



Department for
Energy Security
& Net Zero

Green Home Finance Innovation Fund Impact Evaluation

Final Report: Annex B – Case Studies

DESNZ Research Paper Series Number 2023/034

July 2023

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Acknowledgements

The department for Energy Security & Net Zero commissioned Technopolis in collaboration with IFF Research, and EREDA Consultants to conduct a process, impact and economic evaluation of the Green Home Finance Innovation Fund (GHFIF) programme. This report follows on from the Process Evaluation completed in November 2021 and encompasses the final impact and economic evaluation of the GHFIF programme.



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Chapter 1. Introduction

This annex was developed during the 2nd phase of the evaluation of the Green Home Finance Innovation Fund, as supplementary information to the impact evaluation report. This stage of the evaluation follows the phase 1 evaluation research on programme processes¹. This annex sets out three project case studies and three benchmark case studies.

Evaluation overview

The Department for Energy Security and Net Zero (DESNZ, hereafter referred to as the Department, formerly the department for Business Energy and Industrial Strategy, BEIS) appointed Technopolis in collaboration with IFF Research, and EREDA Consultants to conduct a process, impact and economic evaluation of the Green Home Finance Innovation Fund (GHFIF) programme. The Invitation to Tender (ITT) presented four aims of the evaluation:

1. Determine how well the GHFIF programme objectives, as described in the Business Case, have been delivered.
2. Provide evidence to understand the barriers to delivery of benefits the programme failed to overcome and/or things that could have been done better in design and delivery of the programme to deliver benefits going forward.
3. Trace the different innovations that have taken place in the development and piloting of green home finance products and generate evidence on how the design and implementation of financial products influenced the scale and nature of outcomes achieved.
4. Provide evidence of the outcomes and impacts achieved by the programme, to support both benefits reporting and the design of future green finance programmes.

As a result of a preceding scoping study, the Department established a series of high-level evaluation questions that the study will need to answer. A full list of sub-questions was included in the ITT and scoping report accompanying the ITT. In summary, the four high-level evaluation questions the evaluation aims to address were:

1. To what extent, and in what ways, have the activities and outputs of the three funded consortia translated into progress through the six outcome pathways and four impact pathways?
2. To what extent, and in what ways, have the outcomes generated by the GHFIF programme translated into wider impacts on the green finance for energy efficiency industry?

¹ Green Home Finance Innovation Fund Process Evaluation. www.gov.uk/government/publications/green-home-finance-innovation-fund-evaluation

3. Has the GHFIF programme and the projects supported been implemented as intended, and was their design and implementation appropriate to achieving the intended objectives?
4. To what extent have the projects and the programme overall demonstrated value for money?

Refer to the evaluation main report for a detailed account of the GHFIF programme background.

Case study methodology is covered in depth in Annex A to this impact evaluation report.

Chapter 2. GHFIF Project Case Study: Add to My Mortgage

Summary

The Add to My Mortgage (ATMM) project sought to create an online digital platform that could facilitate additional borrowing in mortgage applications at point of sale of energy efficiency measures. GHFIF awarded a grant of £1,064,960 to the project. The ATMM project was led by a Small Medium Enterprise (SME), Home Infrastructure Technology (HIT), along with one lender, NatWest, as a formal partner but with an intention to work with other lenders throughout the project.

The main project objectives were to: build the online platform, onboard one 'big six' mortgage lender and 180 energy efficiency vendors onto the platform, process 1,600 applications for additional borrowing and facilitate £15 million of loans for energy efficiency measures.

The Add to My Mortgage platform is now operational, after a delay in the Financial Conduct Authority (FCA) regulatory approval process pushed back its initial launch by several months. By the project's closure, HIT have three 'big six' lenders and 17 vendors onboarded. It has successfully delivered 80 loans for solar panel and heat pump retrofits, equating to £700-800,000 of additional borrowing. However, vendors have been reluctant to use the platform since project closure after some applications took several months for lenders to process for additional borrowing. As such, the project met its first objective, exceeded the second but fell somewhat short of the last two objectives.

HIT plans to scale up the platform by offering a bespoke loan product directly to homeowners. This offer is currently being developed using a grant from the Heat Pump Ready Programme, funded under the Net Zero Innovation Programme.²

Project Objectives

The ATMM project aimed to develop and test an online digital platform on which vetted energy efficiency retrofit installers (hereafter 'green vendor') could present to their customers alongside a quotation for a retrofit. The platform allows the customer to add an additional borrowing application onto their existing mortgage (if their mortgage is with a participating lender). The project involved the technical development of the ATMM platform, onboarding lenders and vendors, and piloting the platform with real-world homeowners.

² www.gov.uk/government/publications/heat-pump-ready-programme

Project Consortium

Project Lead: Home Infrastructure technology

HIT led the ATMM project. HIT was founded by the directors of Be Warm (an SME providing long term financing plans for gas boilers) with the aim to develop the Add to My Mortgage platform to provide long term financing for heat pumps and solar home systems.

Project Partner: National Westminster Bank (NatWest)

NatWest were the only formal partner on the project at the time of application. They are part of the RBS group, one of the big six mortgage lenders that together cover the vast majority of the UK mortgage market.

Partnership

In the leadup to the application deadline, NatWest were approached by HIT about trialling the platform and agreed to be a formal project partner. NatWest engaged with HIT at various points during the GHFIF project life and are still in discussions focused on issues around green home retrofit finance. However, during the lifespan of the project, it became clear that to act as an intermediary for NatWest, further regulatory approvals would be required. NatWest were not heavily involved in the development of the ATMM platform and did not receive any GHFIF funding in line with the original application.

Overview of project activities undertaken

The project officially started in February 2020 and was initially scheduled to run through until 31st March 2021. The project received a 1-year extension in light of the implications of the COVID-19 pandemic. HIT was awarded a total grant of £1,064,960. Using these funds, HIT undertook six key workstreams between February 2020 and 31st March 2022:

- **Partnering with mortgage companies:** HIT engaged with all the big six³ lenders active on the UK mortgage lending market and several smaller lenders in efforts to partner with them, onboarding three of the 'big six lenders' and several smaller lenders during the project.
- **Recruit, undertake vetting process and manage green vendor relationships:** Throughout the project, HIT engaged different segments of the energy efficiency retrofit installer market, including through the Microgeneration Certification Scheme (MCS). This involved vetting 17 installers, onboarding them onto the platform and liaising with them when issues were encountered.
- **Design and develop customer journey:** HIT developed and refined the ATMM platform to allow for a digital customer journey for additional borrowing.

³The big six are. Lloyds Banking Group (LBG), Nationwide, Royal Bank Scotland (RBS), Santander, Barclays and HSBC. This includes their subsidiary brands such as Halifax as Part of LBG and NatWest as part of RBS.

- **Build a directory of green vendors:** HIT also built supporting modules that would allow lenders to connect their customers to approved green vendors through the ATMM platform, but no lenders have used this module thus far.
- **Gain regulatory approval from the FCA:** HIT submitted two applications to act as agent/intermediary of a regulated 'principal', building systems to ensure compliance with these regulations.
- **Test the platform with real world customers:** During the project, green vendors presented the ATMM platform as an option to their customers, some of whom made applications which HIT then managed through the platform. This included managing any issues between installer, customer and lender to facilitate the finance and retrofit.

Project achievements

Progress towards stated objectives

At the point of application, the ATMM platform was considered a 'greenfield' research/innovation opportunity, at technology readiness level (TRL) 2, with little to no development of the solution. The application laid out an ambitious plan for the ATMM platform to not only be built but also be achieving a high through-put of lending by the end of the project. HIT have developed and achieved the technical capability of the platform and have demonstrated its ability to provide finance to real-life customers, though the volume of loans is still significantly lower than the initial ambition.

The following table presents key objectives/aims set out in the application and highlights the progress against them. Sections 5.2-5.4 explore in more detail what has been achieved, how this progress was made, barriers that may have limited progress and enablers that have supported the project to achieve its stated outputs, outcomes and progress towards future impacts.

Table 1. RAG Rated Table of project objectives.

Objective	Summary of Progress made
To sign up and onboard c.180 Green Vendors	A total of 17 vendors were onboarded onto the platform during the ATMM project. (Amber)
For these Green Vendors to offer "Add To My Mortgage" to their customers	Vendors have offered customers Add To My Mortgage during the trial, however the use of the platform dropped over time. (Green)
For the Digital Platform to complete c.1,600 applications for additional borrowing	Several hundred applications have been made through the ATMM platform, but not all of these were approved by the lender and some were withdrawn by customers (Amber)

Objective	Summary of Progress made
Leading to over £15 million of green measures installed in UK homes	80 applications approved by Project end, with a small number of applications made since project closure. Based on average loan amounts, this should equate to approximately £700-800k of additional borrowing delivered. (Amber)
To demonstrate ongoing recurring trade and revenue generating capacity of the platform,	Add to My Mortgage showed an initial appetite for use of the platform, however trade has slowed since project end due to slow processing of additional borrowing, and current disruption in the mortgage market. (Amber)
To build a digital end-to-end additional borrowing capability with at least one “Big 6” mortgage lender.	Three of the big six (Lloyds Banking Group, Nationwide, Barclays) alongside several smaller lenders were operating on the platform. (Green)

* Red = No progress made towards objective Amber = Progress made towards objective/objective partially met, Green=Objective Met or exceeded.

Project outputs

HIT have demonstrated the technical capability of their platform during the lifetime of the GHFIF project. Since then, the platform thus far facilitated additional borrowing on 80 retrofits, with an average loan of £9-10,000. The type of retrofits range from installation of solar PV systems and heating upgrades using heat pumps. There is limited evidence on the extent to which this finance was a determining factor in householders' decisions to undertake retrofits. HIT indicated they expect that this finance was primarily being used by people who were already getting retrofits, but there was anecdotal evidence that a subsection of this group expanded the scale of planned retrofits.

HIT representatives stated that the platform would not have been developed without the GHFIF grant or other sources of public innovation funding, given the platform was very much at the concept stage and would have been seen as highly risky by private sector investors.

Barriers faced

Gaining regulatory approval

The nature of the ATMM platform meant that HIT needed approval from the FCA to operate their platform with real customers. The first attempt to gain approval was through an established route for innovative firms known as the regulatory sandbox. HIT's initial application was rejected, receiving feedback that FCA had viewed mortgages regulation as an area not suitable for this innovation mechanism. Therefore, HIT had to seek approval to act as an authorised representative of a regulatory principal - a process that resulted in significant delays to the project. It took over a year to be assigned a case manager and subsequent regulatory approval in the final few months of the project. Until then, no loans could be provided via the platform, leading to knock on delays and project requests for extensions. HIT had expected

this process to be a challenge going into the project, however gaining regulatory permissions proved slower and more difficult than anticipated.

COVID-19 disruption to both lending and retrofit sector.

COVID-19 caused major disruption at various points throughout the project, both in the banking and retrofit sectors. Resources within the banking sector, particularly within mortgage teams, had to be devoted to mitigate wider issues on the impact of COVID-19. As a result, HIT struggled to arrange meetings with relevant contacts at lender organisations and the process of onboarding them was slowed down and more resource intensive than anticipated. In the retrofit sector, the green vendors were not able to enter properties to carry out works for several months. This disruption however coincided with delays relating to the FCA regulatory approval process, therefore having limited impact.

Slow-moving processes within the lending sector

The third key barrier was the general timelines in the mortgage lending sector. This presented itself in two ways.

Firstly, HIT found that onboarding larger lenders (i.e. the big six) onto their platform was a slower process than they had expected due to the sector operating on longer timescales for decision making and often involving strict approval procedures and managerial sign-offs.

Secondly, lenders took considerable time to process additional borrowing mortgage applications - additional borrowing applications take 90 days as standard but in practice many have further delays in the underwriting process. Alongside this, the necessary requirements that some customers had to fulfil, were seen as onerous by some vendors and homeowners (e.g. one customer had to have a specific surveyor visit and was given only one possible time slot). With these long lead times and complex compliance requirements, some retrofits had to be delayed, prices of materials and labour changed compared to quotes and some customers pulled out altogether. In a small number of cases vendors on ATMM platforms absorbed these price increases, making losses to preserve reputation.

To manage these challenges, HIT are in discussions with lenders on an ongoing basis. Two options to mitigate this are being developed. The first is for the platform to be used in reverse, with banks being able to direct pre-approved customers to the platform to then facilitate connection to vetted vendors. The second option being HIT developing their own bespoke loan product which could be offered directly, providing greater control over the speed of checks and requirements on borrowers (see *Trajectory towards future outcomes and impacts section*).

Realised outcomes and impacts

In the original GHFIF Programme Theory of Change (ToC), the ATMM project was expected to contribute to policy learning around green finance within the department, enhanced incentives for energy efficiency product vendors (through a lower friction method of accessing mortgage additional borrowing) and more widespread knowledge of energy efficiency amongst homeowners or lenders.

Policy Learning Pathway

Department of Energy Security and Net Zero policy-makers experience of observing and interacting with the leads of the ATMM and the VALUER projects fed directly into decisions on the design of the successor Net Zero Innovation Portfolio programme, the Green Home Finance Accelerator (GHFA), about the eligibility and focus of the programme. Specifically, the success of ATMM project encouraged the promotion of the GHFA to a wider range of applicants and also to widen its objectives to encourage partnerships across the value chain in development of new technologies.

Lenders Knowledge in Energy efficiency

HIT reported engagement and dissemination activities with most lenders on UK market across the traditional big six lenders (e.g. Lloyds, Nationwide), smaller banks, building societies (e.g. Hinckley and Rugby Building Society) and the digital challenger banks (e.g. Sterling). This awareness was confirmed in several interviews with non-GHFIF participating lenders.

We have observed little evidence that this awareness or interactions with HIT influenced lenders' overall knowledge or approach to energy efficiency in a significant way – although it is noted that the lenders in our interview sample are only a subset of those who have engaged with HIT.

Energy Efficiency Vendor incentives pathway

Interview findings suggest HIT alone is unlikely to provide sufficient incentive for energy efficiency vendors to launch new products and reduce prices, due to the current low volume of trade and the small proportion of vendors on the platform.

Homeowner knowledge in Energy efficiency

Anecdotal evidence from lender and market expert interviews and consumer research conducted within the evaluation suggest increased interest in and knowledge of energy efficiency measures by homeowners. Primary drivers of this appear to be primarily associated with the cost of living and energy bill increases, rather than any activity by the ATMM project.

Trajectory towards future outcomes and impacts

HIT have received follow on funding from the Heat Pump Ready Programme⁴ under the Net Zero Innovation Portfolio⁵ and raised a further round of equity investment during the project. HIT plan to use these funds to develop and pilot a green homeowner loan offer linked to the platform. The anticipated product offering would have similar characteristics to those offered by the lenders signed up to the platform but would be offered by HIT directly, providing control over affordability checks, criteria and underwriting to ensure the process would be more aligned with the timescales required by the home improvement retrofit industry.

⁴ The Heat Pump Ready Programme supports development of innovative solutions across the heat pump sector. For further information about the programme please visit: www.gov.uk/government/publications/heat-pump-ready-programme

⁵ For further information on Net Zero Innovation portfolio please visit: www.gov.uk/government/collections/net-zero-innovation-portfolio

Alongside this, HIT are in discussions with lenders on their platform about improvements to the service which could resolve some of the issues faced by green vendors using the platform. HIT recognised the need to provide reassurance to these businesses that applications will be assessed and returned within suitable timelines. There are also initial discussions about operating a lender-push model in which lenders could direct existing mortgage holders to suitable vendors via the ATMM platform.

Overall, there is evidence that HIT is continuing to develop the ATMM platform and improve the customer journey for retrofit finance. Any future potential for scale up and widespread impact on the mortgage market will be dependent on HIT's ability to reduce the time between a borrowing application and its approval in order to provide confidence to vendors that their customers will receive a smooth journey through the ATMM.

Key Lesson learned

- Managing the delays relating to FCA's regulatory approval process: Any future projects planning to apply for regulatory approval processes should consider risks due to potential delays.

Chapter 3. GHFIF Project Case Study: Green Home Mortgage

Summary

The Green Home Mortgage project aimed to develop a retrofit mortgage product and an associated energy retrofit educational tool for consumers. The Green Home Mortgage project was awarded a grant of £299,172. The project was led by Lloyds Banking Group (LBG) with one partner organisation, Energy Savings Trust, leading development of the educational tool.

The project's objectives were two-fold. Firstly, to raise consumer interest in and understanding of home energy efficiency improvements, and secondly to launch a mortgage-linked incentive to encourage energy efficient home improvements and help with the costs of retrofit solutions.

The project accomplished all of these stated objectives. LBG launched the retrofit mortgage product, the Green Living Reward (GLR), which offered mortgage borrowers a £500 cashback incentive when they completed one or more eligible home improvements using a TrustMark certified provider by a specific date. With Energy Saving Trust, LBG also developed and published an online "Green Living Hub" which included a home energy saving tool (HEST). HEST is a free online tool for estimating consumers' energy bills and provides an action plan for making homes more energy efficient. Over 8,300 action plans were created during the lifespan of the GHFIF-funded project.

This pilot assisted LBG in determining that there was customer interest in green home finance products on the market. This informed LBG's decision to retain the GLR cashback incentive for energy efficiency improvements.

Further improvements to the GLR have been made. For example, the level of cashback incentive for installation of heat pumps has now been increased (up to £1,000).

Introduction to the project

The Green Home Mortgage Project, delivered by Lloyds Banking Group (LBG), aimed to develop a green mortgage product and an educational tool to encourage homeowners to undertake energy efficiency retrofits. The LBG Green Home Mortgage Project had the following key objectives:

- Raise consumer interest in and understanding of home energy efficiency improvements by introducing an engaging home energy saving tool that allows users to create a bespoke plan for improving energy performance of their home. Within this, LBG also aimed to:
 - Identify and comprehend different homeowner segments behaviour and attitudes towards energy efficiency.

- Identify which segments are most likely to take action to retrofit their home.
 - Develop a partnership with the Energy Saving Trust to help raise consumer awareness.
- Launch a mortgage-linked incentive to encourage energy efficient home improvements and help with the costs of retrofit solutions.

Partners involved

Project Lead: Lloyds Banking Group

Lloyds Banking Group (LBG) is the largest UK retail and commercial financial services provider with around 27 million customers and a presence in nearly every community, including financing one in five mortgages in the UK. LBG's main business activities include retail and commercial banking, general insurance, and long-term savings, provided through well recognised brands including Lloyds Bank, Halifax, Bank of Scotland, and Scottish Widows. This project's GLR proposition and Green Living Hub were piloted through the Halifax Brand.

Project partners

Energy Saving Trust

Energy Saving Trust is a profit-for-purpose organisation dedicated to addressing the climate crisis. The organisation provides independent energy saving advice with a focus on communicating and engaging with people about efficient energy use, energy saving products, renewable energy technologies and sustainable behaviour. The Home Energy Saving Tool (HEST), created in collaboration with LBG, was based on Energy Saving Trust's own energy savings calculator tools.

Partnership Narrative

This was the first time that LBG and Energy Saving Trust had worked together. LBG decided to partner with Energy Saving Trust for the GHFIF to produce a bespoke home energy efficiency web based educational tool, to form a part of LBG's online Green Living Hub offering.

Overview of project activities undertaken

LBG reported that during the Green Home Mortgage Project (July 2019-March 2021), they carried out the following initiatives with the support of GHFIF funding:

- **Develop and launch Green Living Hub:** LBG developed the 'Green Living Hub', which provides key explainers and information on energy efficiency to Halifax customers. This included Energy Saving Trust developing a home energy saving tool (HEST) for the hub.

- **Design and pilot of Green Living Reward (GLR):** LBG introduced the Green Living Reward, an incentive where eligible direct Halifax mortgage customers received cashback for energy efficiency improvements. The project offered mortgage borrowers a £500 cashback incentive when they made one or more home improvements from a pre-selected list, using a TrustMark registered supplier.
- **Building the mortgage application journey:** LBG made system developments to embed the registration process for the Green Living Reward into the mortgage customer journey, rather than creating a separate process
- **Customer research:** LBG undertook customer research to gauge levels of interest in a sustainable mortgage proposition. Initial quantitative exploratory research was conducted with 3,600 respondents that reflected all key customer segments⁶. This explored the attitudes and sentiment towards sustainability more widely. A mixture of focus groups and an online quantitative survey completed by 816 homeowners was conducted.
- **Staff training and internal capability development:** LBG trained their staff on home energy efficiency, understanding government grant funding schemes and eligible measures under the Green Living Reward in addition to operational processes of administering the green incentive.
- **Marketing:** LBG launched marketing activity to promote the Green Living Hub, the HEST and the Green Living Reward via standard marketing tools (both direct and online).

Project achievements

Overall, the project successfully met all the objectives presented in the original project application form. LBG has used the GHFIF to accelerate product development from the initial idea to launching a first retrofit incentive product. Through the market research and pilot project, LBG gained a detailed understanding of the perspectives of their customers which its sustainable propositions team are using to develop products and strategies going forward.

Table 2 Achievements Against Objectives (RAG)

Objective	Summary of Progress made*
Raise consumer interest in and understanding of home energy efficiency improvements by partnering with EST to introduce an engaging home energy saving tool	LBG launched a home energy saving tool in collaboration with Energy Saving Trust and launched it via their Green Living hub. Over 8,300 action plans were created during the lifespan of the GHFIF-funded Project (Green)

⁶ As identified by the Financial Services Customer Segmentation tool (FRESCO).

that allows users to create a bespoke plan for their home	
Launch a mortgage-linked incentive to encourage energy efficient home improvements and help with the costs of retrofit solutions	Through Halifax, LBG piloted the Green Living Reward (GLR) which offered mortgage borrowers a £500 cashback incentive when they made one or more eligible home improvements, initially requiring the use of a TrustMark registered supplier. (Green)

* Amber = Progress made towards objective/objective partially met, Green = Objective Met or exceeded.

Project outputs

The GHFIF grant allowed LBG to collaborate successfully with Energy Saving Trust and create an educational tool for consumers that was used across LBGs online information hubs. The Green Living Hub continues to provide information on retrofit availability to UK homeowners. These updates have included regular articles as well as virtual events on energy efficiency and 'green living'. Through this platform, LBG and Energy Saving Trust have continued their partnership, with Energy Saving Trust and LBG jointly hosting a series of virtual educational events for LBG customers. They also provide updates to the HEST as the costs and benefits of energy efficiency improvements change.

The GHFIF aided the establishment of a relationship with TrustMark, which allowed LBG to direct customers using the Green Living Reward toward using a TrustMark supplier. This relationship provided LBG with a better understanding of the retrofit supply chain. In the pilot, LBG required customers to use a TrustMark approved installer to receive a reward. However, towards the end of the project in early 2021, that condition was lifted on an ad hoc basis, before being removed entirely from the product. This is a direct result of customer feedback through the GHFIF-pilot, where customers experienced challenges at the time in finding TrustMark verified suppliers, particularly for some of the smaller upgrades and depending on the region.

LBG used the GHFIF to support the product development of their first retrofit incentive, the GLR. The GLR offered mortgage customers £500 cashback when they made one or more eligible home improvements, initially requiring the use of a TrustMark registered supplier.

Following the project, LBG has continued to develop further iterations of the GLR. This includes teaming up with retrofit suppliers to support customers with the installation of their home improvements and increasing the value of the cashback to £1,000 for heat-pumps.

Barriers faced

COVID-19 disruption

The pandemic delayed the project for almost a year. This had significant effects on tracking the impact of home improvement retrofits and the roll out of mortgages. In order to prevent having to make several trips during the pandemic, LBG had to cut back their initial intention to perform EPC checks after the retrofit operations. Additionally, tradespeople were less available to undertake work for consumers because of a backlog of building work during the pandemic.

Consumer Trust

Interviews with mortgage advisors suggested that consumer trust is another significant barrier that affects whether or not banks are perceived by customers as reliable advisors. However, direct consumer research found the opposite – this suggests that consumers' felt comfortable signing up to the mortgage because they trusted Halifax advisors. This trust came from past experiences with Halifax which gave them a positive impression of Halifax as a brand, and their existing relationships with Halifax advisers.

Realised outcomes and impacts

Key realised outcomes

The total uptake of the GLR exceeded the target set out in the pilot objective of the GHFIF trial. Customers are expected to benefit from lower CO₂e emissions and energy savings, although we are unable to quantify the level of energy savings that can be attributed to the GLR.

Notably, following the February 2023 relaunch of the GLR, there has been an increase in consumer registrations compare to the initial GHFIF-supported pilot. Further, it is common in more recent promotions for the GLR to be claimed for more expensive improvements, including solar panels which were added to list of eligible improvements for the second iteration of the promotion.

Lenders' knowledge in energy efficiency products and solutions pathway

The LBG GHFIF project helped increase understanding of home energy efficiency in two main ways:

- **Improved understanding of customer sentiment around energy-efficiency:** The quantitative consumer research with 3,600 respondents reflected all key customer segments⁷. The insights from this research have supported the sustainable propositions team in understanding customer sentiment around energy-efficiency and key barriers to action.
- **Staff training and internal capability development:** LBG trained its staff on home energy efficiency, understanding government grant funding schemes and eligible measures under the GLR, in addition to operational processes of administering the green incentive.

⁷ As identified by the Financial Services Customer Segmentation tool (FRESCO).

Sustainability of Products

LBG has launched two further iterations of the GLR since the end of the project. When relaunching the product in February 2022, Halifax increased the reward to £1,000 for customers who undertook a heat pump retrofit. When combined with the current £7,500 Government Boiler Upgrade Scheme (BUS) grant, the initiative may reduce the cost of heat pump installation to a level lower than for a gas boiler for some houses. LBG has since teamed up with retrofit suppliers to support customers with the installation of their home-improvements. Finally, the list of eligible improvements for the reward has been updated. The eligibility had initially been designed to reflect the improvements eligible through the Green Homes Grant⁸, but this has since widened to include allowing solar photovoltaic (PV) panels and solar battery storage.

Homeowner knowledge in Energy efficiency

LBG has added to the information available to consumers. Over 8,300 action plans were created through the HEST in the period between June 2020 and July 2021. This has provided information and next steps for consumers on how to improve the energy efficiency of their home. Despite the volume of action plans indicating an appetite for guidance relating to home energy efficiency improvements from our customers, at this stage it is difficult to ascertain the extent to which this information has significantly changed or lowered the barriers to a homeowner or landlord undertaking an energy efficiency retrofit.

Networks and relationships

Throughout the course of the project, LBG established a relationship with Energy Saving Trust. The collaboration with Energy Saving Trust has developed further since the end of the project, with additional ancillary services, provided by Energy Saving Trust, being added the Green Living Hub (e.g. the provision of an energy efficiency educational events). Furthermore, LBG has since teamed up with retrofit suppliers to support customers with the installation of their home-improvements.

Trajectory towards future outcomes and impacts

Further improvements to the GLR are under consideration.

Key Lessons learned

- **Partnership value-added:** The GHFIF enabled Lloyds to build partnerships with Energy Saving Trust for added value components such as the HEST, and fund consumer research which accelerated and refined the offering of the GLR. The research and evidence from the GLR pilot together has since provided the basis on which future propositions may be developed. As such, in the case of this project the major benefits

⁸ <https://www.gov.uk/guidance/apply-for-the-green-homes-grant-scheme#what-the-voucher-could-be-used-for>

provided by Department of Energy Security and Net Zero innovation funding will derive from these ancillary services, rather than the core offering of the GLR.

Chapter 4. GHFIF Project Case Study: Valuation And Lending Underwriting Energy Reduction

Summary

The Valuation And Lending Underwriting Energy Reduction (VALUER) project aimed to investigate the difference in market value of energy efficient homes compared to less efficient homes and integrate these differences explicitly in the lending and underwriting process. VALUER was awarded a grant of £552,542. Monmouthshire Building Society (MBS) formally led the project, with Sero acting as a project coordinator, managing much of the required reporting and monitoring requirements, and convening the consortium partners. Alongside Sero and MBS, the Royal Institution of Chartered Surveyors (RICS) and Rightmove also acted as consortium partners. VALUER built on the previous LENDERS⁹ project, which examined how borrowing amounts can vary based on the energy efficiency of a property.

The project successfully completed the market research and development of green finance products. Market research on a sample of 200,000 UK homes resulted in the confirmation of a 'green premium'¹⁰, where an average increase in value is associated with an improvement in EPC rating. This finding was integrated into lending and valuation processes through MBS and RICS respectively. The work led by RICS also led to updates to global guidelines for property valuation (the Red Book published by RICS) and the subsequent development of the RICS Retrofit Standard planned to be launched in late 2023.

The financial product launched by MBS was based on a new model of mortgage affordability calculator, integrating energy efficiency of homes into the calculations. It was a bespoke product created specifically for customers in two new build housing developments where Sero are the energy service provider that were chosen as pilot areas. This product was marketed alongside Sero's 'Pathway to Zero' providing an overview to customers on how their homes could reach net zero carbon.

The piloting of the affordability calculator did not result in any loans being made. MBS experienced difficulty in engaging customers with the affordability calculator, due to challenges related to COVID-19, difficulties engaging with the mortgage brokers for pilot sites, and a perceived lack of need as many customers had higher deposit savings, particularly post pandemic. The Pathway to Zero retrofit survey experienced low demand from existing MBS mortgage holders, even when Sero offered these surveys free of charge. This was partly due

⁹ The LENDERS investigated how to better reflect household energy costs into mortgage applications. It was a collaboration between Nationwide Building Society, BRE, UKGBC, Arup, Principality Building Society, the Energy Saving Trust, UCL Energy Institute and Constructing Excellence Wales. It was funded by Innovate UK to the value of £257,844. More information available here: <https://www.ukgbc.org/ukgbc-work/lenders-core-report/>

¹⁰ A green premium describes the process by which 'green' properties with higher energy efficiency ratings have a higher market value.

to a limited potential sample, and disruption to marketing and engagement caused by COVID-19.

Since the project closed all partners involved have continued developing their outputs. MBS are planning a second trial of the updated affordability calculator to generate sales of the new green mortgage product. Rightmove have updated their Surveyor Comparable Tool (SCT)¹¹ and Automated Valuation Model¹² (AVM) to include energy efficiency information. They will also be continuing to integrate energy efficiency considerations into several future feature releases.

Project Objectives

The VALUER project was a follow-on activity of the previous LENDERS project that ran from 2015 - 2017. LENDERS demonstrated that a property's Energy Performance Certificate (EPC) can be integrated into affordability calculations, allowing for higher maximum borrowing on energy efficient properties while still maintaining factors such as the Loan to Value (LTV) ratio¹³.

The VALUER project builds on this, and had the following objectives:

- To investigate the difference in house market value based on energy ratings, and their ability to support more borrowing due to lower fuel costs.
- To pilot a green mortgage product that takes energy efficiency into account, using the value differential indicated by the tools above.
- To develop and pilot two new tools to identify a green premium or brown discount with Rightmove. The creation of these tools provided added value to this project, as previous projects had not investigated how to quantify a value differential, in a way that future customers can utilise themselves.

In terms of scope, the project targeted specific new build, low energy housing developments in two areas in South Wales; Cardiff and Tonyrefail, but also used existing Monmouthshire Building Society mortgaged homeowners within the vicinities for the aspects of the project targeting retrofit (e.g. additional borrowing, "Pathways to Zero").

Project Consortium

Project Lead: Monmouthshire Building Society

Monmouthshire Building Society (MBS) is a building society with headquarters in Newport that has been active since 1869. It currently has 23 branches and agencies across Wales and

¹¹ The SCT provides data to surveyors on similar properties and various features to support surveyors' judgements, it is used over 200,000 times a month.

¹² AVM is a tool which provides an estimated value of a property based on an algorithmic calculation.

¹³ Loan to Value represents the ratio of a mortgage against the value of a property. For instance, for a £180,000 mortgage on a £200,000 property, the LTV ratio would be 90%.

England, and over 70,000 members. As a mortgage lender they had not previously offered green finance products, but since the VALUER project they have continued offering the piloted green mortgage products.

Project partners

Sero

Sero is a zero-carbon homebuilder and sustainable energy service provider that has been operational since 2017. Sero have been involved with a number of projects in the field of green home finance in terms of retrofitting, prior to and during their participation in GHFIF, including 'Optimised Retrofit'¹⁴. This project, which started in 2020, has provided more than 1,724 homes in Wales with a 'Pathway to Zero'.

Rightmove

Rightmove is the UK's largest online real estate portal, with 84% of the market share and 2.3 billion visits in 2022. Rightmove have been dedicated to improving their sustainability as a company¹⁵, but had yet not worked towards supporting customers seeking energy efficient homes.

Royal Institution of Chartered Surveyors (RICS)

RICS is a global body representing surveyors, with 134,000 members worldwide, and 75,000 of those being in the UK. Energy efficiency had previously not featured heavily in the Home Survey Standard or valuation process, but has subsequently increased in importance through additional ESG requirements from RICS and growing consumer demand.

Partnership Narrative

None of the partners on the VALUER project were also involved in the LENDERS project which it built on. At the time of the launch of GHFIF, MBS and Sero were considering integrating energy efficiency into mortgage affordability calculations and may have pursued a similar project targeting mortgage affordability calculations, regardless of the existence of GHFIF. The funding opportunity led Sero to approach RICS and Rightmove with an opportunity to add value to the project.

Although Rightmove had not previously been involved in projects exploring energy efficiency and its effects on property value, they were interested in supporting carbon-neutral initiatives through a project such as VALUER.

The funding from GHFIF allowed the project to investigate retrofitting and offer free home surveys, which aligned with the priorities of the Department.

¹⁴ <https://sero.life/press-room/optimised-retrofit/>

¹⁵ <https://plc.rightmove.co.uk/responsibility/environment>

Overview of project activities undertaken

The VALUER project commenced on the 1 March 2020 and closed on the 18 March 2022.

The identification of a value differential in properties based on their energy efficiency was the primary task in this project, specifically in terms of how this can be reflected in a mortgage's LTV. Additionally, MBS wanted to investigate whether this could potentially cover "Active Home Energy Management"¹⁶ to help minimise energy bills and influence the affordability calculation further.

In order to accomplish this, MBS and Rightmove integrated energy efficiency information into their products and services which included their affordability calculator, the enhanced Surveyor Comparable Tool (SCT) and the Automated Valuation Model (AVM).

MBS piloted their green mortgage product exclusively for EPC A rated homes, aimed at both outright purchasers as well as those applying for shared ownership.

Existing MSB customers were offered an additional borrowing product for retrofitting, offering a detailed Pathway to Zero produced by Sero, as well as pre- and post-retrofit checks (additional details of the products can be found in the outcomes section below).

Two pilot areas were chosen to trial both products in South Wales (Aspen Grove in Cardiff and Parc Eirin in Tonyrefail) focusing on low energy housing developments, although the geofenced areas included a total of 7702 postcodes. New home purchasers were offered mortgage products that included energy efficiency surveys and the potential to borrow, and existing homeowners were offered the potential to borrow additional funds for retrofitting.

For the new mortgage product, the sales staff were briefed on the benefits of the bespoke product, but direct customer communications through leafleting was not possible due to COVID-19 restrictions. For the further borrowing product, 150 candidates were selected to receive direct mail marketing offering them a free Pathway to Zero.

There were several dissemination events including one delivered to representatives of DESNZ. RICS also held a roundtable at Parliament Square to both government and industry in March 2021.

The latest version of the Red Book which includes changes made by RICS came into effect on 31 January 2022.

¹⁶ Active Home Energy Management refers to the ability to monitor the energy efficiency of a home in real time, so that effective improvements can be made

Project achievements

The following table highlights key objectives/aims set out in the application, and highlights the progress against them. Sections below then explore achievements of the project in more detail along with description on barriers and enablers and reflections on future plans.

Table 3 Achievements Against Objectives (RAG rated)

Objective	Summary of progress made
To investigate the difference in market value based on energy ratings, and their ability to support more borrowing due to lower fuel costs.	MBS successfully adapted their affordability calculator incorporating more accurate running cost data for energy efficient homes. Due to the reduced expenditure associated with running a highly efficient home, borrowers could potentially increase their maximum borrowing by £12,000 when compared to purchasing a poorly operating home. VALUER successfully demonstrated the existence of a green premium and associated value with energy efficiency improvements based on EPC bands. In addition, the project produced preliminary evidence on a brown discount ¹⁷ . (Green)
To pilot green mortgage products that take energy efficiency into account.	The pilot products were developed and launched. However, no loans were delivered, due to lack of demand, and COVID-19 disruption to marketing activities (described in sections below). Despite this, the lack of interest in itself was informative for the partners' understanding of the market. (Amber)
To develop and pilot two new tools to identify 'green value' or 'brown discounts' with Rightmove: a 'green' Surveyor Comparable Tool (SCT) and a 'green' Automated Valuation Model (AVM).	Rightmove enhanced both their SCT and AVM so that they now both include energy efficiency information such as EPC ratings. Rightmove has also highlighted EPC ratings to customers and support customers with search criteria based on environmental factors. (Green)

* Amber = Progress made towards objective/objective partially met, Green=Objective Met or exceeded.

Project outputs

MBS adapted their prototype affordability calculator to incorporate more accurate running cost data for energy efficient homes. They found from this data, that borrowers could potentially increase their maximum borrowing by £12,000 when buying an energy efficient home. The calculator is aimed at first time buyers and in particular properties which were highly energy efficient.

There was minimal interest in the piloted green mortgage products. MBS only received a total of three applications, and two of them were unable to progress as the properties were rated

¹⁷ A brown discount is the converse of a green premium and refers to a home that has poor energy efficiency being reflected by a lower market value

EPC B rather than A. Feedback from target sites was generally that the economic conditions of the time meant there was minimal need for additional support with affordability.

Rightmove's SCT and AVM were updated so that they now both include energy efficiency information. The SCT is now able to provide surveyors with a list of homes that have similar green EPC ratings, and the AVM which utilises additional information drawn from EPC to help provide valuations.

Rightmove were also able to evidence that green features contained within estate agent property listings realised a sharp uplift, having more than tripled from January 2020 to March 2021.

RICS updated the valuation guidance within their Global Standards (the Red Book) to better reflect energy efficiency as a value differential, by increasing references towards Environmental, Social and Governance (ESG). This was subsequently backed up from data provided by Rightmove demonstrating the relationship between EPC ratings and valuations to support valuers in their work. RICS also recognised an opportunity to further expand energy efficiency advice in Home Surveys (which follows the Home Survey Standard) which ongoing training is developing surveying expertise in. It was also recognised that a broader retrofit toolkit was required by surveyors, with RICS launching the development of the RICS Retrofit Standard that can support consumers and lenders during the transaction period, and during occupation.

Additionally, project partners have produced industry papers reporting their findings and outcomes, including MBS's own project report¹⁸, and Rightmove's Green Homes report¹⁹.

While most of the partners intended to expand into energy efficiency and green mortgages, the GHFIF programme allowed for this process to be expedited. Additionally, the GHFIF enabled a higher level of skills and expertise to be involved in this project.

Barriers faced

Although the VALUER project successfully met two out of three objectives, they were unable to deliver any of the proposed mortgage products. 150 candidates were offered a free Pathway to Zero survey, but only three responded and two surveys were undertaken. The primary barriers that prevented this goal from being achieved were (1) the lack of engagement from the potential customers and (2) disruption due to COVID-19.

Engagement from potential customers

One of the most significant barriers in this project was the lack of engagement from local estate agents and surveyors, with low attendance for the events that were held to discuss the project. This was partially due to COVID-19 restrictions (see below) although engagement remained low after the restrictions were lifted. One additional potential issue was that the estate agents

¹⁸ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1106172/Monmouthshire_Building_Society.pdf

¹⁹ <https://www.rightmove.co.uk/news/content/uploads/2022/07/Rightmove-Green-Homes-Report.pdf>

and mortgage advisors were not incentivised to market the product. Homeowners therefore did not receive information that would have increased their understanding of retrofits and their associated benefits.

RICS further noted that in discussions with home buyers and sellers, the importance of energy efficiency and decarbonisation ranked low in the priorities of consumers – driven largely by the absence of tangible regulations and targets which would have a direct impact on them e.g. via requirements to invest in improvement works, down valuations and restrictions on mortgage access. RICS research has shown that since the completion of the VALUER Project, and subsequent energy crisis brought on from the war in Ukraine, energy-efficiency has significantly grown in importance for consumers.

COVID-19 disruption

The outbreak of COVID-19 in 2020 and subsequent restrictions limited the amount of interaction that MBS were able to have with their potential customers in the South Wales housing developments. They were not able to have a mortgage advisor present in the Parc Eirin development, or distribute leaflets throughout the areas, which was a further detriment to engagement levels.

Realised outcomes and impacts

Lenders' knowledge & ability in energy efficiency products and solutions pathway

Following their pilot scheme, MBS formally launched a range of green mortgage products in February 2022 for properties with an EPC rating of A²⁰. They offered (competitive at this time) a two-year product with a fixed rate of 2.39% and maximum LTV of 95%, and a five-year product with a fixed rate of 2.69% and 95% maximum LTV for both first time buyers and movers. Both of these products come with a standard fee of £999 and an admin fee of £150. They were available at a minimum loan size of £40,000 and a maximum loan size of £500,000.

These products were available through MBS's intermediary channel, for residential purchases only, and are open to both first time buyers, home movers and remortgages. MBS is continuing to explore the best ways to support members with decarbonising their homes.

MBS's green mortgage has been recognised by a number of websites and publications, such as the Money Saving Expert website, as well as in multiple publications such as The Intermediary, Mortgage Solutions and This Is Money.

Since starting the VALUER project, Sero have been approached by a number of lenders who are interested in collaborating on green home finance products, indicating that there is a growing demand, and Sero is being recognised as a leader in these.

²⁰ www.mbs-intermediaries.com/news-story/monmouthshire-bs-launches-new-energy-efficient-mortgage-range-for-a-rated-homes/

Homeowner knowledge & ability in EE products and solutions

Rightmove confirmed that consumers are actively seeking terms such as 'Solar Panels' and 'Heat Pump' with staggering increases in popularity through their online key word search. In November 2020, Rightmove's keyword sort ranked 'Solar Panels' at 500 and 'Heat Pump' at 1,000, and by June 2022 these had jumped to positions 98 and 190 respectively.

Networks and relationships

The relationships that have been formed through this project are another valuable benefit, as they have allowed for knowledge sharing and collaborations beyond the VALUER project. Although MBS were previously in conversation with Sero, they would not have engaged with Rightmove or RICS without the GHFIF programme.

Sero are currently working with multiple lenders (namely Principality Building Society, Hodge Bank and Hinckley & Rugby Building Society) to develop digital decarbonisation tool finance pilots.

The nature of the project meant that stakeholders covered a variety of sectors across the green retrofit supply chain, and the findings are therefore shared more broadly than if a single sector consortium was delivering the project. One instance of this is the roundtable held by RICS in March 2021. Additionally, this project was quasi-academic in the nature and aimed to prove a hypothesis of the existence of the green premium, and therefore the dissemination of findings was central to its success.

The findings regarding the wider market and demand for green mortgage are also important as they have informed the partners on what can feasibly be achieved, and what may need to be changed in order to create a more successful product.

Progress since project completion and plans for future developments

MBS and Sero are currently conducting a second trial of the affordability calculator. The economic conditions for this are now more favourable due to interest rates increasing. There is also the potential to develop a new green mortgage product with a lower interest rate.

RICS and Rightmove have also collaborated since the project has ended and are analysing data from 300,000 property sales to identify any link between property value and EPC. RICS have built on their work on the VALUER project by developing a new Home Survey Standard, which allows for a greater assessment of energy efficiency features.

While consumer interest in retrofit finance was low at this point, this may change due to perceived benefits related to increases in energy bills, or potential legislative changes.

MBS have used the findings as a source of learning for their Environment, Social and Governance strategy and are now looking at primarily supporting landlords rather than first time buyers.

Rightmove have made EPC ratings more prominent as part of their property information. Since the project ended, Rightmove have published a Green Homes report sharing findings relating to EPC ratings and their effect on property value²¹.

Key Lessons learned

- **Confirmation of the existence of a ‘brown discount’:** While this project focused on the existence of a ‘green premium’, there was also evidence to suggest a Brown Discount where prices are reduced based on house characteristics related to poor energy efficiency, such as a hot tub that is not powered by renewable energy sources. It may be important for DESNZ-funded projects to investigate the different ways in which this manifests, and their implications.
- **Lack of perceived ‘importance’ for consumers:** Awareness among consumers where no tangible risk to the property or value exists under current policy made it very difficult to communicate the need to invest in energy improvement works or even take up the offer of a free Pathway assessment. This has further been evidenced from discussions with lenders during the project who explained the difficulty in promoting green products and loans to customers.

²¹ www.rightmove.co.uk/news/content/uploads/2022/07/Rightmove-Green-Homes-Report.pdf

Chapter 5. Benchmark Case Study A: A local Building Society with two green home finance (GHF) products and a one in the pipeline

Summary

Benchmark Lender A, a local building society, began work on energy efficiency in the last few years, driven by the perceived benefits it could bring to their members and wider society. Having observed wider market trends, in particular responding to Nationwide's work around energy efficiency of homes, the Benchmark Lender A developed two green mortgage products: a green home mortgage, offering rate discounts to customers with an EPC A or B and a carbon reduction additional borrowing product – offering rate discounts to mortgage based additional borrowing customers who undertake energy efficiency improvements on their home.

The lender plans to further develop and relaunch these products alongside an energy efficiency renovation mortgage, which would provide incentives for people to retrofit their home when they transfer a mortgage to Benchmark Lender A.

The lender currently views that there is little demand from consumers in this market, and that further work will need to be done by government to make retrofitting more attractive.

Introduction to the green home finance product range

Benchmark Lender A (BL-A) has two key green home finance products available; these are:

- Green home mortgage: once the customer applies for a mortgage, if they provide a valid EPC certificate showing the property has an EPC A or B they receive a discount on the interest rate of the mortgage. This is not attached to a specific mortgage with an advertised rate but can be applied to different mortgage products. Therefore, the discount applied to the mortgage rate is bespoke to the product.
- Carbon reduction additional borrowing: existing mortgage customers who are making home improvements which will reduce their energy use of their home and thus associated carbon emissions can receive a rate discount if 50% of the additional mortgage borrowing is spent on qualifying measures.

BL-A supported this with training to their internal mortgage advisors on energy efficiency and the products. This training included highlighting to mortgage customers where they could seek advice from trusted and respected sources.

Organisations Involved

Lending organisation

BL-A is a small regional building society, focused on providing personal finance services to individuals in their area. BL-A had attempted to engage an energy related NGO in providing advice or ancillary services, however, the organisation reported that the NGO had told them their customer base was too small to justify providing a bespoke service.

Product Development

BL-A as a building society, reported that they were motivated to look into further green mortgage lending and develop products because “it was the right thing to do” (Head of Risk, BL-A) for members and wider society. Like other building societies interviewed during the evaluation, this social purpose was the primary driver, and that profitability or competitiveness wasn’t seen as a key motivating driver.

While BL-A was aware of the GHFIF and was looking into applying, they perceived GHFIF to be too large scale for a local building society, so didn’t make an application. A representative of the building society thought innovation funding could have enabled more research to launch a more comprehensive product. Nevertheless, they were not sure that they would have created anything substantially different than what they have now. BL-A had received some information about the VALUER project via Monmouthshire Building Society presenting to the Building Society Association. Despite these dissemination efforts, BL-A primarily looks to nationwide, as the largest building society when exploring new offerings.

As a small building society, BL-A can be relatively agile in product development and can launch a pilot product with little difficulty, so the development of these products didn’t encounter any significant development challenges.

The Green Home Mortgage, and Carbon Reduction Additional Borrowing, products were chosen because the features were relatively simple to implement and were also being trialled by other lenders.

Product launch

The product was launched approximately 18 months prior to the evaluation team interviewing the lender in Winter 2022/23. BL-A reported that they have continued to feel that there is customer interest in retrofitting but that this translates into few customers retrofitting and thus demand for these products remains low.

Plans for future development

The lender, driven by the same social purpose above, and the challenge of particularly low efficiency housing stock in their region, wants to continue to strengthen its retrofit offering. They stated that they were currently redesigning the two products to be more attractive and also preparing to relaunch them alongside a new product. This third product would target re-mortgage customers who are looking to switch their mortgage to them, at this point there would be a rate discount or other incentive if the homeowner undertook an energy efficiency retrofit of their home.

BL-A made clear that lenders and financial institutions cannot stimulate retrofit on their own. The lender noted that recent challenges had been posed by uncertainty around the form/direction of government policy. To realise high customer demand and deal with specific local circumstances BL-A saw long term policies to support retrofit from both national and regional/local governments as essential.

Key Lessons learned

- **Costs for small lenders:** Small lenders can be relatively agile, and do not have huge product development costs. Large grant funding opportunities may need to have specific streams or explicit language in guidance notes encouraging smaller projects.
- **Key Market Actors:** BL-A was one of several building societies that described looking to Nationwide as a market leader when developing products. Understanding which market actors are key trend setters in different segments can help DESNZ to understand how knowledge and practice spread.
- **Private lending to complement broader government policy:** BL-A was also one of several lenders that expressed scepticism that the private finance sector can tackle the challenge of retrofit without long term signals and greater support from government.

Chapter 6. Benchmark Case Study B: A ‘Big Six’ lender with several GHF products

Summary

Benchmark Lender B, one of the ‘Big Six’ mortgage lenders, has been described by stakeholders in evaluation interviews as a pioneer in the green home finance sector, being one of the first lenders to develop additional borrowing products for retrofitting. They currently offer three green finance products: two- and five-year green additional borrowing products (loans), and a green reward cashback scheme. These have been developed in parallel with a wider green organisational strategy over the last several years.

Introduction to the green home finance product range

Benchmark Lender B (BL-B) has three key green home finance products available; these are:

- **Green additional borrowing:** Customers with an existing mortgage can choose between a two- or five-year fixed rate product at a discounted initial interest rate. In order to qualify, customers must spend at least 50% of the borrowing amount on energy efficient home improvements such as solar panels or heat pumps. There are no product fees for this loan, and customers are able to borrow between £5,000 and £25,000 with 90% Loan to Value.
- **Green reward:** Customers are rewarded with cashback for buying an energy efficient home. The customer can receive up to £500 based on a score derived from the home’s Energy Performance Certificate (EPC) rating, using a Standard Assessment Procedure (SAP). Customers who have purchased homes with a score of 92 or above receive £500 cashback, and those with a score between 86 and 91 receive £250.

Organisations Involved

Lending organisation

BL-B is a big six lender with over 15 million customers and over 10% market share of outstanding UK mortgage balances.

Product Development

The impetus to develop green mortgage products arose after hearing about the green home finance products being developed by other organisations in the sector, including but not limited to those developed with GHFIF funding. There had been some previous interest in this domain,

and the GHFIF seemed to be an interesting opportunity, but the timing of the competition was not feasible for them. BL-B subsequently decided to proceed with producing their own products within their own timescales. They were also motivated by their goal of having at least 50% of their mortgages for homes with an EPC of C or higher by 2030.

BL-B also developed a wider carbon neutral and climate awareness strategy. This includes several commitments notably:

- All of BL-B's operations are now carbon neutral.
- It has also joined the Green Finance Institute's Coalition for the Energy Efficiency of Buildings to promote the benefits of energy efficient buildings.
- BL-B have also supported the creation of a non-for-profit housing estate with a high environmental standards and EPC A ratings.

Product launch

BL-B were one of the first mortgage lenders to develop an additional borrowing product specifically for improving energy efficiency and have influenced the green home finance landscape.

BL-B launched their green additional borrowing products in March 2020, and a year later, in March 2021, they cut their interest rate even further.

State of lending

BL-B's green additional borrowing product has been a relative commercial success, with 345 applications in the first year, at a value of 3.5 million.

Plans for future development

There is scope for these products to adapt and change as consumer needs shift over time. There have also been considerations around how the additional borrowing product may change dependent on future legislation.

We understand the lender has actively decided not to pursue any plans to develop a penalty based 'brown' loans for homes with poor energy efficiency, due to concerns of impacts on mortgage holders in poor energy efficient properties. Incentives are seen a much stronger main motivator for the market at this point in time.

Despite not taking part in GHFIF, BL-B have shared their reflections on policy and any learnings they have gained from launching their products with teams in the Department at various points.

Key Lessons learned

- **Consumer knowledge gaps:** A key lesson from BL-B's experience in developing their range of green home finance products is that customers often need guidance and education around retrofitting. They are therefore looking into ways to provide this support.

Chapter 7. Benchmark Case Study C: A multinational bank, one of the first to launch a GHF product

Summary

Benchmark Lender C, a multinational bank, was one of first UK lenders to offer a green home mortgage in 2018. Since then, it has expanded its range of green home finance products, and is becoming involved in education of employees, mortgage advisors and its customer base about retrofitting, EPCs and other relevant topics.

Introduction to the green home finance product range

Benchmark Lender C (BL-C) has three types of green home finance products available; these are:

1. **A Green Home Mortgage for properties with specified EPCs ratings:** New build residential properties with an EPC rating of A or B were offered at lower interest rate (by approximately 5-10 basis points). As of March 2023, there were three products within this category:
 - i) a 2-year fixed rate at 75% Loan to Value (LTV), 4.54% interest rate and no fee,
 - ii) a 2-year fixed rate at 90% LTV, 5.78% interest rate and no fee,
 - iii) a 5-year fixed rate at 90% LTV, 4.90% interest rate and £999 fee.
2. **A Buy-to-Let Mortgage with similar principles to the 1st product:** An equivalent to the Green Home Mortgage above, but appropriate for buy-to-let properties. There were two of these products:
 - i) a 2-year fixed rate at 75% LTV, 4.98% interest rate and £1,295 fee,
 - ii) a 5-year fixed rate at 75% LTV, 4.65% interest rate and £1,295 fee.
3. **Piloting a cashback scheme for energy efficiency upgrades:** existing mortgage customers can apply for up to £2,000 to cover retrofitting, such as solar panels, and heat pumps for their home. The amount of money provided is dependent on the type of retrofitting required and ranges from £500 for additional window glazing, to the full £2,000 for a heat pump or biomass boiler. All new and existing mortgage customers were eligible and no additional lending is required.

Outside of home finance, BL-C also offered a range of green products for corporate clients.

Organisations Involved

Lending organisation

BL-C has the highest number of global customers of all UK based banks with around 50 million customers across the world. In 2020, BL-C's share of the mortgage market was around 10%, and as of 2022 its mortgage loan book was worth in excess of £150 billion.

Product Development

BL-C initial foray into green finance was through their green bonds, which was backed wholly by UK assets. BL-C was one of the lenders involved in the government's Green Finance Taskforce at this time, and the potential of green mortgages was discussed within the Taskforce's "accelerating green finance report"²². The lower interest rate offered in the green mortgages was made possible by BL-C's green bonds, as the reduced rate is passed down to their customers.

While a green reward had been in consideration for some time, the mortgage products had been prioritised as these were easier to develop and operationalise. To develop the green reward, BL-C conducted customer research to improve their understanding of green home finance and particularly retrofitting from the customers' point of view. The product is currently being piloted and the findings from this will allow BL-C to further identify the incentives and deterrents that influence the customers.

State of lending

BL-C's first green home finance product, the green mortgage, had over 4,000 customers and £2.6bn of financing being lent through it since its inception in 2018. Though this includes the total value of the property, not just energy efficiency improvements. In interview this lender indicated this product had the fastest uptake of any of their new mortgage products at the time.

To complement the release of their range of products, BL-C have been involved in improving understanding of EPCs and retrofitting not only for their customers but for mortgage advisors/brokers, and estate agents with whom they work. Some of these educational efforts have been delivered in collaboration with other lenders, for instance, advisor training on retrofitting was conducted in the Netherlands by BL-C alongside a Dutch bank, ABN-AMRO.

In April 2023, following the launch of the Green Home Reward, BL-C announced a strategic partnership with a major energy supplier, to help support customers in improving the energy efficiency of their homes. Through this they are offering a smart thermostat and professional installation at half price for their UK residential mortgage customers.

²² www.gov.uk/government/publications/accelerating-green-finance-green-finance-taskforce-report

Key Lessons learned

- **Gaps in consumer and supply chain knowledge of energy efficiency retrofits:** As with other lenders of green mortgages, BL-C experienced difficulties in marketing their green reward product as customers tend to have less understanding about retrofitting. This lack of knowledge was also found in parts of the supply chain, and while trainings in these areas have been useful, a potential mandate around efficiency advice from FCA for brokers/advisors would also be beneficial.
- **IT system costs:** One significant challenge that was encountered during the development of these products was the cost and difficulties associated with updating the IT systems. Green products requiring costly new IT systems were therefore deprioritised. As with GHFIF, these costs should remain eligible part of innovation activities.

Appendix A: Findings from the Consumer Research users of the Green Home Mortgage products

The information provided here is from a findings presentation about the consumer research delivered to the Department.

About the Green Home Finance Innovation Fund (GHFIF)

- **About the Fund:** an open competition providing a total of £1.8m in grants for three consortia, with funding from the BEIS Energy Innovation Portfolio. The competition closed in September 2019 and projects ran through to March 2021.
- **Fund purpose:** to support the development and piloting of green home finance products marketed to consumers planning to finance home improvements with energy efficiency measures.
- **Key timings:** launched in July 2019
- **Fund Aims:** The GHFIF programme was designed to support three separate but interlinked policy goals:
 - The Clean Growth Strategy, which sets out a plan to upgrade as many homes as possible to Energy Performance Certificate (EPC) C, where cost-effective, affordable and practical, by 2035, and for all fuel-poor home to reach EPC C by 2030.
 - The Buildings Mission, specifically the ambitions to at least halve the energy use of new buildings by 2030 and to halve the cost of renovating existing buildings to a similar standard.
 - The Green Finance Taskforce's recommendation for the financial sector to take a more active approach to stimulating innovation in green finance products and services.

About the Green Home Mortgage (GHM)

- The GHM was one of the three products financed by the Green Home Finance Innovation Fund. It was developed by Lloyds Banking Group.
- The GHM consisted of:
 - **Green Living Reward (GLR)** - a £500 cashback available to consumers to claim back when green home improvements had been made.

- **Home Energy Saving Tool (HEST)** – a free online tool for estimating consumers' energy bill and provide an action plan for how to make homes more energy efficient.
- Consumers were required to make improvements, and claim for the GLR, or use HEST, by the end of December 2021.

Brief overview of methodology

Provided here is a summary of the consumer research methodology. For a more in-depth account of the research methods, refer to Annex A: Technical Annex.

Research aims

- To understand the role of the Green Home Mortgage in driving energy efficiency and low-carbon heating upgrades amongst consumers.
- To capture consumer perceptions and experiences of the two Green Home Mortgage products: GLR and HEST.

Research approach

Qualitative depth interviews with 16 consumers who engaged with the Green Home Mortgage. All consumers interviewed claimed the £500 cashback, and three also engaged with the Home Energy Saving Tool (HEST).

Homeowners were identified by and invited to take part in an interview by Halifax mortgage advisors. Homeowners confirmed their interest directly to IFF Research who scheduled interviews. Interviews took place over the telephone or video call between 11 August and 28 September 2022. Interviews lasted up to one hour and consumers received £40 for taking part.

Research limitations

All consumers engaged with GHM via a mortgage they took out with Halifax Building Society. Findings from consumers engaging with the Green Home Mortgage via Lloyds' other subsidiaries (e.g. Bank of Scotland) were not included because this population could not be reached through the mortgage advisors

Only three participants in this research had used the Home Energy Saving Tool and so findings relating to the tool should be interpreted bearing this in mind.

Key Findings - Green Living Reward (GLR)

Context Matters

Scheme Timing

The GLR needed to be used by Winter holidays 2021; this is a particularly costly time for people, particularly for those who have bought a new home. Consumers were more likely to feel the cashback wasn't a great enough incentive to making desired improvements given the high-cost relative to the cashback reward, at this time of year.

Cost of Living Crisis

Consumers were especially motivated to reduce their running costs through energy efficient improvements, because of the cost of living and energy crisis making the headlines when the cashback was available.

"With the gas bills and things, cost of living...anything you can do to try and keep the heat in the house is useful."

(GLR only, Improvements made)

Other initiatives

Green Homes Grant was available at the same time as the Green Home Mortgage: some consumers confused the two or were denied the grant so thought they weren't eligible for the mortgage. Though in some cases, work underway using the grant was complemented by the GLR.

"I spent a lot of time looking at government schemes to see what support we could get for what types of renovation."

(GLR only, Improvements made)

Brexit

Supply chain issues due to Brexit, and compounded by the pandemic, limited the availability of supplies for home improvements.

Covid-19

Backlog of building work during pandemic meant tradespeople were less available to undertake work for consumers

"There's only a certain amount of [trades]people part of that scheme [TrustMark], and they had a backlog coming out of Covid."

(GLR only, Improvements made)

Key findings along the consumer product journey

1 – Product introduction

Being introduced to the GLR via trusted intermediaries was key for product awareness.

- Consumers learnt about the GLR once they had signed up for their mortgage, and they found out about their mortgage in the following ways:
 - Verbally or via email from their mortgage advisor (most common)
 - Introduction from family or friends (less common)
 - Marketing on an online banking platform, or price comparison website (some instances of)
- Consumers' felt comfortable signing up to the mortgage because they trusted Halifax advisors. This trust came from past experiences with Halifax which gave them a positive impression of Halifax as a brand, and their existing relationships with Halifax advisers.

"We wanted the most affordable mortgage...it was an added bonus."

(GLR only, Improvements made)

"I already banked with Halifax. I gave them a call and had a chat with a lovely lady... Because we already had accounts there, we got a better deal, and she talked me through it all."

(GLR only, Improvements made)

Consumers were concerned about securing the best deal financially when re/mortgaging. For this reason, the GLR did not make an impression, initially:

- No one in the sample chose the mortgage because of the GLR. The main factor was the most suitable, or best deal, financially.
- The GLR was viewed as an 'added extra', rather than being a strong pull factor. For this reason, it often didn't make a strong impression initially. Consumers tended to take action towards claiming the GLR after reminder emails from Halifax. At this point, consumers felt communications as to what the GLR offered were clear.
- Consumers buying a house, rather than remortgaging, were more likely to describe not initially remembering the product introduction and requiring mortgage advisor reminders to engage. This was because they were making an important financial decision which involved a lot of paperwork, the mention of £500 was not memorable.

"I don't recall any mention of it at the time, I saw it in an email later."

(GLR only, Improvements not made)

“I don't recall anyone mentioning it. Someone may have but to be honest, £500 is not that important in the grand scheme of things and wouldn't impact my decision to choose a mortgage or do work on my home.”

(GLR only, Improvements not made)

Awareness was driven by, and dependent upon, Halifax mortgage advisers:

- Learning about the GLR was dependent on mortgage advisors mentioning it.
- Mention of the GLR was sometimes buried in paperwork about their mortgage.
- Customers found it difficult to find information on the scheme through general searches.
- Some Halifax branch staff were unaware of the scheme

“I was going through the mortgage and they mentioned there was a reward scheme... I thought ‘That's interesting.’”

(GLR only,

Improvements made)

“I don't know if that much was said about it, it was just a brief overview, I read more about it in the email so that prompted me to do a bit more research and then I found out that there was some funding towards home improvements.”

(GLR only,

Improvements made)

“I didn't know it was on there.”

(GLR only, Improvements made)

2 – Considering the product

Once the GLR had piqued interest, consumers tended to go ahead with it, but some did quick, online searches or spoke with Halifax staff, to check their eligibility and the parameters of the offer. Customers were equally likely to mention:

- Once introduced to the product, some customers went on to look online for further information either on the Halifax website, or government sources.
- Other channels included contacting Halifax representatives by phone, online or in branch, to seek clarification on specific queries.
- Customers looked into the availability of tradespeople to complete the work, in order to understand prices and what was possible, before registering.

“Just online research.” (GLR only, Improvements made)

“I just had to try and find someone with the Trust Mark to do the work.”

(GLR only, Improvements made)

3 – Using the product: Registration

The online form to register was simple and clear, but uncertainty about eligibility and requirements for claiming, delayed customers registering.

- The main reservation to register was consumer uncertainty about whether their intended improvements were eligible for the GLR.
 - For example, the language used on a home improvement provider website to describe insulation, and on the GLR documents varied.
 - There was one example where a customer found out they weren't actually eligible after the works were already completed.
- A less common barrier was what information or paperwork was needed when it came to submitting a claim.
 - For example, not knowing they needed a registration number from their tradesperson, and their tradesperson not knowing their number.
- A less common view was general suspicion of the cashback: "was there a catch?"
- Once consumers knew they could register, the online form was simple.

*"Just all the paperwork, you know you have to get it all together, they had to be on the Trust Mark. I can understand if people would give up if they didn't like paperwork."
(GLR & HEST, Improvements made)*

*"[The electrician] didn't know his trusted trader number so had to go away and get it."
(GLR only, Improvements made)*

"The process was quite straightforward... Once you had your mortgage number, you simply went onto the Halifax website and applied... Then they would notify you when you were successful." (GLR only, Improvements made)

4 – Making home improvements

Consumers tended to pay for one discreet job with their GLR cashback.

- Consumers tended to use the cashback to pay for all or most of one discreet job, including:
 - Replacing doors
 - Replacing windows
 - Wall/loft insulation
 - Replacing / improving thermostat
- In some cases, the £500 value wasn't considered incentive enough to making the desired improvements, given their high-cost relative to the cashback reward. As a result,

homeowners put it towards finishing work already underway. For example, adding insulation to room in roofs.

“What the 500 quid? I don’t know. I don’t mean to sound funny but it’s not an amount I would think that much about. My mortgage is 500 grand.” (GLA only, Improvements made)

“We’d already paid for the work, so it went onto finishing things off.” (GLA only, Improvements made)

5 – Claiming the cashback

Most consumers received their money without needing to follow up, but they would have benefited from communications about next steps after submitting their claim.

- Most consumers received their money in their bank account within a month to six weeks and felt this met expectations.
- An exception to this were consumers who had just spent significant money to move house and the works were done before the deadline, at Christmas. For this group, a month to wait was too much for their finances.
- Consumers did not receive a confirmation of their submission, or communication about when the money would be paid or how. This led to some anxiety amongst some consumers about whether and when they would be reimbursed.

“[The £500] could have come sooner because we were living on a shoestring. Especially around Christmas.” (GLR & HEST, Improvements not made)

“I didn’t get any notifications that the application had been successful or anything really so I had to chase that up.” (GLR only, Improvements made)

Consumer views on product improvement

Product Improvements Suggestions by Consumers

- Increase value to £1,000+
- Paying a % of the cost of an improvement
- Better interest rates

“It could be done as a % of the cost. Some of things you can do, which save a lot of money, cost thousands of pounds. Perhaps it could be means tested.”
(GLR only, Improvements made)

- A deadline is motivating to consumers, but a longer deadline might help get improvements done.

“The only thing I was worried about was the timeline because I left it over the summer and then it was a rush to get it done by the end of December.”

(GLR only, Improvements made)

- A clear and simple explanation of the GLR process, including eligibility requirements in promotional materials.
- Communications at each point in the journey to acknowledge stage and confirm next steps.

“An acknowledgement email that it had been submitted would have been helpful... it would have left me with a bit more confidence that it had gone through properly.”

(GLR only, Improvements made)

- More promotional activities to make consumers aware of the product, from advisors, and across relevant websites and platforms

“It wasn't very clear that this was available when I was taking out the mortgage, so it would be good to make it clearer for when people are shopping about.”

(GLR only, Improvements made)

Consumer perceptions of impact of using the Green Home Mortgage

The outcomes the GHFIF-funded products - like Green Homes Mortgage – intended to bring about were:

1. Increase in ability and motivation to install energy efficiency measures through better knowledge of measures.
2. Greater ability to finance improvements in an affordable way.
3. Increased level of trust in process through engaging with reputable and known companies.

Consumer motivation to install new energy efficiency measures was already high, but consumers learned about new measures and installed more measures:

- Consumers we spoke to were already motivated to install new energy efficiency measures; their motivation didn't change as a result of engaging with the GLR or HEST.
- The process of applying for the GLR and using HEST informed consumers of other available measures, and prompted some to further research their options.

The exception was consumers with home improvements underway or planned, where both GLR and HEST prompted consideration of additional home improvements

“We thought, OK we will do the doors then.”

(GLR only, Improvements made)

“I was always going to do home improvements, but it's made me more aware of grants and government schemes where I can save money.”

(GLR only, Improvements made)

The GLR cashback complemented home improvements and supported smaller, discreet improvements; but the value wasn't seen as enough for this to be viewed as 'an affordable way':

- A common group of consumers were those that were going to do their home improvements work anyway, and who saw the £500 as a 'helpful bonus'.

"These offers weren't the reason I put insulation in, they just made it cheaper for me. It was a bonus rather than a driver."

(GLR only, Improvements made)

- Regardless of planned work, consumers shared the view that £1,000 or more was more motivating and realistic, given the rising costs of labour and supplies, due to the cost-of-living crisis and supply chain challenges brought on by the pandemic.

"In the grand scheme of things, £500 is not a whole lot if you're planning to do lots of work."

(GLR only, Improvements not made)

The TrustMark scheme did not support increased trust in the process:

- Consumers didn't understand what the TrustMark scheme represented. It was not viewed as a mark of quality because any trader could sign up to it

"Unless it [The TrustMark] is a measure of quality, it's just limiting your options."

(GLR only, Improvements not made)

- The requirement to use a TrustMark tradesperson was viewed as...
 - limiting numbers of locally available tradespeople and led to consumers having to work harder to find an appropriate trader; and
 - pushing up home improvement costs

"The only thing I didn't like was that you had to find someone to do the work who was on the Trust Mark scheme. There was only one company who I could use."

(GLR only, Improvements made)

"The people who quoted, they quoted me through the roof. The moment the government's paying for something, the quotes were off the scale."

(GLR, Improvements made)

A unique view was that the TrustMark scheme was a useful starting point to find tradespeople in the local area.

Key findings – Home Energy Saving Tool

Only 3 of our 16 participants recalled, and used, HEST. Therefore, the following findings are indicative and should be interpreted with caution.

Product introduction

Few GLR users recalled hearing about HEST; those that did, learned about it through the GLR

- Barriers to consumer awareness of HEST included not recalling being told about it, and consumers assuming it didn't break through the 'noise' of mortgage paperwork
- HEST users became aware of the website through the GLR, either on the Halifax website or being told about it by their Halifax representative.

"I don't remember that, no, It probably was there but I may have missed it." (GLR only, Improvements made)

*"Halifax (website) had a little questionnaire you could go through, to find out things you could do to your house and what was available."
(GLR & HEST, Improvements made)*

Using the product

Overall views of the ease of using the Home Energy Savings Tool (HEST) were mixed.

- The three participants who had used the tool had similar levels of energy efficiency interest and knowledge, and educational background, yet they differed in how easy they found using HEST
 - "straight forward and easy"
 - "onerous". For example, a consumer didn't have the home information to hand when using HEST so they guessed the information they entered

"It was pretty clear what they wanted [...] It didn't take that long." (GLR & HEST, Improvements made)

"Quite tricky. Like when trying to insure house. Asked percentage of things, not things you've contemplated." (GLR & HEST, Improvements not made)

Consumers valued the home improvements, average savings for those improvements and local tradespeople HEST proposed.

- The proposed home improvements reassured a participant that their previous research for energy efficiency improvements was sensible, fuelling their motivations to do home improvements.

- The accompanying average savings that could be expected from implementing recommended improvements was a motivating feature
- HEST recommendations of local tradespeople was a “good starting point” in aiding consumers in collecting quotes for work the tool recommends.

“It [the tool] reassured me that it was the sensible thing to do.”
(GLR & HEST, Improvements made)

“It gave you the idea, and explained what that meant as well, which is quite nice, but it also gave you an average cost for a house of our type, and the average savings that could be expected.” (GLR & HEST, Improvements made)

“[HEST] gave you a starting point, in terms of people [local tradesmen] to contact.”
(GLR & HEST, Improvements made)

HEST recommendations left consumers wanting more.

- Our consumers were already knowledgeable about energy efficiency initiatives, so for them, the suggested improvements either had already been implemented, or they could not afford to do them.
 - This suggests that at the moment HEST may be more relevant to consumers who haven’t undertaken research about energy efficiency options, and who have larger budget for improvements.
- One found HEST reassuring in terms of going ahead with planned works.

“The things it was suggesting were really expensive and would involve a lot of upheaval... Like outside cladding, that would cost £10,000.” (GLR & HEST, Improvements made)

Making the tool more prominent, and improving the action plan, were suggestions for improvement.

- Suggestions were made for inclusion of a tool like HEST, from those who did not recall it. This supported other calls to make the tool more prominent on communications, to aid take-up.
- More detail in the action plan for each suggested home improvement:
 - Pros and cons
 - The sort of properties it would be suitable for
 - An indication of budget required
 - One suggested introducing a red, amber, green system to make it easier to decipher how cost-effective home improvements could be
- A unique view was that a ‘smart tool’ would know what home improvements had already been made to a property, to avoid suggesting work that had already been carried out.

"It would have been better to have pros and cons for each one, the sort of properties they'd be suitable for, some indication of budget [required]... [You could] do it like trip advisor - an indicator." (GLR & HEST, Improvements not made)

"I was getting quotes for wall insulation, and actually I didn't need it [as it had already been done]." (GLR & HEST, Improvements made)

Making home improvements

Two of our three HEST users made improvements after using the tool.

- These two participants both insulated their roofs.
- One had been planning to do this anyway but was reassured by HEST that their plan was sensible, and a cost effective solution. The £500 allowed them to afford a higher quality insulation.
- The other had not yet planned to insulate their loft but finding out about the £500 available prompted them to, as it was now affordable.
 - This participant also found HEST useful in terms of providing a list of local tradespeople whom they were able to make contact with.



Spotlight on....

Deborah*²³ lives with her husband and three children. She's knowledgeable about energy efficiency as a result of her background in science, and takes a thorough approach to researching what's available to her in the way of financial help. She was re-mortgaging to be able to afford a 'room in roof' in her home, and came across the Green Home Mortgage when she took up one of Halifax's mortgages. She had already intended to pay for the room in roof, but the additional £500 enabled her to afford for higher quality work to be done. She paid an additional £300 to cover all of the work being done.

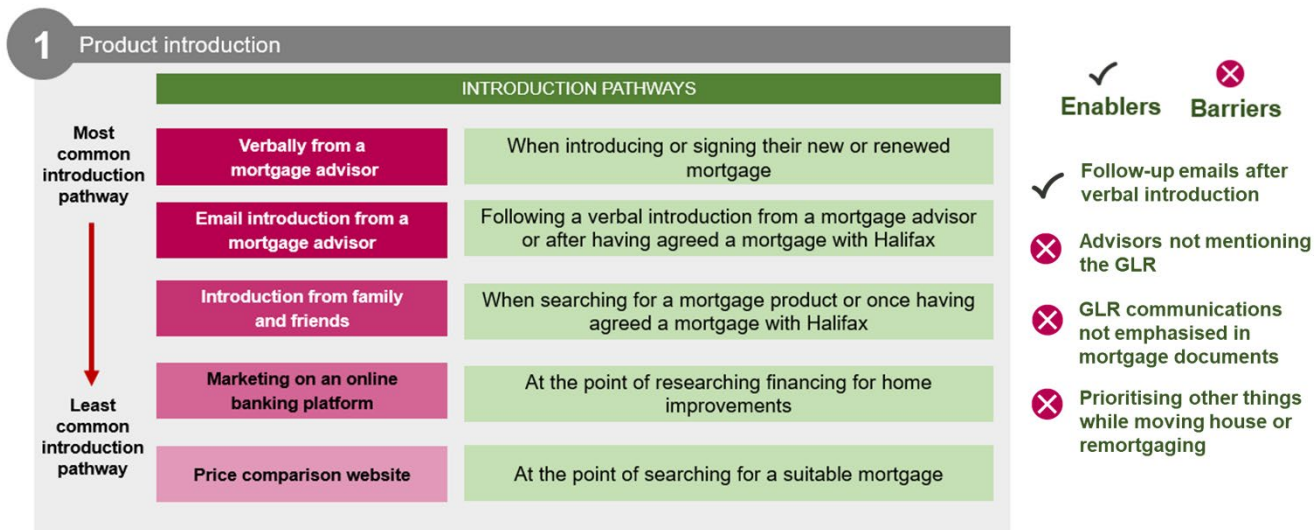
²³ * This is a pseudonym to protect participant identity.

Conclusions and implications

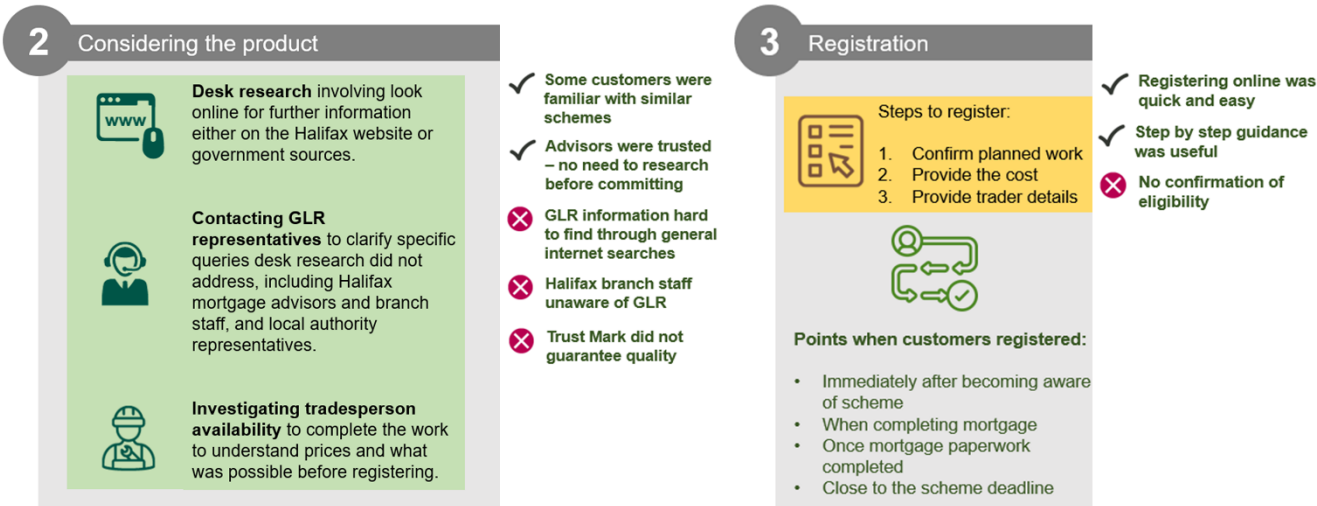
Green Living Reward Journey map

The following images illustrate the GLR customer journey, and summarise the key enablers and barriers to their journey.

Journey map (1 of 4)

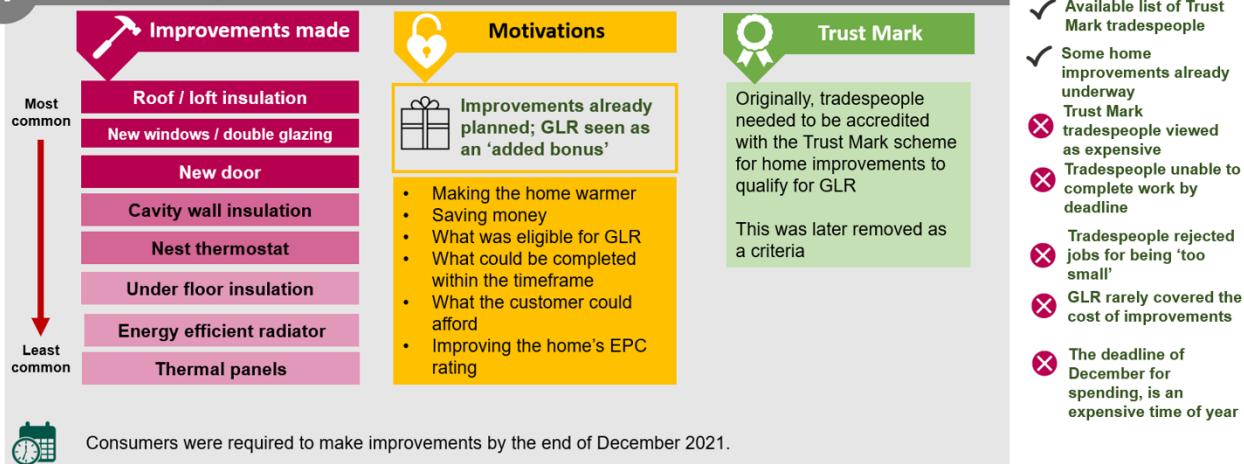


Journey map (2 of 4)



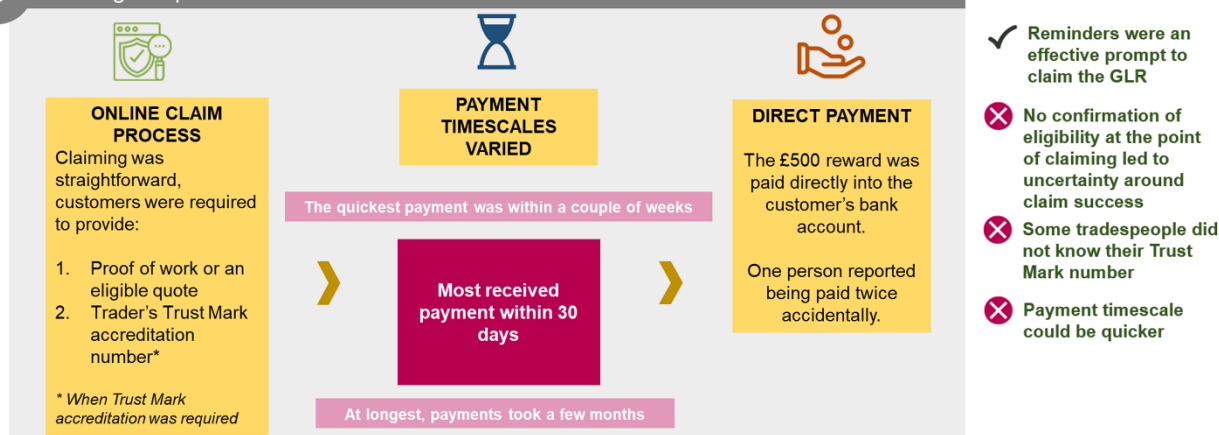
Journey map (3 of 4)

4 Making home improvements



Journey map (4 of 4)

5 Claiming the product



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