However, even with users hesitant towards financing, the consensus was that it would depend on the interest rate; participants were open to considering the full financial picture. In a time of economic uncertainty, participants valued flexibility in financing: 0% interest for the first year, no early repayment charges and a flexible line of credit appealed to those interviewed. For participants who were interested in retrofits, willingness to proceed may be triggered by a reduction in inflation and interest rates; there was a reluctance to take any financing product while interest rates are perceived to be universally high.

   Although the entirely digital nature of the financing application appealed to most participants, users frequently highlighted that they would like the option to speak to a "real person". A future solution would undoubtedly provide more information about the details of the financial product, but users may prefer the reassurance of speaking to someone and a chance to discuss the intricacies of the product.

   Due to the amounts of money involved, all participants indicated that this is a decision they would want to research further and think over. Participants questioned how the product offered would compare to other options on the market; they would likely research and compare alternatives.

c. **SuSy House user survey:** The SuSy House app aims to address some of the advice and support needs of customers considering retrofit financing. In addition to the information and tools available on the app, the survey identified that users would find connection to a retrofit expert useful. Below are key findings from the survey:
   - 71% wanted clearer explanations and a clearer journey through the app
   - Bespoke-ness of estimates/recommendations was important – differing trust in whether the app already did that
   - 29% felt the app should better support people who have made upgrades

already – show savings so far
- Usability/technical issues identified with sign up and smart meter connection
- Improve onboarding process to make journey clearer
- Consider how to make information more bespoke and help users feel that it's accurate
- Consider how to celebrate users who have made improvements
- Address issues with sign up and metering

The survey findings underscore the importance of refining the SuSy app to reflect user feedback and we are taking onboard these suggestions in our development backlog. We believe the upcoming enhancements in our backlog will help address user concerns, enhance usability and user engagement, and provide a more personalized and supportive experience for individuals considering retrofits.

2.4. Research findings on scope and size of the market and a typical user profile

Based on additional desktop market research carried out, we decided to target owner-occupiers and private landlords with a mortgage. As per ONS[6], there are 15.8 million owner-occupied homes of which 26% are mortgaged. There are 4.9 million private-rented homes in the UK and the English Private Landlord Survey[7] indicated over 57% of landlords had a Buy-to-Let mortgage for their rental properties, suggesting approximately 2.8 million private-rented homes are mortgaged, to arrive at the overall target market of GLOCERS at 9.3 million homes.

GLOCERS will actively target homes with an EPC 'D' and below. As per Savills[8], there are c.5 million properties with EPC 'D' and below. At an assumed average retrofit cost of £15,000-£25,000, the total addressable market lies between £75bn to £125bn in terms of project value / lending volumes.

BIT's research pointed out that homeowners with better EPC ratings are 6% more likely to install energy efficiency improvements and 2% more likely to use Scroll to finance them. Hence, our target market expands even further given this customer segment will be an early adopter having already experienced the benefits of energy efficiency improvements. In the future, we may consider expanding our loan criteria to unencumbered mortgages wherein we will be able to expand our target market to the 9.3 million owner-occupied homes owned outright (~60% below EPC D Savills).

[6] Subnational estimates of dwellings and households by tenure, England - Office for National Statistics (ons.gov.uk)
[7] English Private Landlord Survey 2021: Main report (publishing.service.gov.uk)
[8] spotlight---real-estate-and-the-carbon-challenge.pdf (savills.co.uk)

In terms of consumer attitudes towards green measures, BIT's research indicated that financial and cost barriers remain the largest deterrent for homeowners with 61% citing this as the top reason preventing them from pursuing improvements. Other barriers which were preventing homeowners included uncertainty on outcomes (52%), disruption and hassle involved during retrofit (38%), access to quality installers (32%), and lack of suitable finance options (28%). Most people recognised the benefits of home energy efficiency improvements, with 74% saying that home energy efficiency improvements can reduce their monthly energy bills. Only 38% selected 'future proofing' or reducing environmental impact or the EPC of their home as important benefits to installing energy efficiency improvements. This emphasises a notable trend in customer behaviour, where the perceived economic impact on their household budget emerges as a more influential factor than environmental concerns. The key takeaway for us our strategies and customer communication should prioritise addressing financial barriers, ensuring affordability, and emphasising the tangible economic advantages of such improvements to resonate with homeowner priorities.

More than 5 in 10 participants had installed (double or triple) glazing, loft / cavity wall insulation, or energy-efficient lighting. Solar panels and heat pumps were the least installed home energy efficiency improvements.

Other key findings that helped us come up with our typical user profiles:

- Men are 4% less likely to use the Scroll offer to finance the installation of energy efficiency improvements
- Homeowners aged under 25 are 8% more likely to install energy efficiency improvements, but 6% less likely to use Scroll to finance them (compared to aged 25 to 54)
- There were no significant differences in intentions to install home energy efficiency improvements, or to use Scroll to finance them, for people with lower versus higher income
- Homeowners who intend to live in their home for less than 5 years are 5% more likely to install energy efficiency improvements
- Owners of detached houses are 2-4% more likely to install energy efficiency improvements, but 2-5% less likely to use Scroll to finance them (compared to homeowners of semi-detached and terrace houses)
- Homeowners with good EPC ratings are 6% more likely to install energy efficiency improvements. Possibly because they have experienced the benefits first-hand compared with people who have less-efficient properties and are unaware of the benefits of improving the efficiency of their home. These homeowners are also 2% more likely to use Scroll to finance improvements

compared to those with poor EPC ratings

- Homeowners who live in smaller households: 7% less likely to install energy efficiency improvements, and 14% less likely to use Scroll to finance them (compared to those living in bigger households)

2.5. Challenges/barriers relating to the cost of living and energy price crisis

In creating a digital solution, our aim is to demonstrate the return on investment to users for various retrofit projects. However, the fluctuating energy prices and rising retrofit costs due to inflation present challenges in ensuring that all estimates remain current and up to date.

The cost-of-living crisis has had a positive and negative impact in terms of potential user engagement. The cost of living has put considerations of energy spending at the top of people's agenda, however the additional pressure on household incomes has meant budgets are tighter in terms of being able to act. For those thinking about upsizing or larger renovations, choosing smaller retrofit projects to cut overall bills could be a cost-effective option. However, individuals planning smaller retrofits may face challenges due to the rising costs of living, making it difficult to initiate these projects from a financing standpoint.

The project has encountered some minor challenges regarding the current market conditions, where mortgage rates are at a 15+ year high which along with the cost-of-living crisis has strongly impacted affordability of consumers. We recognised that providing consumers with an overall financial picture of costs and benefits in a user-friendly way will help to provide them with the ease and comfort to move forward. It was also challenging during the qualitative interviews and user testing to discuss take-up of financing when interest rates are high, and consumers are feeling the squeeze. However, we believe the situation is temporary and cyclical and the recent move by the Bank of England to resist a further rate increase signals a reversal in the interest rate cycle.

2.6. How did we overcome these challenges and factor changing energy prices to Return on Investment (ROI) calculations

Core to both our quantitative and qualitative research was working to translate the financial impact and return on investment (ROI) calculations of investing in retrofit back to the potential customer as effectively as possible. All of our calculations are based on algorithms and designed to be dynamic. They adjust alongside adjusted inputs meaning

as the price of energy and capital fluctuates, we can vary the inputs accordingly and this will automatically calculate adjusted ROI outputs.

Scroll is bringing cheaper “green” institutional fundings for the Green HELOC product. This funding comes from impact funds[9] and financial institutions focused on environmental, social and governance (ESG) and hence is cheaper than market rates. During our research and user testing we used expected rates on these products based on the funding we will receive for the Green HELOC. Through the embedded finance solution, we remove friction and improve efficiency, allowing us to reduce typical "broker"/"introduction" fees that exist today in other consumer finance offerings which further improves payback / ROI over a standard loan / line of credit offering.

2.7. Methodology for factoring potential future price changes (both energy / installation costs)

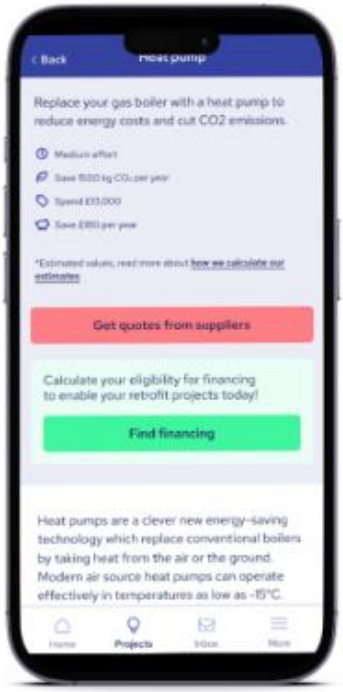
Our projected costs and savings for properties are all based on algorithms that sit within the back end of the SuSy app. In terms of energy cost and savings projections it is our intention to monitor these regularly and we are currently in discussion with the Energy Savings Trust about their regular reporting service to provide updates to us when market fluctuations occur. These can be input straight into our algorithms and will therefore adjust, and update projections users are seeing. For users with smart meters, we have identified tariff information in the data available from the DCC[10]; our intention is to feed this into our calculations so projected bill savings can be specific to the user’s particular tariff and updated dynamically.

For us, staying ahead of market fluctuations is crucial. We understand that energy costs and installation expenses are dynamic and can significantly impact the financial aspects of retrofit projects. By employing these algorithms, we ensure that our projections remain accurate and reliable. Regular monitoring, facilitated through discussions with the Energy Savings Trust, allows us to promptly adapt to market changes. Integrating real-time data into our calculations is fundamental to providing users with precise, up-to-date estimations. For users, this approach translates into transparency and confidence. The ability to factor in potential future price changes means that the estimates they see are not static figures but dynamic, responsive to real-world fluctuations. This dynamic updating ensures that users are equipped with the most relevant and reliable

[9] Impact investments are investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return.

[10] Part of Capita PLC, the DCC is a monopoly company that operates under the Smart Meter Communications Licence, which is regulated by Ofgem. It is responsible for linking smart meters in homes and small businesses with energy suppliers, network operators and energy service companies.

information for their decision-making process. Whether it's understanding potential energy savings or estimating the costs of a retrofit project, our methodology guarantees that users are empowered with accurate, personalised, and current data tailored to their specific circumstances, ultimately enhancing their experience and confidence in pursuing energy-efficient home improvements.



ROI and energy savings for a given project in the SuSy app

2.8. Initial target consumer groups and route to market

From the beginning, the project identified three pilot locations in Bristol, Oxfordshire, and the West Midlands as the initial target geographies. We continue to focus on these geographies and have established partners in each of these locations with an aim to target owner-occupiers and landlords with mortgaged properties. We selected these locations on basis of our partners presence and focus on these regions. They are building and training supply chain in these regions and are focused on penetrating deeply into their respective regions rather than spreading themselves geographically. It is also worth noting that these regions are known to have residents and local authorities that are forward thinking and are “early adopters” for retrofit[11].

[11] New research outlines urgent action required to speed up energy efficient retrofitting of UK homes - IFA Magazine

Findings and learnings from the Discovery Phase have only solidified our understanding of consumer needs and help us better understand our typical user profile and characteristics. We will use the research undertaken in specific targeting and marketing activities during the next phase of the project. For example, BIT's research pointed out that homeowners with better EPC ratings are 6% more likely to install energy efficiency improvements and 2% more likely to use Scroll to finance them. Hence, our target market expands even further given this customer segment will be an early adopter having already experienced the benefits of energy efficiency improvements. We will leverage similar insights and data points to improve consumer targeting and segmentation.

2.9. Expanding target markets and consumer groups beyond initial segments

In the next phase, we aim to deepen penetration in initial pilot locations before expanding nationwide in 2025-26, targeting both mortgaged and unencumbered properties. The collaboration between Scroll and SuSy will continue, with plans to commercialise relationships with other project delivery partners. Distribution will expand through project partners and traditional channels, leveraging Scroll's existing relationships with mortgage brokers.

3. Relationship and partnership building

3.1. Approach for partnership building

The Green Home Finance Accelerator has given both Scroll and SuSy a platform to reach out widely and build partners in the energy efficiency/low-carbon heating/micro-generation and property value/supply chain ecosystem. This was a practice adopted throughout the Discovery Phase to garner interest and raise the profile of our project.

Scroll has established partnerships with regional authorities, community groups, and other stakeholders such as West Midlands Combined Authority, Low Carbon Hub, and the Green Finance Institute who will bring industry knowledge and extensive experience as we design and pilot our solution. They will serve as advocates to help promote GLOCERS to consumers in their respective regions. We have also developed partnerships with retrofit partners in Cosy Homes Oxfordshire and Furbnow. We will look to embed the GLOCERS solution with these partners and offer the Green HELOC to their customers to finance retrofits to their homes. Furthermore, Scroll is bringing additional "green" institutional funding for the Green HELOC and has engaged with impact funds and financial institutions in this regard. This will allow Scroll to potentially access cheaper funding and pass the benefit to consumers who will pay a lower interest rate than market given the funds are being used to make the property energy efficient and reduce carbon. Scroll will work with the likes of Rightmove and Pure Panel Management in the property supply chain to conduct property valuations where retrofits will be delivered.

SuSy, since launching their prototype platform for testing, has already completed a signup and accreditation process for 10+ contractors in the supply chain with many more indicating their desire to take part. In addition, SuSy works closely with Bristol City Leap who have indicated their intent to support the success of this project as it aligns with their overall objectives of making Bristol a Net Zero City. SuSy will launch their own "retrofit network" galvanising engaged organisations within the city and bringing together contractors, suppliers, local authority representatives and all others in the supply chain for a monthly event designed to promote connections and educate on the opportunities of retrofit and the benefits of Trustmark and MCS accreditation.

3.2. Details of relationships built

In our pursuit of enhancing the consumer experience and making our solution truly impactful, we have proactively fostered crucial relationships with various entities. These relationships have directly influenced the evolution of our service. This section provides an overview of these vital connections and the instrumental role they have played in shaping our approach and service design.

a. **Green Finance Institute**: Scroll is a member of the Green Finance Institute's Coalition for the Energy Efficiency of Buildings (GFI-CEEB) and GFI-CEEB has expressed strong willingness to support the project given the alignment with its own objectives to design, develop and launch portfolios of scalable financial solutions that accelerate sector-specific transitions to a low-carbon future. Through active dialogues, we've aligned our solution to GFIs Green Home Finance Principles (see annex 2 for more detail), ensuring our service resonates with the Institute. Their input has been instrumental in refining our approach, making our service more compelling for consumers.

b. **West Midlands:**

   i. **Energy Capital**: Energy Capital is part of West Midlands Combined Authority (WMCA), responsible for the delivery of the Regional Energy Strategy and the achievement of net zero across the West Midlands by 2041. Energy Capital found promise in the project and has extended its support to promote GLOCERS amongst residents in the West Midlands through marketing and consumer engagement support. They will be a key consumer advocate and help tailor our messaging, making it relevant and relatable to residents in the West Midlands.

   Furbnow: Furbnow is a "managed marketplace" that streamlines the end-to-end process of conducting green retrofits. Their customer journey includes provision of a home energy plan, retrofit project support or full project management by a qualified retrofit co-ordinator, installation, aftercare, and monitoring. Service offerings include the complete set of retrofit measures such as loft insulation, underfloor heating, heat pumps, and solar arrays. Furbnow has a network of installers and surveyors with strong presence in the West Midlands and will act as retrofit delivery partner to Scroll for the West Midlands. Scroll and Furbnow have been discussing potential collaboration opportunities and we have been sharing our research findings and knowledge from the discovery phase. Scroll was looking for a partner in the West Midlands that can provide retrofit services

to consumers. Scroll will embed the Green HELOC in Furbnow's retrofit journey and provide financing to its customers to pay for retrofit projects.

c. Oxfordshire:

i. **Cosy Homes Oxfordshire**: Low Carbon Hub and Retrofit Works came together to form the Cosy Homes Oxfordshire brand, a project funded by the former Department for Business, Energy, and Industrial Strategy (BEIS) to design and test an end-to-end domestic whole house retrofit service for the able-to-pay market in Oxfordshire. We have been exploring partnership opportunities prior to the Green Home Finance Accelerator and when we discussed this project Cosy Homes was happy to provide their support. They will act as retrofit delivery partner to Scroll in Oxfordshire. Once the complete finance offer is in place, and reviewed by Cosy Homes, Scroll will embed the Green HELOC in Cosy Homes' retrofit journey and provide financing to its customers to pay for whole house retrofit projects.

d. Bristol:

i. **Bristol City Leap**: SuSy has partnered with Bristol City Leap as part of another project, and they have indicated their willingness to support this project as it moves to the Pilot Phase. Bristol City Leap are on a mission to make Bristol a Net Zero City by 2030. Part of their commitment is to encourage able-to-pay homeowners to retrofit their homes to reduce their carbon footprint. This is an objective that perfectly aligns with our project, and they have therefore offered a letter of support and indicated they are happy to explore all ways they can support our objectives within Bristol. The primary knowledge and expertise will be relationships and connections. We will explore the potential relationships they can help us with including connections into Bristol City Council. Bristol City Leap are also involved in facilitating the retrofit of Bristol City Council's housing stock therefore their housing stock has the potential to support the development of our machine learning capability and improving the accuracy of projections through access to a larger pool of properties.

ii. **Contractors:** SuSy has established relationships with 10+ contractors who are engaged in the delivery of retrofit. These are typically small and medium organisations such as the Comera Group and Gregor Heating. This contractor base has already proven invaluable in providing feedback about the contractor app user journey prototype and also to gauge the attitude and engagement of contractors more broadly in retrofit and our product

offering and proposals. We have specifically focused on MCS and Trustmark accredited contractors and those with high social proof scores to ensure quality of delivery. We will rely heavily on this contractor base going forward and increasing it to deliver retrofit to end users.

3.3. Future partnership / relationship building

Partnerships will be at the core of successful financing and uptake of retrofit in the UK. The problem is too big for only one or a few organisations to tackle. We have already established a network of strong partnerships within the Discovery Phase and our research has indicated more will be required to support the engagement of households to understand the benefits of retrofit and the engagement of contractors to develop sufficient strength within the supply chain in order to be able to deliver retrofit on a nationwide scale.

For securing future partnerships we intend to follow the below approach:

- Identifying and mapping stakeholders to consumer needs and roles performed
- Alignment on objectives and outcomes envisaged
- Aligning partners based on research and data backed insights
- Partners that align with regulatory requirements and industry standards
- Partners that are designed to scale and make an impact at a national level in line with our ambitions
- Levels of innovation, agility, adaptability of partners
- “Cultural-fit” between the organisations

3.4. Knowledge sharing with partners

With all our partners we have had open and transparent dialogue on the project’s progress, challenges faced, and successes. Over the course of the Discovery Phase, we shared our consumer research findings and the proposed product design/ prototypes for feedback and suggestions with all our partners. We have received support from these partners for the next phase of the project and will continue to share information and knowledge transparently to enhance our collaboration and partnership.

3.5. Barriers/challenges faced in building supply chain relationships

The primary challenges encountered with developing relationships with the supply chain were both time and timing. Many of the best contractors proved to be extremely busy with

little capacity for additional work or to even speak about the opportunity of additional work. While they were broadly in support of the project objectives, they had little time to engage.

In terms of timing, those who did engage with us were interested in the potential for the additional work it could generate for them. As we were not in a full launch phase with the prospect of immediate work a number of contractors were less interested in engaging.

It is important in the model to be able to provide customers with a choice of quotes from qualified and vetted contractors. Therefore, when we come to fully launch and test the product, we will require a baseline of contractor numbers in the region of 15 to 25 and look to grow that fast in order to ensure users have choice and there is a sufficient supply chain to meet demand. We need to carefully manage the development of the supply chain with the growth in user base to balance the two and ensure we have sufficient engaged suppliers to meet demand when needed. As marketing efforts expand the user base and inquiries increase through the app, we will shift focus to B2B (business-to-business) partnerships through Trustmark and other initiatives to scale the supply chain to ensure a robust network capable of meeting growing demand.

3.6. Knowledge gaps identified which we propose to bring in the next phase of the project

For the next phase of the project, the consortium will look to build internal capacity and add new roles in each of the organisations to successfully deliver this project. The consortium has put together a robust internal capacity building and recruitment plan to bridge any knowledge/skill gaps. We have identified specific roles that need to be filled amongst the consortium, and indicative timelines for onboarding such roles.

In terms of specific knowledge/expertise gaps, Scroll will look to enhance its in-house digital marketing capabilities to support SuSy and other delivery partners in their marketing and consumer engagement activities.

Research identified the benefit and need for users of being able to speak to a qualified expert as they consider their retrofit options, to back up / further clarify and tailor the information that has already been presented to them via the SuSy app. SuSy's intention therefore is to train a number of retrofit coordinators to serve as subcontractors and provide that independent advice. SuSy also intends to recruit an operations director to support the roll out of this technical advice.

In addition, they found the need to develop a partnership with a Trustmark and MCS accreditation body to ideally co-sponsor our retrofit network. Their intention as part of the network will be to educate contractors in the opportunities in retrofit and the importance and benefit of Trustmark and MCS registration and having a supporting training body to help provide content but also signpost to will serve to increase effectiveness.

SuSy also recognises the need to enhance its marketing capability and therefore has engaged an agency who have achieved significant demonstrable results in direct-to-consumer and app promotion. SuSy intends to support effective marketing in the Pilot Phase by employing an experienced marketing lead to support our work with our selected agency.

4. Green finance product research

4.1. Outline of key activities undertaken in the design and development of the green home finance product

In the realm of green home retrofits, financing has long been a challenge, acting as a barrier for many individuals aspiring to make their homes energy efficient. The conventional methods of financing often come with complexities, high costs, and limited accessibility, hindering the widespread adoption of eco-friendly home improvements. Recognising these hurdles, our focus has been on pioneering a solution that simplifies and optimises the financing process. Through design and development, we embarked on a journey to create the Green HELOC product, seamlessly embedded within customer journeys of partners such as SuSy. This endeavour involved a multifaceted approach, combining primary research, market analysis, legal expertise, customer journey mapping, and user interface/user experience (UI/UX) design activities. Our goal was not just to create a financial product but to change the way green retrofits are funded, making it accessible, user-friendly, and tailored to the needs of homeowners. Below, we outline the key activities undertaken in the design and development of this innovative Green HELOC product, each step crafted to address the challenges prevalent in the existing green retrofit financing landscape.

- Primary research activities through an online experiment and survey:
    - Intentions to use Scroll's Green HELOC to finance improvements vs other finance options
    - Whether Scroll's offer 'unlocks' retrofits that otherwise would not have been funded
    - Consumer intentions towards, and barriers in the way of, undergoing retrofits under a range of retrofit price scenarios
    - Ways to optimise the financial and non-financial aspects of the offer (within the SuSy journey) to maximise uptake
- Market research:
    - Benchmarking competitive offerings, features, and pricing
    - Relevant technologies and offerings that may be integrated in our solution
    - Mapping out competitive lenders product offerings
    - Discussions with potential funders and investors
- Legal opinion and regulatory advice:
    - Product design of Green HELOC and embedded finance customer

journey within the SuSy app and other delivery partners
    - Financial promotions
    - Working with introducers under FCA guidelines
    - Drafting of the suite of product documents to issue the Green HELOC to consumers
- Customer journey mapping:
    - Understanding the SuSy user journey and retrofit process
    - Identifying trigger and key decision points where financing could be inserted / signposted
    - Mapping consumer pain points, needs and preferences:
- UI/UX design and development activities involving:
    - Defining product values, vision statement, and value proposition
    - Workshops to brainstorm minimum viable product (MVP) scope of the embedded journey
    - Creating UI/UX design for the embedded calculator within the SuSy app
    - Prototyping of MVP using mapped-out UX Design
    - Implementing UI elements on the MVP
    - User testing and qualitative interviews to receive feedback on prototype
- User testing and qualitative interviews:
    - Recruitment of participants by Susy
    - A script was prepared, outlining introductory questions, a task (running through a user journey), and wrap-up questions
    - Basis feedback, we have refined the prototype and developed a final prototype that best reflects our learnings from the testing and the research process

4.2. Key finance product related lessons learnt/research findings in the Discovery Phase

Although users understood that the product was a second mortgage, the acronym HELOC (home equity line of credit) caused confusion; some interpreted this to be the name of the provider, rather than the type of product. The first-year interest-free feature was a key point of discussion. Participants liked that it would give them a year to assess their finances and the economy and decide how they want to proceed. However, they consistently requested more clarity around the details: what happened at the end of the first year and when they would start repayments. We will address by enhancing messaging in the finance calculator, signposting repayments as users move through the finance journey to signing of loan agreements, and lastly ensure customers are fully

informed on their financial obligations when they speak to Scroll's mortgage advisors / underwriters. Whilst novel in an embedded finance context, these are common practices in the mortgage lending market in which the Scroll team has significant experience.

The flexibility afforded by the feature of "no early repayment charges" appealed to users. Users were interested in experimenting with different repayment periods. There was some hesitation about longer repayment periods if the user felt that the repayment period may exceed the lifespan of the improvement, they were financing. Most of the feedback about the product was more focused on improving the explanation and information available about the product, rather than doubts about the product itself. The main exception to this was the interest rate. The APR quoted in the prototype was 8.9% and this was universally regarded to be too high, even considering the current financial climate. It was perceived to be much higher than other financial products on the market, which users would want to compare to if considering this product.

4.3. Alternate finance options considered

Given the encouraging results from our initial survey and online experiment with BIT we felt sufficiently confident to proceed with our initial option of the Green HELOC and did not consider alternatives. We used the survey insights to tweak our product design, improve messaging, and refine the overall proposition by bringing out the features that the survey participants found most attractive.

4.4. Regulatory and FCA considerations

The project commissioned legal and regulatory advice covering all aspects of product design and delivery. Of particular focus was advice on the regulatory framework and FCA permission status required for the various project supply chain partners.

In that context we have designed a compliant customer journey which exempts supply chain partners including the various retrofit installers from holding any FCA permissions or requiring them to become agents or representatives of a regulated entity. This was a key design decision taken in order to build a scalable solution.

Following this advice we determined that participation in the FCA Regulatory Sandbox was not applicable as the existing regulatory framework was sufficient.

5. Advice/information research

5.1. Approach for provision of retrofit advice enabling customers to make informed and appropriate choices

We believe that initial energy efficiency advice delivered through a digital advice tool allows us to scale and efficiently tailor our service for specific products, geographies, and targeted customer segments.

SuSy utilises a blend of public and proprietary data, including smart-meter readings, to create a “digital twin” of the property. Applying virtual retrofits, users receive free advice on potential upgrades and estimated costs. SuSy extends its support further by offering phone consultations and site surveys with expert retrofit advisors. User testing interviews helped validate and refine our retrofit advice approach. Barriers such as uncertainty of outcome and lack of awareness were top of mind. These will be addressed through digital signposting and links to independent sources such as the Energy Savings Trust and backed up by access to expert human advice at every stage. Trust in the data provided is a key issue we need to overcome so we will therefore include an overview of our calculation methodology that anyone can delve into for more detail.

Our other delivery partners in Oxfordshire and West Midlands will prioritise community engagement, working with local energy efficiency advocates and consumer groups, combined with digital advice. Homeowners’ initial retrofit advice will be through our delivery partners' personalised plan builder tools. If they decide to proceed, a comprehensive home retrofit assessment will be conducted, establishing the scope of work, and making the embedded Green HELOC offer available.

Scroll will provide financial advice and carry out “speaks with” calls through mortgage advisors / underwriters to handhold customers on product suitability and loan applications.

5.2. Why we selected this approach and alternate options considered

The intention of the SuSy advice service is to be scalable and accessible to as many people as possible. Therefore when discussing possible routes for advice in the initial stages we had to consider what was the most cost-effective route to disseminate advice

as far as possible. For this reason a digital solution was identified as, while it involves relatively high upfront costs, once the system is built it becomes extremely cost effective.

The Discovery Phase involved finalising the development of and testing the SuSy prototype, including the digital advice service with users to assess the value they put on the advice and whether users felt sufficiently comfortable to act. Through our user research, qualitative interviews, and surveys during the Discovery Phase we established that a more blended approach was required to maximise user engagement and trust which were crucial factors in the intention to act.

Firstly the feedback was that the initial digital advice served well to engage. The interface was simple to use, and, in some cases, it almost seemed “too easy” which engendered a degree of scepticism about how accurate the information being provided was. Users stated that given the size of the investment they would be seeking advice from multiple channels and sources and therefore providing links to external providers of advice to further verify the localised information made sense.

In addition, 88% of users said that being able to speak to a retrofit expert would be either useful or very useful to assist them with planning for and making decisions about their project.

As a consequence of this feedback the purely digital approach was ruled out in favour of this blended approach in order to maximise users’ comfort with the service and therefore maximise the chances of conversion to undertaking retrofit works.

5.3. Consumer preferences relating to advice and information

Our research has told us the following about consumer preferences relating to advice and information. Consumers prefer their advice to be:

- Multi sourced: Consumers are looking at multiple sources to verify their advice and make their own decisions
- Be specific to their home: The world of retrofit is complex, and the options are multiple therefore consumers are looking for advice that is tailored to their specific property and what will work best for them
- Involve a human element: Many people would like the ability to consult an expert about their specific property as the problems are complex and they do not necessarily wish to work it all out themselves.

As a result of this we intend to change our advice tool in the following ways:

- Include references to our sources of information and the data on which we base our advice alongside the advice being provided. In addition signpost alternative independent sources of data for those that would like to do further reading and research external to the app
- Introduce a team of consultants and retrofit advisors who can both speak to homeowners on the phone and visit their home to provide an independent retrofit plan for their property

These changes will be implemented in our proposed customer journey both in-app and as a service to customers that are moving through the journey.

5.4. Integrating advice with finance

Users who were presented with our embedded finance solution within the SuSy retrofit journey responded generally positively to the joined-up nature of the advice and finance provision. Within the SuSy app users are presented with projections and given indicative costs for those projects and users suggested they would like to see the finance offering fully integrated within a project so they could see the savings and repayment terms and ROI relating to that specific proposed project.

5.5. Evaluation criteria for advice approach

Our research has told us the following about the pros and cons of building our own bespoke advice provision versus signposting to a third party's already existing service.

The primary pro of building our own bespoke advice provision is it keeps users within our customer journey. As well as looking to support decarbonisation of housing we obviously also need this to be a successful and sustainable commercial enterprise. Common digital sales wisdom dictates that in order to maximise conversion / action, that it is best to keep the user on your platform and drive them to a call to action.

The primary con of building our own bespoke provision is users are unsure whether to trust the advice as they can be suspicious as to where it is coming from and if we are just trying to sell them something.

The primary pros and cons of signposting to a third party's existing site are essentially the inverse of the two points above. The pro is that as retrofit is a complex issue, many

consumers are looking for multiple sources of advice to form their decision will aid and speed their decision-making process. The primary con is that it adds a layer of complexity and takes users away from the customer journey.

In order to address the cons it is clear we do need to provide external verification of the advice we are giving both within the app (referencing) and external to the app (providing links). In order to lessen the impact of drop out we can seek to bring users back through our own internal marketing efforts.

6. Verification methodology research

6.1. Proposed approach to verification and quality assurance

Our approach to the verification and quality assurance of home retrofit is four-fold:

- Authenticating installer credentials
- Smart-meter verification
- Social proof
- Pre and post installation property valuation

BIT's study found 52% of homeowners fear disappointing results from energy upgrades. Our strong verification process will provide comfort on intended outcomes. This is backed up by feedback received from Scroll's funding partners, that verification is essential towards accessing lower-cost green capital for retrofit finance.

We have carefully designed the below approach which is scalable and effective:

a. **Authenticating installer credentials:** Checking insurance documents, accreditations, and soft credit checks. Trustmark / MCS installers will be actively targeted and accreditations (including others like HEIS, RECC, and EVPS) will be actively promoted. The incentive to get accredited is the ability to deliver green finance backed work leading to higher conversions and deal sizes.

b. **Smart-meter verification**: Leveraging N3rgy's smart-meter technology, accurate real-time energy data is collected. This data forms a baseline for post-installation assessment, enabling SuSy to monitor energy savings and validate improvements. Homeowners can connect their smart-meters or manually enter readings via the app. Discrepancies outside typical ranges will be investigated and reported.

c. **Social proof**: Investigation and physical inspections by qualified advisers for any complaints received. BIT's findings showed 77% of people would choose installers based on accreditations, 62% based on social proof, and 60% based on insurance policies. This shows that consumers are vary of quality standards perhaps due to a previous experience with a contractor and word-of-mouth marketing / referrals as a strategy may help promote our service more widely.

d. **Funding-related verification**: Scroll funds approved installers for partner-recommended projects, releasing funds upon mutual agreement to ensure proper use. In the pilot, Scroll will explore pre-installation and post-installation property valuations for added verification.

We have aligned our approach with our partners in Oxfordshire and West Midlands will follow similar verification approaches in their pilot locations.

6.2. Why we selected this approach and other options considered

As described in section 5 above, the primary reason for SuSy to select this approach was ensuring scalability in the service. We wanted to ensure that our approach could be scaled up quickly to support the verification of thousands of projects. We also have the desire to improve on current measures of the performance of a property such as EPC which are static and time stamped.

Because the HELOC product is designed with a flexible drawdown facility we want consumers to have the option to undertake one project at a time if they should wish, assess, and measure the impact and then drawdown further to undertake another project. If we were undertaking a post installation survey or EPC after each of these projects, it has the potential to become prohibitive in terms of cost and time to enable scale. We also wanted everything in our approach to be as frictionless as possible from a user perspective and therefore we wanted to be able to monitor and assess outcomes remotely as a matter of course. Therefore, our focus from the beginning was around meter readings and how we could use these to verify the performance of improvements.

Our research then highlighted two other key elements that were considered of high importance from the consumer in relation to contractors:

- Having the accreditations / qualifications (77%)
- References from previous customers / online reviews (62%)

Given the consumer desire for these elements and the fact that they strongly support verification of the quality of install it made perfect sense to include them as part of a three-pronged verification methodology.

6.3. What did our research suggest on verification

As per 6.2 our research has told us that consumers count it very important in relation to recommended contractors:

- Having the accreditations / qualifications (77%)
- References from previous customers / online reviews (62%)

This aligns well with this also forming part of the verification methodology. By only allowing contractors who are accredited to be recommended to undertake work we are serving to ensure that standards are maintained from the outset. Knowing the only contractors undertaking work are trained and qualified to do so is a great starting point.

Social proof is now a well-established quality check methodology employed by a number of platforms. Consumers are familiar with this methodology, and it puts the power in their hands. There is nowhere to hide as a poor-quality contractor in the court of public opinion and therefore we see this as a strong pillar of verification to support a scalable solution in addition to digital monitoring. Any complaints will be investigated by one of our independent retrofit experts and worked towards resolution.

This is all backed up and supported by a third level measure which is our own monitoring of outcomes via meter readings, which verifies the upgrade in energy performance, if it occurs, and how. We take measurements for a period of use before any retrofit installation is done, and a respective period after that. Having the patterns of energy usage (hourly/daily/monthly) in the two periods, our mathematical models provide algorithms to compare and analyse the outcomes. That is, the gains in performance are measured and other factors are considered to have these results adjusted, in particular the habits of energy use in the residence.

SuSy's app automatically feeds the algorithms when any changes in the house profile are updated (number of occupants, changes in behaviour - for instance the time one has showers, what is obtained in the hourly monitoring, etc.). All these tests and verifications are made considering the digital twin built since the user created their account and online monitoring started through the smart meters connected. If there are no smart meters, accuracy is lower but still with good results as our algorithms consider statistical analysis by comparing similar households in our backend (which improve every time our set of users grow).

6.4. Integration of verification with rest of the customer journey

This was not something that was specifically addressed during user testing and interviews. Our intent has always been to cause minimal disruption and friction as the process of retrofit already has significant disruption and friction and therefore we assumed

that customers would wish for this to be minimised as much as possible for any verification.

Our research has shown evidence of consumers' general uncertainty about how to approach retrofit, finding trusted sources, knowing what will have the most impact, believing they will get the outcomes etc. There is an acknowledgement that the journey is complex for most people, and it requires building up sufficient trust to take the leap into retrofit. With that as the backdrop, integrating verification methodology to the product offering is further supported as the methodology as it will increase the consumers' sense of trust knowing that this is a core part of the service being offered.

6.5. What our research suggested on steps to be implemented for minimising fraud by customers/lenders/installers

Discussions with contractors highlight a high level of concern about low skilled individuals in the industry not meeting the required quality standards. We would benefit from randomised quality audits.

Some contractors anecdotally expressed concerns that accreditation bodies could be fast tracking low performing contractors because there is such a skills shortage in the market. There are concerns that this has the potential to taint the market as a whole and create scepticism and weariness amongst consumers. This has led to us introducing as part of the onboarding process for contractors not simply a check of their accreditations and insurances but also reviewing their external social proof. We also intend to use in-house resource as part of the pilot project to physically survey and spot check the quality of work being undertaken.

As part of launching the retrofit network we will also be inviting members to hold each other up to the highest standards and if they have any concerns about any members to be speaking to us about those.

7. Marketing related research

7.1. Research findings related to consumer marketing preferences

We have taken a number of learnings from Discovery Phase research in relation to marketing. These mainly fall under:

a. Target Demographics:

Our assumption going into the Discovery Phase had been that we would focus our marketing during the Pilot Phase on two main sub-groups. Namely these were:

- Homeowners aged 40-55 with families who were in their long-term homes
- Near to retirement or early retirees (60+) who saw themselves as being in their long-term homes and may be looking to make improvements for retirement
- People with the most energy inefficient homes

Our research threw up a few surprising elements in relation to these assumptions. These were:

- Intended future time in the property had little bearing on the likelihood of taking up finance to undertake energy improvement measures
- Those aged under 25 were more likely than those 55 and over to undertake energy efficiency improvements and almost twice as likely to want to do so with the financing on offer
- Those in the most efficient homes (EPC A to C) were the most likely to want to undertake energy efficiency improvements

These findings were further backed up by wider reading into other studies released during the Discovery Phase including Nesta's report "*All the things I could do: Financing green home upgrades*"[12] which showed that the 25-34 age bracket had the highest likelihood of taking up a green finance offer.

[12] All the things I could do: financing green home upgrades | Nesta

We also discovered other elements which are less unexpected but nevertheless notable which included that those with larger households (where no doubt energy consumption is higher) and higher household incomes were more likely to undertake energy efficiency improvements and undertake financing for them. This information will have a significant bearing on the audiences we target, and which will in turn have an impact on the channels we use.

b. Messaging:

Our assumptions going into the Discovery Phase were that the primary messaging that would appeal would be around cost savings and carbon savings. Some of this has been borne out and some of it not.

Our market research study revealed that while cost saving was seen as the most attractive benefit of making energy saving improvements (74%), the two subsequent most impactful benefits were making the home more comfortable and increasing the property value (59% each). This has been further backed up by wider studies we have also read into during the Discovery Phase including the Sustainable Energy of Ireland Study “Promoting retrofitting among homeowners in Ireland through a behavioural lens” which also concluded the most attractive benefit of retrofit to consumers was savings followed secondly by increased comfort.

We did some initial marketing testing of this messaging via social and also paid for physical ads and found our social engagement has seen better returns in terms of engagement. This may be partly impacted by budget restrictions as we are conscious that successful B2C (business-to-consumer) marketing requires a number of touch points and therefore at the pilot stage we intend to adopt an integrated multi-channel approach, focusing primarily on digital where we can track user behaviour and engagement and retarget effectively.

We also found that our most effective form of engagement was face to face via exhibitions. We found the human interaction element really helped to complement the digital solution. It is our intention as we go forward to delve deeper into the messaging that is most impactful for each of the sub-groups to understand what messages we should focus on what channels and what emphasis to put on those different areas.

c. Trigger points for action:

The "*Promoting retrofit among homeowners in Ireland*" report[13] highlighted a number of trigger points for consumers to start considering retrofit. These were:

- Receiving a large bill form an energy provider
- Moving into or purchasing a new home
- People already renovating
- Finalisation of mortgage
- Heating system failure
- Changing life circumstances (e.g. the addition of a new baby, starting a new job, retirement)

Understanding these also informs our marketing strategy in terms of building audiences, targeting keyword searches and the messaging of adverts and marketing as we can target these key events / trigger points as opportunities to present consumers with our solution.

7.2. Development of our marketing strategy over the course of the Discovery Phase

During the Discovery Phase, our marketing strategy for promoting the Green HELOC product underwent significant evolution, driven by a reassessment of our assumptions and insights gained from comprehensive market research and qualitative user testing. The diverse feedback received compelled us to adapt our approach, ensuring it resonates effectively with our target audience within the SuSy app which is where promotion of the Green HELOC takes place.

In our journey through the Discovery Phase, we delved deep into user preferences and feedback, shaping our marketing strategy for the Green HELOC product. One of the pivotal revelations was the emphasis placed by users on installer credibility, with 77% valuing contractor accreditation and 62% emphasising references from previous customers. Responding to this insight, we are refining our prototype to offer a comprehensive database of installers, detailing their accreditation and qualifications for users' scrutiny. Additionally, we are in the process of establishing a robust social proof bank, guiding users to external references that vouch for the reliability of our installer network. To instil further trust, we have set a stringent criterion for installers - Trustmark registration, a prerequisite for HELOC financed projects. We are committed to

[13] Promoting-retrofitting-among-homeowners-in-Ireland-through-a-behavioural-lens.pdf (seai.ie)

transparency, outlining Trustmark accreditation requirements within the app to enhance users' trust in the outcome's reliability.

Moreover, users emphasised the significance of data presentation within the app, especially highlighting the importance of showcasing potential savings and indicating the impact on property value. In response to this, we are integrating these features, ensuring users have a clear understanding of the financial and property value benefits associated with retrofit projects.

The positive reception and uptake of the app during face-to-face events resonated profoundly with our strategy. We decided to introduce human touch points within the user journey, offering a call or survey with a retrofit coordinator. This initiative aims to address user queries related to data accuracy for their homes, enhancing their confidence in the information presented.

Addressing initial scepticism about data accuracy due to the app's easy and seamless user journey, we restructured the onboarding process. Now, user verification and a review of the data we hold about their home are integrated steps, ensuring users have confidence in the accuracy of the information provided.

Understanding users' inclination to seek input from various sources, we are planning to signpost users to authoritative resources within the app. Discussions are underway with the Energy Savings Trust to leverage their research and data, enabling us to cite external trusted resources.

Furthermore, feedback from financing prototype testing highlighted the imperative need to provide evidence of Scroll's credibility as part of the user journey. This strategic emphasis aims to prompt users to embrace the financial product, fostering trust and confidence in their decision-making process. These insights have been pivotal in shaping our marketing strategy, ensuring that user needs and concerns are at the heart of our approach.

8. Future Plans for green home finance

8.1. Using Discovery Phase learnings for further green finance product development

The Discovery Phase has provided us with a structured approach and an excellent testing ground for the development of our Green HELOC. The processes that we followed, and the various work packages allotted have given us an effective blueprint to inform future green finance product development. Based on the research conducted through the BIT study, we already have insights on other forms of finance products preferred by certain classes of consumers, for example, unsecured loan offerings which are preferred by younger homeowners with little or no equity in their homes. In the future, we can leverage these insights to develop specific green finance products catered towards these particular customer segments.

8.2. Disseminating our learnings from the project

Our research has also helped Scroll, as a lender, to consider additional green finance offerings in our product roadmap and we are considering offerings such as unsecured and shared equity mortgages in addition to our green secured products. However, these are still in a nascent stage, and we would need further data and evidence on actual uptake amongst homeowners and potential lending volumes to progress development of such novel products for specific green purposes.

8.3. Key challenges/barriers for future green finance development

Involvement in the Green Home Finance Accelerator has proved to be a valuable platform for establishing relationships such as the supply chain in Bristol, Cosy Homes Oxfordshire, Bristol City Leap, Low Carbon Hub, and the Green Finance Institute. We have aligned its approach with various partners and will continue to disseminate learnings in the following manner:

a. **Active social media presence:** An ongoing social media strategy which involves content creation, blog publication to share progress and learnings from the project. SuSy and other delivery partners are adopting a multi-channel marketing approach which will incorporate significant case study evidence from local projects in the pilot

locations. SuSy's data science team regularly writes and publishes technical papers and white papers and will publish a case study on the pilot outcome.

b. **Workshops and conferences**: GLOCERS team members have attended a number of conferences such as the Energy Capital Conference in Coventry, Festival of Sustainable Business in Bristol, Innovate Finance Fintech as a Force for Good in London, numerous Sustainable Energy Association webinars. Attending these sessions have been insightful and have provided us a deeper understanding of the market in general and learnings from others operating in this space. We intend to continue this practice and will share learnings from this project where possible.

c. **Leverage trade association and memberships**: Scroll is a member of the Finance and Leasing Association, Innovate Finance, and the Green Finance Institute. SuSy is a member of the Sustainable Energy Association, The Bristol Energy Network, The Bristol Green Capital Partnership, and the Future Leap Network. We have already participated in several workshops with these trade bodies during the year and shared details of our Green Home Finance Accelerator project and will continue to do so going forward.

8.4. Key challenges or barriers for the future development of this green home finance proposition

In envisioning the future of green home finance propositions, it is imperative to navigate through several challenges and barriers that could potentially impede progress. These hurdles demand meticulous consideration and strategic planning, requiring one to delve deeper into each obstacle and explore viable approaches to overcome them.

One significant challenge lies in market awareness and education. Many consumers lack a comprehensive understanding of the advantages associated with green home financing options and the broader significance of energy efficient retrofits. To address this, targeted marketing campaigns coupled with educational initiatives become essential. Utilising various platforms, including digital media, workshops, and community events, can facilitate the dissemination of information. Collaborations with local authorities and community organisations can further amplify the impact, emphasising long-term financial savings and the positive environmental outcomes of green home improvements. We see this project as a playbook to demonstrate the potential of collaboration and how other providers can build similar partnerships to develop this ecosystem further.

Stable regulatory and policy support presents another key challenge. Uncertainties in regulations and policies as well as varying industry standards often lead to hesitancy among consumers and investors. To combat this, active engagement with policymakers and regulatory bodies is vital. By advocating for stable and supportive policies, the industry can create an environment conducive to green financing. Providing well-supported data on the economic and environmental benefits of green home initiatives can substantiate these efforts, guiding policy decisions positively.

Resistance to change within specific consumer segments poses yet another hurdle. Some individuals may be entrenched in traditional home improvement methods or may harbour apprehensions about the costs and complexities associated with retrofit technologies. Tailoring marketing strategies and education programs to address these concerns is crucial. Providing clear, straightforward information about the benefits of green home financing - emphasising long-term cost savings and improved living conditions - can be instrumental. Offering incentives, discounts, or flexible financing options can further encourage adoption. Testimonials and success stories from similar consumer segments can serve as powerful tools, illustrating the positive outcomes of green retrofits.

Lastly, the availability of skilled labour, sustainable materials, and an efficient supply chain emerges as a practical challenge. Limited access to these resources often results in delays, increased costs, and potential compromises in the quality of retrofit projects. As per the latest Energy Company Obligation (ECO) report released by the Department for Energy Security and Net Zero, delivery costs for the ECO scheme have increased by 41% over last year reflecting a significant increase in energy efficiency installation costs. To surmount this obstacle, investing in training programs becomes imperative. Collaboration with vocational institutions can enhance the skills of the existing workforce and attract new talent to the green construction industry. Partnerships with contractors/installers, manufacturers and material suppliers ensure a stable supply chain, fostering reliability. Exploring innovative construction methods and materials that optimise resources and reduce environmental impact is pivotal. Additionally, providing guidance and support to contractors, along with fostering collaboration between industry stakeholders, can streamline processes and address bottlenecks in the supply chain.

8.5. Addressing challenges/barriers for future green home finance development

Addressing the barriers identified above requires a multifaceted approach involving various stakeholders. Below are specific actions and initiatives that could be implemented to overcome these challenges:

a. **Public awareness campaigns:** Launch national educational campaigns to inform the public about the benefits of energy efficient homes, energy savings, and environmental impact. These campaigns can leverage various mediums such as television, social media, and community workshops to educate the public about the financial benefits of energy-efficient homes, including reduced utility bills and increased property value. Environmental benefits, such as reduced carbon emissions, should also be emphasised. Increased awareness can lead to a higher demand for green home financing options, encouraging homeowners to consider energy-efficient retrofits. Additionally, an informed public can drive policy support and industry growth.

b. **Financial incentives**: Provide subsidies, tax credits, or low-interest/subsidised loans to homeowners investing in energy efficiency or low-carbon technologies. These incentives aim to make green retrofits financially attractive for homeowners, offsetting the initial costs. Financial incentives reduce the financial burden on homeowners, making energy-efficient retrofits more accessible. Lenders will be incentivised further to participate and offer their financing more widely if their finance offers are subsidised or local authorities / government bodies offer credit guarantee schemes to reduce credit risk. This can spur a surge in retrofit projects, boosting the retrofit industry and contributing to Net Zero goals.

c. **Green bonds**: Green bonds are specific financial instruments designed to support climate or environmental projects. By supporting and encouraging the issuance of green bonds to fund retrofit projects, the UK can have a more stable long-term financial resource to help fund retrofits in an affordable and sustainable manner.

d. **Central data collection mechanism**: A centralised data source on energy performance standards, assessment methodology, and energy modelling. This centralised repository can instil confidence among financial institutions, investors, and homeowners by providing reliable, certified, and standardised information.

e. **Cross-industry partnerships**: For example, collaborations with insurance companies to develop specialised insurance products for retrofit. These tailored insurance

offerings mitigate perceived risks associated with retrofit investments, encouraging more homeowners and investors to participate.

f. **Stable long-term policies**: Implement stable and consistent policies that support retrofit and meeting Net Zero, ensuring businesses plan for the long-term. Long-term policy stability encourages sustained investments in green home financing. Businesses, knowing the regulatory landscape, are more likely to invest in research, development, and market expansion, leading to industry growth and innovation.

g. **Consistent regulatory standards**: Establish clear standards for retrofit, ensuring uniformity and quality, and removing conflicting regulations/standards. Our research showed a significant number of industry standards, accreditation schemes, trade bodies that have emerged within the retrofit industry each setting their own guidelines and standards. Uniform regulations streamline the industry, making it more efficient and accessible to all parties involved. Furthermore, it will help reduce fragmentation in the industry.

h. **Skill development and accreditation**: A skilled workforce enhances the quality of retrofit projects, leading to customer satisfaction and industry credibility. Trained professionals can efficiently execute projects, reducing errors and delays, and contributing to the industry's positive reputation.

9. Annex 1 – BIT Research Findings

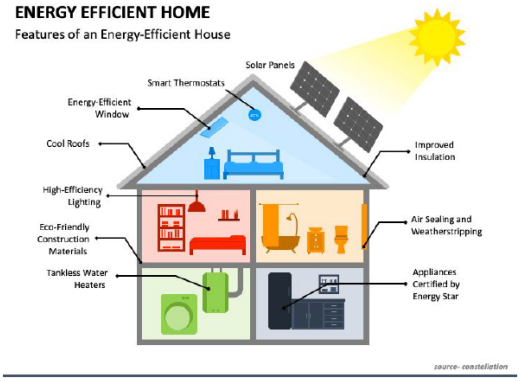
a. Participants journey through the experiment (select steps)

Participants were initially provided with a definition of home energy efficiency improvements

What is a home energy efficiency improvement?
Home energy efficiency improvements are modifications to a home that reduce the amount of energy needed to maintain a comfortable living environment. This can include:

- upgrading insulation
- replacing windows and doors
- improving ventilation systems
- installing energy-efficient appliances and lighting
- using renewable energy sources such as solar panels
- switching to efficient and clean heating systems such as a heat pump.

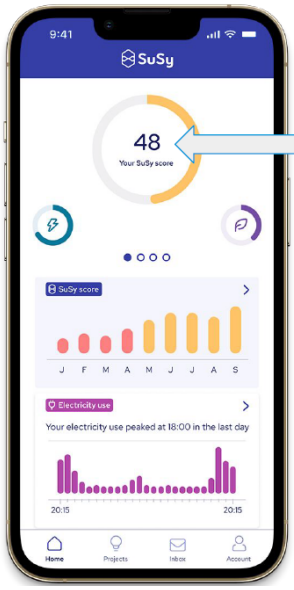
Improving a home's energy efficiency can result in **significant savings on energy bills**, while also reducing the **environmental impact** of the household. It can also improve the overall **comfort** of the home, and increase your **property value.**



12

They were then presented with information about the SuSy app and what it does

Imagine you are using this application to help you understand the energy efficiency of your home. It automatically uses data from your home's EPC (Energy Performance Certificate), about your home's existing construction and energy efficiency. It also analyses your energy use. This allows it to give you personalised recommendations for making your home more energy efficient.



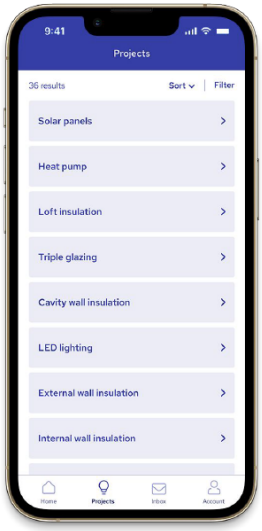
The 'SuSy' score shows your home's 'sustainability score' which is based on your home's EPC rating and energy use.

13

They were provided with context for the scenario

Imagine the app provides you with a detailed plan for upgrading your home.

It makes recommendations for different energy efficiency improvements. It also shows all costs, and the likely savings you'd see on your bills as a result, and the environmental benefits.



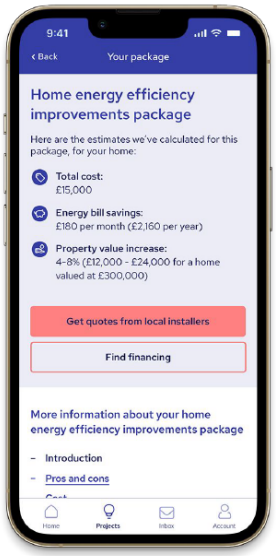
14

And were provided with a specific information relating to a hypothetical home energy efficiency improvement package before then being shown possible ways to finance the improvements

In your case, **suppose you receive a recommendation to install a home energy efficiency improvement package costing £15,000 in total.**

Upgrading your home in this way would:

- Save you around £180 per month (£2,160 per year) on energy bills
- Potentially increase the value of your property by 4-8% (£12,000 - £24,000 for a home valued at £300,000)



Participants then proceeded to the different arms of the experiments where they were shown a finance offer.

b. Measuring comprehension among participants

Comprehension of the scenario and impact of home energy efficiency improvements

% who correctly identified…	No Scroll / no grant (control) n = 1,025	No Scroll / grant n = 1,054	Scroll / no grant n = 1,016	Scroll / grant n = 907
…the total cost of the home energy efficiency package	91%	85%	89%	86%
…the £ increase in property value	93%	92%	92%	91%
…the energy savings they would expect to see each month	90%	90%	90%	90%

N = 4,002
Exploratory analysis. Logistic regression.
Green identifies statistically significantly ($p<0.05$) highest (or joint highest) within row.
Data collected by BIT on 9 - 30 June 2023.

Comprehension of the scenario was high. More than 8 in 10 correctly identified the total cost of the home energy efficiency improvement package, the £ increase in property value and the energy savings they would expect to see each month.

A higher proportion of those in arms without a grant were able to identify the total cost. This suggests that the addition of the grant information may have caused some confusion.

Overall this is a positive result - there is always some inattention from participants in online studies, which we do our best to filter out. This shows participants have engaged with the content, and adds validity to our results.

Understanding the difference between the personal loan and Scroll's line of credit

% who correctly identified…	Scroll / no grant n = 500	Scroll / grant n = 454*
…all statements for Scroll	46%	47%
…no payments in the first 12 months	77%	77%
…payment terms within 25 years	71%	76%
…secured against an asset	69%	69%
… no early repayment terms	66%	64%
…all statements for the personal loan	44%	42%
…higher interest rates	78%	77%
…payment terms within 5 years	72%	75%
…need to borrow the entire value from the start	55%	56%

** The responses on this slide are:*
(1) from 1,991 participants (half of our total sample sample) we needed to test participants' understanding of the financial offers in more detail than only looking at free text responses.
(2) from the participants who saw both Scroll and the personal loan

Participant understanding of all aspects of the loan and Scroll's line of credit was, as expected, slightly lower. A lot of information was presented, and some of this was more complex, or depended upon understanding some financially-literate terms.

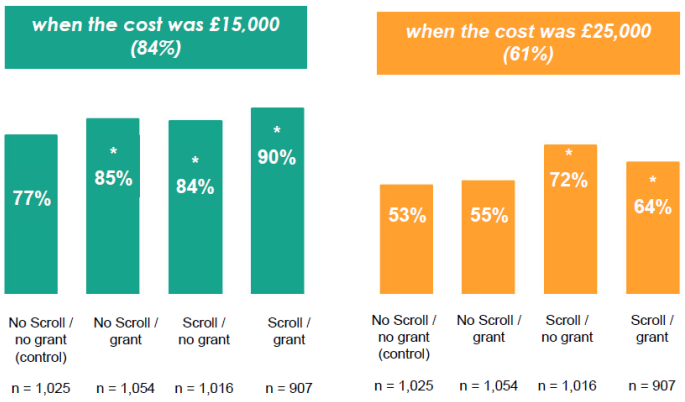
In this context, **participant understanding is still quite high**. However even more importantly, it is comparable between Scroll's line of credit and the personal loan, meaning we are making a fair comparison - i.e. we are not biasing results purely as a result of one product being more easy to understand than the other.

Data collected by BIT on 9 - 30 June 2023.

c. Select key research findings

Can Scroll unlock retrofits? - Intended uptake of home energy improvements

% who would install home energy efficiency improvements



N = 4,002
Primary analysis. Logistic regression including covariates. Corrected for multiple comparisons. The control group is the reference group in this analysis.
** p < 0.01, * p < 0.05, + p < 0.1
Data collected by BIT on 9-30 June 2023

When the total cost of the home energy efficiency improvement was £15,000, the Scroll offer increased uptake by 7pp, while the grant increased intent by 8pp. Both are statistically significant. Combined, intent to adopt increased by 13pp, also significant. **This shows the grant and scroll have a similar impact to each other, and an additive impact when combined.**

When the cost increased to £25,000, The Scroll offer **significantly increased intent by nearly 19pp**, showing the importance of good finance terms when borrowing larger sums. **In contrast, the grant had no significant impact** on its own, and no additive impact when combined with Scroll.

Overall, intent was higher (84% vs. 61%) for the lower-cost retrofits.

Reasons why people chose Scroll

Among those who said they would use **Scroll** (n = 744 out of 1,923 people who saw Scroll; 39%)

Among those who said they would use the **personal loan** (n = 925 out of 4,002; 23%)

Among those who said they would use their **cash savings** (n = 1,227 out of 4,002; 31%)

Among those who said they would **not proceed** (n = 645 out of 4,002; 16%)

Among those who said they would use **other means** (n = 461 out of 4,002; 12%)

Why would you use Scroll? (n = 744) (% = proportion of participants that selected this as one of their top 3 reasons)	**Scroll / no grant** n = 1,016	**Scroll / grant** n = 907
Attractive interest rate	67%	68%
Can pay it back over a longer period of time	62%	58%
Low monthly repayments	59%	58%
Has a 1 year payment holiday feature	44%	45%
Flexible drawdown and repayment features	37%	39%
Can withdraw money from the loan amount as needed rather than taking the entire loan at once	30%	30%
Other (incl. no early repayment fees, better value and the ability to combine with other financial products)	1%	3%

Numbers are descriptives only. No significance testing.
Rows highlighted in red indicate the top three reasons.

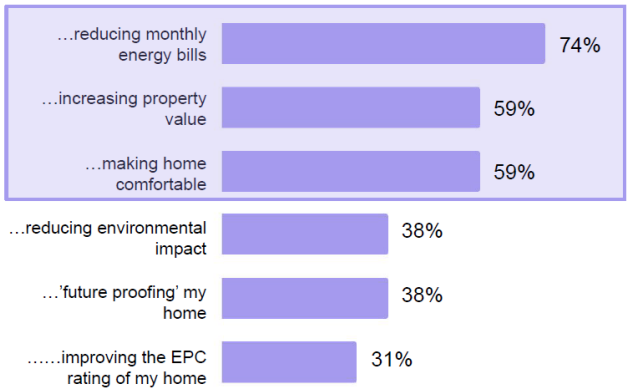
The low interest rate, low monthly payments and the ability to pay it back over a longer period of time were the top reasons for using Scroll to pay for the energy efficiency improvements.

Generally, the proportion of people selecting each factor was similar for people who saw Scroll with and without the grant.

Participants could select multiple answers for reasons why.
Data only includes choices only after seeing the £15,000 total cost.
Data collected by BIT on 9 - 30 June 2023.

Benefits of installing energy efficiency improvements

% who find the following benefits of home energy efficiency improvements most attractive (n = 4,002)
(selected as one of top 3)



Items highlighted in purple indicate the top three most attractive benefits of home energy efficiency improvements.

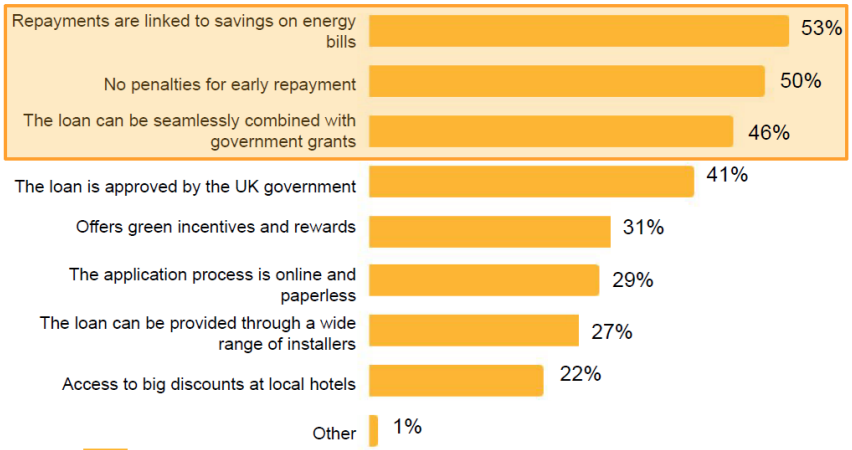
Most people recognised the benefits of home energy efficiency improvements, with **more than 7 in 10 saying that home energy efficiency improvements can reduce their monthly energy bills.**

Only around 3 in 10 selected 'future proofing' or reducing environmental impact or the EPC of their home as important benefits to installing energy efficiency improvements.

Data collected by BIT on 9 - 30 June 2023.

Desired characteristics of specialist home energy improvement loans

% who find the following benefits most attractive, making them more likely to use specialist loans (n = 4,002)
(selected as one of top 3)



Items highlighted in orange indicate the top three most attractive benefits of specialist loans.

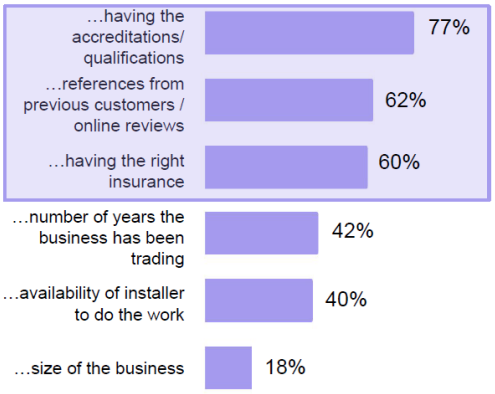
Links to monthly energy savings are popular. Interesting, this was the basis of the UK's aborted 'green deal' - which had a good idea underpinning it, but was very poorly implemented. There could be scope for a private-sector revival of this PAYS scheme.

No early repayment penalties and the ability to use with government grants were also among the most attractive benefits to using specialist loans.

Data collected by BIT on 9 - 30 June 2023.

Desired characteristics of installers of energy efficiency improvements

% who would find the following useful when selecting an installer (n = 4,002)



Items highlighted in purple indicate the top three most useful pieces of information when selecting an installer.

People want reassurance in terms of the capability and quality of installers.

This is consistent with one of the top barriers identified earlier - risk of getting poor results.

Having the installer's accreditations / qualifications was the most desired characteristic when selecting installers. This was followed by reviews from previous customers and installers having the right insurance.

Data collected by BIT on 9 - 30 June 2023.

Intended uptake by subgroup

% of homeowners who said they would install energy efficiency improvements (and use the Scroll offer)…			**84%**	**(39%)**	
	Gender	Male† (n = 1,961)	**87%**	**(36%)**	**Men: 4 percentage points less likely to use the Scroll offer to finance the installation of energy efficiency improvements.**
		Female (n = 2,027)	**81%***	**(41%*)**	
	Age	Under 25† (n = 481)	**93%**	**(39%)**	**Homeowners aged under 25: 8 percentage points more likely to install energy efficiency improvements, but 6 percentage points less likely to use Scroll to finance them (compared to aged 25 to 54).**
		25 to 54 (n = 2,591)	**85%***	**(45%*)**	
		55 and over (n = 1,030)	**77%***	**(24%)**	
	Household Income	Less than £40,000† (n = 1,982)	**83%**	**(37%)**	There were no significant differences in intentions to install home energy efficiency improvements, or to use Scroll to finance them, for people with lower vs higher income.
		£40,000 and over (n = 2,020)	**85%**	**(40%)**	
	Intended future time at home	5 years or less† (n = 1,425)	**87%**	**(39%)**	**Homeowners who intend to live in their home for less than 5 years: 5 percentage points more likely to install energy efficiency improvements.**
		More than 5 years (n = 2,577)	**82%***	**(38%)**	

Differences in intent between subgroups. †reference category. *statistically different ($p<.05$) differences in intent.
Exploratory analysis. Not corrected for multiple comparisons.
Data collected by BIT on 9-30 June 2023.

Intended uptake by subgroup (incl home characteristics)

% who said they would install energy efficiency improvements (and use the Scroll offer)…		**84%**	**(39%)**	
 **House type**	Detached house† (n = 1,144)	86%	(36%)	**Owners of detached houses: 2-4 percentage points more likely to install energy efficiency improvements, but 2-5 percentage points less likely to use Scroll to finance them (compared to homeowners of semi-detached and terrace houses).**
	Semi-detached house (n = 1,562)	84%*	(41%*)	
	Terrace house* (n = 851)	80*%	(38%*)	
	Other* (n = 472)	88%*	(41*%)	
 **EPC rating**	Good (A, B, C)† (n = 1,817)	90%	(41%)	**Homeowners with good EPC ratings: 6 percentage points more likely to install energy efficiency improvements (possibly because they have experienced the benefits first-hand compared with people who have less-efficient properties and are unaware of the benefits of improving the efficiency of their home), and 2 percentage points more likely to use Scroll to finance them (compared to those with poor EPC ratings).**
	Poor (D, E, F) (n = 716)	84%*	(39%)	
	I don't know (n = 1,469)	77%*	(36%*)	
 **Household size**	Less than 3 people† (n = 1,779)	80%	(31%)	**Homeowners who live in smaller households: 7 percentage points less likely to install energy efficiency improvements, and 14 percentage points less likely to use Scroll to finance them (compared to those living in bigger households).**
	3 people or more (n = 2,223)	87%*	(45%*)	

* 'Other' combines purpose-built homes, converted homes, flats and apartments. This is because these categories have very small sample sizes.

Differences in intent between subgroups. †reference category. *statistically different (p<.05) differences in intent.
Exploratory analysis. Not corrected for multiple comparisons.
Data collected by BIT on 9-30 June 2023.

Breakdown of sample: landlords

15% of our sample were landlords. Of those…

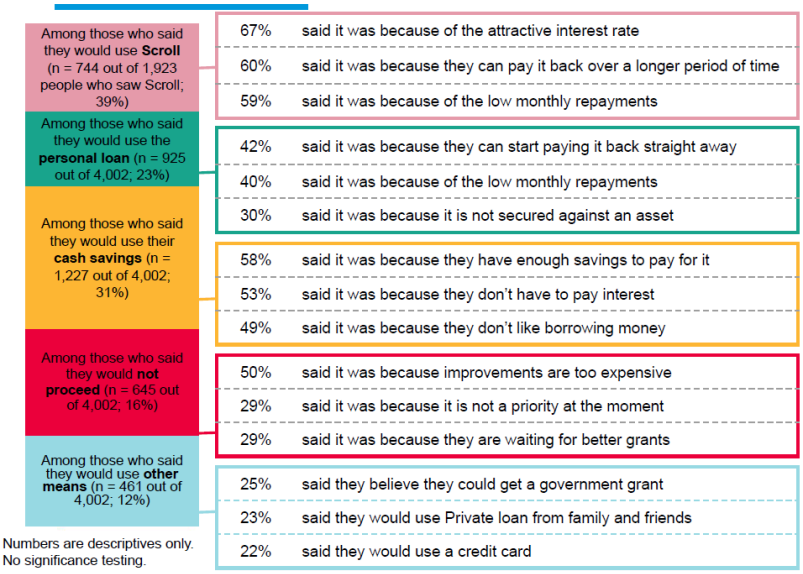
…**49%** rent out 1 property,

…**35%** rent out 2-3 properties and

…**16%** rent out more than 3 properties

62% of the landlords are willing / planning to improve the energy efficiency of their rented properties

Appendix - Overview of top reasons why people made their choices



Numbers are descriptives only.
No significance testing.

The low interest rate, low monthly payments and the ability to pay it back over a longer period of time were the top reasons for using Scroll to pay for the energy efficiency improvements. **For those who chose to use the personal loan (23%), the most commonly selected reasons were the ability to start paying it back straight away, the low monthly payments and the loan not being secured.**

Around **3 in 10** said they would use their cash **savings** to pay for the improvement, mainly because they **have the savings to pay for it themselves.**

16% said they would not install any energy efficiency improvements to their home, with 5 in 10 saying that is because home energy improvements are **too expensive.**

12% said they would use other means, such as a government grant or a loan from friends and family.

N = 4,002
Participants could select multiple answers for reasons why.
Data only includes choices only after seeing the £15,000 total cost.
Data collected by BIT on 9 - 30 June 2023

Annex 2 – GFI's Green Home Finance Principles

GFI's Green Home Finance Principles