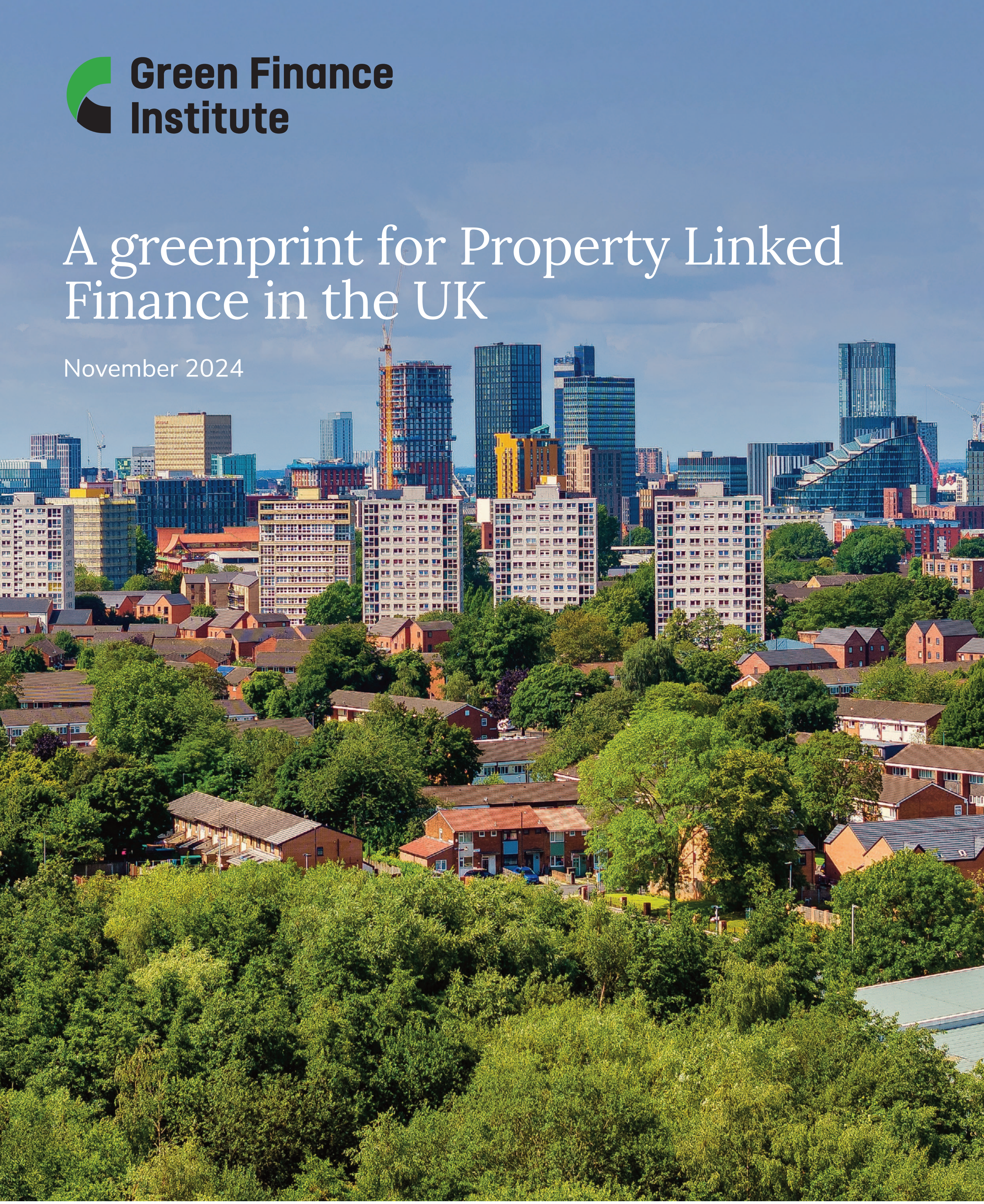
Green Finance Institute

A greenprint for Property Linked Finance in the UK

November 2024



LLOYDS BANKING GROUP

NatWest Group

greenfinanceinstitute.com

Contents

1. Abstract

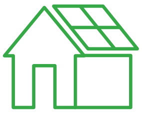
Property Linked Finance (PLF) solutions have successfully mobilised billions of dollars of institutional capital towards environmental improvements to commercial and residential buildings across the globe, including in the United States, Canada and Australia. **PLF refers to long-term affordable[1] finance solutions that are linked to the property, rather than the property owner, and can fund up to 100% of the upfront costs of projects that improve the environmental performance of a property**, including installation of low carbon technologies, increased energy efficiency and enhanced climate resiliency measures. PLF could be a valuable part of the solution for the UK market – helping to bridge the £360 billion investment gap[2] to decarbonise UK buildings and overcome the upfront cost barrier for consumers – and will require a bespoke 'linking mechanism' that works within the context of UK laws and regulations. This report explores the possible solutions for the linking mechanism, the key features for UK PLF, presents the results of residential market consumer research which shows the circumstances under which a PLF solution could be welcomed by property owners, and outlines a step-by-step plan to scale PLF into a thriving market.

"Property Linked Finance solutions have successfully mobilised billions of dollars of institutional capital towards environmental improvements to commercial and residential buildings across the globe"

[1] Affordable: The PLF payments meet relevant affordability criteria that take into account the property owner's financial circumstances.
[2] https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Buildings.pdf

2. Introduction

PLF is a potential new financial solution for the UK market that can fund up to 100% of the upfront costs of a project that improves the environmental performance of a property, including:



Installation of low carbon technologies

Increased energy efficiency

Enhanced climate resiliency measures

PLF is long-term, affordable finance that is linked to the property, rather than the property owner, where the obligation to meet PLF payments transfers to the new property owner on the sale or transfer of the property.

Why Property Linked Finance is important

PLF could play an important role in supporting the decarbonisation of the UK's building stock, which is responsible for 23% of the UK's total greenhouse gas emissions[3]. An estimated investment of £360 billion is needed to decarbonise UK buildings by 2050 – an investment that need not be met by the public purse alone[4]. PLF offers a new funding mechanism to crowd in private capital and to help achieve the necessary investment into installation of low carbon technologies, energy efficiency and climate resiliency projects in the UK's built environment.

PLF could be an attractive solution to several challenges facing the UK's retrofit agenda:

- The 'linking' of PLF to the property is intended to **overcome the 'payback period' barrier** – a major challenge to the decarbonisation of UK buildings, whereby owners are deterred from making environmental improvements to their properties if the owners expect to move in the near- to medium-term and the energy savings are not expected to offset the project costs in this duration. As PLF is linked to the property (rather than the property owner), the property owner is only responsible for meeting the PLF payments while they own the property and benefit from the environmental improvement measures. When the property changes ownership, the new owner is responsible for meeting the PLF payments.

- As a new form of long-term, affordable finance, where the term can match the useful lifetime of the improvements, **PLF addresses a gap in the UK market**. Traditional unsecured loans in the residential market are shorter-term, potentially with higher monthly repayments, while further advances are only an option for the 30% of homeowners that have a mortgage.[5 6]

- PLF **increases the range of financial solutions** available to property owners. Residential consumers we surveyed could see the potential benefits of PLF and expected, in time, that it could become an established part of the home buying process.

[3] https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Buildings.pdf
[4] Property Linked Finance: A new financial solution to decarbonise the UK's homes and buildings by the Green Finance Institute (2023)
[5] https://ifamagazine.com/the-number-of-homeowners-who-own-their-home-outright-has-increased-over-the-last-10-years-according-to-new-data/
[6] Note that homeowners that own their property outright may also be able to borrow against the property for environmental improvements.

- Research commissioned by the GFI in 2023 found that, if scaled and adopted by consumers, PLF could support £52 billion to £70 billion of investment into building decarbonisation across England, Scotland and Wales in the residential market alone – **materially contributing towards the UK's net-zero ambitions** and helping to improve the UK's inefficient building stock.[7]

- PLF provides a **new mechanism for financial institutions to deploy capital towards green projects**, support their clients on the journey to net-zero, and reduce the risk of stranded assets in their lending and insurance portfolios.

- By increasing the deployment of capital towards building decarbonisation, PLF can **support the creation of skilled jobs** across the UK. In the U.S., for example, projects funded by residential PLF have resulted in 146,000 job-years[8].

- By establishing a thriving PLF market, the **UK could enhance its leadership in green finance** on the international stage.

Guiding principles

Formed in January 2024, a collaboration between the Green Finance Institute, Lloyds Banking Group and NatWest Group has explored the opportunities and practicalities of developing PLF in the UK.

Over the last ten months, we have developed the PLF 'greenprint'[9] outlined in this report that puts forward one approach to how PLF could be introduced, executed and scaled in England and Wales initially, before a wider rollout across the whole UK market.

In considering the design of this greenprint, the collaboration has focused on five guiding principles to support positive outcomes along the value chain and unlock scale in the UK market, where most financial solutions are linked to a specific individual or business.

[7] Property Linked Finance : A new financial solution to decarbonise the UK's homes and buildings by the Green Finance Institute (2023)
[8] PACE Market Data – PACENation (December, 2023)
[9] Greenprint: A blueprint for financial solutions that aid the investment of projects that improve the environmental performance of a property, including installation of low carbon technologies, increased energy efficiency and enhanced climate resiliency measures.

These five guiding principles are as follows:

Runs with the land: The obligation to make PLF payments must remain with the land regardless of ownership.

Customer ease: The customer journey should be simple, avoid additional friction and allow property owners the ability to make early repayments.

Robust protections: Comprehensive customer/client support should be provided. While the capital provider should have legal recourse to recover missed PLF payments, this should not disproportionately impact the customer. For example, in the event of non-payment the liability should be limited to the amount in arrears at the time and not the total outstanding balance and any arrears would need to be paid ahead of property transfer.

Impact: PLF should not have a material impact on availability of other financial products related to the property, such as the primary mortgage.

Flexibility: PLF should be applicable to freehold and leasehold properties, residential and commercial buildings, retrofitting and new-build construction.[10]

This report will look at the key features of Residential Property Linked Finance (R-PLF) and Commercial Property Linked Finance (C-PLF). It will outline how we believe PLF could be delivered in the UK, including customer journeys for R-PLF, and the GFI's step-by-step plan to create a thriving PLF market that rapidly deploys capital towards the decarbonisation of residential and commercial buildings – both freehold and leasehold properties – across all regions of the UK. Importantly the report summarises consumer research into PLF and some of the reactions of consumers to the concept.

Our vision is to create a thriving UK PLF market that rapidly deploys capital towards the decarbonisation of residential and commercial buildings – both freehold and leasehold properties – across all regions of the UK. Our aim is to support property owners that are both able-to-pay and 'less' able-to-pay but principally targeting the latter with PLF unlocking access to finance for retrofit, create sufficient scale to attract institutional investment and enable PLF capital providers to access the capital markets, and to provide a greenprint for other countries to replicate.

PLF as a solution requires strong engagement with legislators in order to make the necessary changes within government infrastructure to enable PLF. Our consumer research shows that consumer education, particularly on the financial benefits, will also be key in order for PLF to be adopted and allow the market to scale. By working together with financial institutions, policy makers, regulators, local authorities, lawyers and property owners, we can create a robust, flexible and widely adopted PLF market in the UK, driving the transition to a more sustainable future.

[10] In the U.S., 14% of all C-PACE funds new construction, but the main focus of PLF in the UK will be retrofitting, as the purpose of the product is to improve the environmental performance of buildings. (https://www.pacenation.org/pace-market-data/)

3. Key features of Property Linked Finance

As a potential new solution for the UK market, PLF has several unique features that are not available from existing financial products:

- **Runs with the land:** The responsibility to meet regular PLF payments remains with the property, even after the property has transferred to a new owner. As a result, the property owner that is *currently* benefitting from the low carbon technologies, energy efficiency improvements and/or climate resiliency measures is also responsible for meeting the PLF payments. This transfer of the payment obligation could be achieved via a new type of Local Land Charge (or a Restriction on Title for the purposes of a C-PLF pilot). See Chapter 4
- **Non-accelerating:** Acceleration refers to the declaration by a lender that the outstanding balance of a loan must be repaid early in the event of default. PLF is designed as a *non-accelerating* form of finance, which limits the liability in the event of non-payment to the amount in arrears at the time and not the total outstanding balance.

As a form of finance with the benefit of a financial charge, a PLF solution that is linked via a Local Land Charge would sit between existing secured and unsecured financing solutions in the UK market. As such, PLF fills an important gap in the current funding landscape for commercial and residential building retrofits. In addition to the common characteristics described above, R-PLF and C-PLF each have specific features. These are presented in the following tables.

Key features of Residential Property Linked Finance

Eligible Customers	Available to owner occupiers and private rental landlords.
Purpose	Funds up to 100% of the upfront costs of eligible projects. Eligible projects must be permanently fixed[11] to the property and improve the environmental performance of a home, including installation of low carbon technologies, increased energy efficiency and improved climate resiliency measures.
Drawdown	Funds can be disbursed directly to the retrofit contractor. Funds are disbursed upon project completion, subject to sign-off by the contractor and property owner.
Term	For single measure projects, the term will align with the useful lifetime of the measure or technology. For multi-measure projects, there are three options: the term can align with the weighted average useful lifetime of the measures, the shortest useful lifetime in the mix of technologies, or the longest useful lifetime in the mix of technologies.
Payments	Monthly payments of an equal amount will be made by the property owner, based on a straight-line amortisation profile.
Security	Subject to enabling legislation, R-PLF will utilise the Local Land Charge linking mechanism (see Chapter 4 for more information on the recommended linking mechanism), where it is envisaged the PLF capital provider will benefit from an entry on the HM Land Registry title noting the existence of the financial charge. The financial charge will operate as a form of security, which allows the PLF capital provider to initiate collection processes in the event of non-payment.
Events of non-payment[12]	In the event of non-payment, the PLF capital provider should engage with the customer to help them remedy the non-payment. This will occur during a grace period with an end date defined by the PLF capital provider. Following the grace period, the PLF capital provider can initiate collection processes for the overdue capital and interest only. Interest can accrue on the missed payments throughout the grace period and collection processes.
Assignment and transfer	PLF capital providers should have the ability to transfer the PLF benefit to a third party, in order to support the future warehousing and securitisation of PLF to unlock greater market scale.

[11] For any fixtures funded through PLF that are possible to remove, such as solar panels, there would be a requirement that these fixtures should remain fixed to the property for their useful life.
[12] Due to the non-accelerating nature of PLF, rather than referring to 'events of default' it is more relevant to refer to 'events of non-payment'.

Key features of Commercial Property Linked Finance

Eligible Customers	Available to real estate borrowers and corporates that own their premises, covering all sectors of the commercial property market.
Purpose	Funds up to 100% of the upfront costs of eligible projects. Eligible projects must be permanently fixed[13] to the property and improve the environmental performance of a property, including installation of low carbon technologies, increased energy efficiency and improved climate resiliency measures.
Drawdown	Funds are provided directly to the property owner (who would manage payments to the contractor) and can be drawn down in stages, subject to sign off by the contractor, property owner and any consultant review on costs that the PLF capital provider may require.
Term	For single measure projects, the term will align with the useful lifetime of the measure or technology. For multi-measure projects, there are three options: the term can align with the weighted average useful lifetime of the measures, the shortest useful lifetime in the mix of technologies, or the longest useful lifetime in the mix of technologies.
Payments	Monthly payments of an equal amount will be made by the property owner, based on a straight-line amortisation profile. To bridge the income problem during deep retrofits, C-PLF should allow for the capitalisation of interest during the renovation period.
Security	C-PLF can utilise either a Restriction on Title (pilot phase only) or Local Land Charge linking mechanism. See Chapter 4 for more details on both linking mechanisms. **Restriction on Title (pilot phase only):** As a Restriction on Title can only be granted in favour of a third party with an 'interest in the land', this type of C-PLF must be a secured form of finance (i.e. utilising a legal mortgage or fixed charge security). **Local Land Charge:** Subject to enabling legislation, we envisage the PLF capital provider will benefit from an entry on the HM Land Registry title noting the existence of the financial charge. The financial charge will operate as a form of security, which allows the PLF capital provider to initiate collection processes in the event of non-payment.
Events of non-payment[12]	In the event of non-payment, the PLF capital provider should engage with the client to help them remedy the non-payment. This will occur during a grace period with an end date defined by the PLF capital provider. Following the grace period, the PLF capital provider can initiate collection processes for the overdue capital and interest only. Interest can accrue on the missed payments throughout the grace period and collection processes.
Assignment and transfer	PLF capital providers should have the ability to transfer the PLF benefit to a third party, in order to support the future warehousing and securitisation of PLF to unlock greater market scale.

[13] For any fixtures funded through PLF that are possible to remove, such as solar panels, there would be a requirement that these fixtures should remain fixed to the property for their useful life.

4. Delivering Property Linked Finance in England and Wales

Property Linked Finance linking mechanisms

To deliver the unique features of R-PLF and C-PLF (see Chapter 3), a legal mechanism is required to 'link' the finance to the property so that the payment obligation runs with the land. The collaboration explored several options to identify preferred linking mechanism, as shown below.

Options explored for the Property Linked Finance linking mechanisms

The tables on the following pages provide a description of each of the possible PLF linking mechanisms that were explored along with a mapping to alignment of the UK PLF guiding principles. Green colour coding reflects where there is strong alignment to the guiding principles, running on a scale down to yellow being somewhat aligned and orange being the least aligned.

Options for R-PLF

KEY: Strong Alignment | Moderate Alignment | Weak Alignment

Option Explored	**Description**	**Alignment to UK PLF guiding principles**				
		Runs with the land	*Customer ease*	*Robust protections*	*Minimal impact*	*Maximum flexibility*
Local Land Charges	Local Land Charges are financial charges or restrictions on the use of land and are currently imposed by public authorities under statutory powers, otherwise known as originating authorities. Our analysis identified that a new type of Local Land Charge – brought into existence by primary legislation – would act as a financial charge and links the obligation to meet PLF payments to the land. Further details below.					
Restrictions on Title	A Restriction on Title is an entry made on the Land Registry title register of a property, which prevents a sale, transfer or other dispositions of the property unless certain conditions are met. The collaboration concluded this option was not suitable for R-PLF due to complexities associated with the interaction of Restrictions on Title with the Consumer Credit Act (CCA) and Mortgage Conduct of Business (MCOB) rules, which result in the PLF not automatically transferring upon sale of the property and therefore not meeting the guiding principles of UK PLF. Further details below.					
Council Tax	Following the approach taken in the US and Australia, it was explored if Council Tax would be an appropriate way to collect PLF repayments. Due to the need to update UK tax law, plus the risk of additional operational burden on local authorities who have limited capacity at present, it was deemed to be a sub-optimal option.					
Service Charge	This would involve R-PLF payments being structured as service charges for the property, rather than loans. However, this would still be defined as a regulated consumer credit agreement under the terms of the CCA and therefore not automatically transferable upon sale.					

KEY: Strong Alignment Moderate Alignment Weak Alignment

Option Explored	**Description**	**Alignment to UK PLF guiding principles**				
		Runs with the land	*Customer ease*	*Robust protections*	*Minimal impact*	*Maximum flexibility*
Loans within the CCA	Under the CCA a loan must be associated with a person, rather than land, and therefore prevents the automatic transfer at the point of sale. As such, this option does not meet the guiding principles for PLF and would require an additional linking mechanism.					
Loans within the Green Deal	The legislation as it exists would require equal legislative change as compared to creating a new Local Land Charge (i.e. primary legislation), as well as engagement with energy companies.					
Second charge mortgage	This option would involve putting in place a new fixed charge/legal mortgage which would operate as a second mortgage. A second charge mortgage is a secured loan that uses the owners equity in their home as collateral. This option is not linked to the land so would require an additional linking mechanism and would require the PLF being novated to the incoming owner which could be challenging in the residential space.					
Rentcharges	A rentcharge is an annual or periodic sum that is paid by a freehold homeowner to a third party with no legal interest in the land. Rentcharges can only be applied to freehold properties (similar to service charges for leasehold properties) and so would not meet the guiding principle of being flexible to all property types. All new rentcharges must be classified as 'estate rentcharges' which would require them to be payments towards upkeep of communal areas or an estate, which would be challenging to satisfy for PLF. There was also consideration to the challenges rentcharges may have when interacting with mortgages as well as the negative perception of rentcharges.					

Options for C-PLF

KEY: Strong Alignment Moderate Alignment Weak Alignment

Option Explored	**Description**	**Alignment to UK PLF guiding principles**				
		Runs with the land	*Customer ease*	*Robust protections*	*Minimal impact*	*Maximum flexibility*
Local Land Charge	Local Land Charges are financial charges or restrictions on the use of land and are currently imposed by public authorities under statutory powers, otherwise known as originating authorities. Our analysis identified that a new type of Local Land Charge – brought into existence by primary legislation – would act as a financial charge and links the obligation to meet PLF payments to the land. Further details below.					
Restrictions on Title	A Restriction on Title is an entry made on the Land Registry title register of a property, which prevents a sale, transfer or other dispositions of the property unless certain conditions are met. In the commercial real estate sector, where the CCA and MCOB do not apply, a Restriction on Title could be a viable linking mechanism to test and pilot C-PLF. Further details below.					
Separate Utility ('Retrofit as a Service')	This option involves creating a new type of utility service, similar to electricity or water. The PLF charges would be treated like utility bills and would transfer to the new owner when the property is sold. However, this option may require extensive legislative amendments to recognise PLF as a utility.					
Utility under Insolvency Act	The Insolvency Act sets out the order in which debts are paid when a company goes bust. This option would involve structuring the PLF so that it is treated as an ongoing service, like a subscription, rather than a loan. This could potentially allow the PLF to be classified as a 'supply of goods or services' under the Insolvency Act, which would give it a higher priority for repayment if the property owner becomes insolvent. However, this option is not linked to the property and would require an additional linking, such as Restriction on Title/Local Land Charge.					
Amendments to BIDs regulations	Business Improvement Districts (BIDs) are areas where businesses pay an extra tax to fund projects that improve the local area. A specific PLF-focused BID could be set up, where the extra tax is used to pay for PLF projects in that area. This option would involve changing the BID regulations to allow PLF to be funded through a BID.					

The collaboration's recommended linking mechanism in England and Wales for PLF is a **Local Land Charge**, due to the automatic transfer of the PLF payment obligation and the benefit of a financial charge registered at HM Land Registry. The collaboration also recommends exploring the **Restriction on Title** to pilot C-PLF, prior to introducing enabling legislation that will create the new 'PLF Local Land Charge'.

The next section provides more information on how the recommended linking mechanisms – Local Land Charges and Restrictions on Title – operate and can be adapted to deliver PLF.

Local Land Charges

Local Land Charges are generally financial charges or restrictions on the use of land and are currently imposed by public authorities under statutory powers, otherwise known as originating authorities. They affect whoever owns the land and so there is an obligation that they are registered[14] to alert purchasers to their existence. Their existence would not normally be apparent from an inspection of the land itself or, in the case of non-financial charges, from the register of title (or title deeds if the land is still unregistered land).

Instead, the relevant local authority is under a duty to keep the Local Land Charges register for their local authority area, with some local authorities now passing responsibility of that statutory function to the Land Registry.[15]

Analysis by the collaboration has identified that existing forms of Local Land Charges are not suitable to deliver PLF. Therefore a new type of Local Land Charge – a 'PLF Local Land Charge' – would need to be established through primary legislation. The legislation must include measures that ensure transparency on the existence of PLF on a property, for example the PLF Local Land Charge should be identifiable on the Land Registry title register, and could be disclosed by estate agents in a similar manner to Energy Performance Certificates.

Provided that enabling primary legislation is passed, PLF capital providers would be granted statutory powers to create a PLF Local Land Charge. Land registration rules require that a Local Land Charge that takes effect as a charge over land must be registered against the Land Registry title in order to be effective (section 55 Land Registration Act 2002). The Local Land Charge would operate as a financial charge[16], and therefore operate as a form of security given that it needs to be registered against the property – both on the Local Land Charges register and on the Land Registry title itself. Once that security is registered (subject to any required consents from existing chargeholders), PLF capital providers would have the ability to prevent a disposal of the property by the owner prior to repayment or transfer of the PLF.

In relation to the priority of such security, all registered charges – regardless of whether that is a legal mortgage or a Local Land Charge financial charge – are 'to be taken to rank as between themselves in the order shown in the register'. Therefore, if the PLF charge is registered after an existing mortgage, it would be second ranking, unless a deed of priority or intercreditor deed is entered into to change the priority. The enabling legislation could be designed in such a way as to deal with ranking and priority to establish a default subordinated position for all PLF.

[14] A PLF provider would likely require that any unregistered land is registered prior to a PLF Local Land Charge being registered noting that the registration of a first legal charge would trigger the requirement for the title to be registered in any event.
[15] https://www.gov.uk/government/publications/local-land-charges-pg79/local-land-charges
[16] For the avoidance of doubt, a financial charge is a sub-category of Local Land Charge (with the other sub-category being land use restrictions).

Property Linked Finance across the rest of the UK

The long-term ambition is for Property Linked Finance to be available to property owners across the entire UK. However, differences between the legal systems in England and Wales, Scotland and Northern Ireland may result in the delivery of PLF varying across the four nations.

For example, under Scottish Law there is no equivalent to the Local Land Charges register that is available in the UK; as such, the Local Land Charge 'linking mechanism' is not viable in Scotland. The situation is similar in Northern Ireland.

As a result, the linking mechanisms in this report are applicable to England and Wales only. Further research and development is required to develop PLF across the rest of the UK, which will be carried forward by the Green Finance Institute and interested partners.

Restrictions on Title

A Restriction on Title is an entry made on the Land Registry title register of a property, which prevents a sale, transfer or other dispositions of the property unless certain conditions are met. Restrictions on Title are common and can be used as a way of ensuring that obligations are met when the property is sold. In the PLF scenario, the property cannot be sold unless the buyer has agreed to sign into the PLF contract and continue to meet the PLF payment obligations, or the PLF is repaid in full.

The Land Registry Practice Guide states that a Restriction on Title can only be granted in favour of a third party with an 'interest in the land'.[17] In particular, the Practice Guide states 'that an unsecured debt is not an interest in land and is therefore not a third-party interest capable of protection by notice or restriction.' As a result, the PLF product – if linked via a Restriction on Title - must be secured by way of fixed charge security, with an associated restriction placed on the Land Registry title.

As with the Local Land Charge, the PLF security would rank behind a pre-existing legal mortgage, but the landowner would require the consent of any pre-existing funder to enter into the PLF. If the PLF is put in place prior to another secured loan, that new funder may require the PLF to be subordinated and rank behind them. This would be documented by way of a deed of priority.

The collaboration explored the applicability of Restrictions on Title to both R-PLF and C-PLF, ultimately concluding the linking mechanism was only suitable for C-PLF and, ideally, only to pilot C-PLF to inform the design and creation of a new PLF Local Land Charge. The collaboration found that Restrictions on Title were not suitable for R-PLF due to complexities associated with the interaction of Restrictions on Title with the CCA and MCOB rules.

[17] https://www.gov.uk/government/publications/notices-restrictions-and-the-protection-of-third-party-interests-in-the-register/practice-guide-19-notices-restrictions-and-the-protection-of-third-party-interests-in-the-register

Delivery partners

Establishing a thriving UK PLF market will require the support and innovation of multiple partners across the value chain:

- **Capital providers:** Providers of PLF capital may include banks, building societies, non-bank lenders and institutional investors. Originating authorities[18] could also provide capital for PLF.
- **UK public finance organisations:** UK public finance organisations – such as the National Wealth Fund, Scottish National Investment Bank, Development Bank of Wales and British Business Bank – can play a vital catalytic role in the early stages of the PLF market. For example, a credit enhancement guarantee for early PLF transactions could improve pricing while data on the performance of PLF transactions is gathered. Alternatively, cornerstone investment could attract private capital into early PLF schemes by reducing the perception of 'first of a kind' transaction risk.
- **Retrofit contractors and specialists:** Ensuring that high-quality retrofit specialists undertake projects that are funded by PLF will increase trust in PLF schemes.
- **Regulators:** Regulators will play a vital role in enabling the creation and scaling of the PLF market, through appropriate protection for consumers and building trust in the market.
- **HM Land Registry:** The Land Registry will be a vital partner for the registration of PLF Local Land Charges and facilitating transparency about the existence of PLF on a property during the buying and selling process.
- **Legislators:** The introduction of a new PLF Local Land Charge – that is appropriately designed for the market and supports iterative improvements – will enable the creation of the R-PLF market and unlock greater scale in the C-PLF market.
- **Other market participants:** Estate agents, conveyancers and other parties involved with the sale and purchase of property will play a key role in customer education around PLF.

Other considerations for Property Linked Finance

As the development of R-PLF and C-PLF progresses, there are several key areas for further consideration and development by the market, including:

- Our consumer research identified concerns about selling and buying a property with R-PLF, therefore the customer journey and processes during the sale of a property with PLF are a key area for further investigation to ensure customers are confident, reassured and protected from potential negative impacts. Consumer education, particularly around the financial benefits, will also be a key component to ensure PLF is adopted and the market is able to scale.
- How PLF sits within a coordinated package of policy enablers, energy efficiency advice, and supply chain actors. Specifically how government infrastructure will need to be amended to allow for PLF to be listed in the Land Registry in England and Wales.
- How risk metrics (e.g. probability of default, exposure at default) are calculated for PLF, as the traditional calculations for financial solutions may differ due to the non-accelerating nature of PLF.

There are further questions that need to be addressed to ensure the successful implementation and widespread adoption of PLF, including:

- Is the new property owner able to refinance with another PLF capital provider?
- What is the communication between the mortgage lender and PLF capital provider?
- How could R-PLF and C-PLF be treated from a UK financial accounting perspective?

[18] Originating authorities are local authorities or other bodies with the powers to create a Local Land Charge.

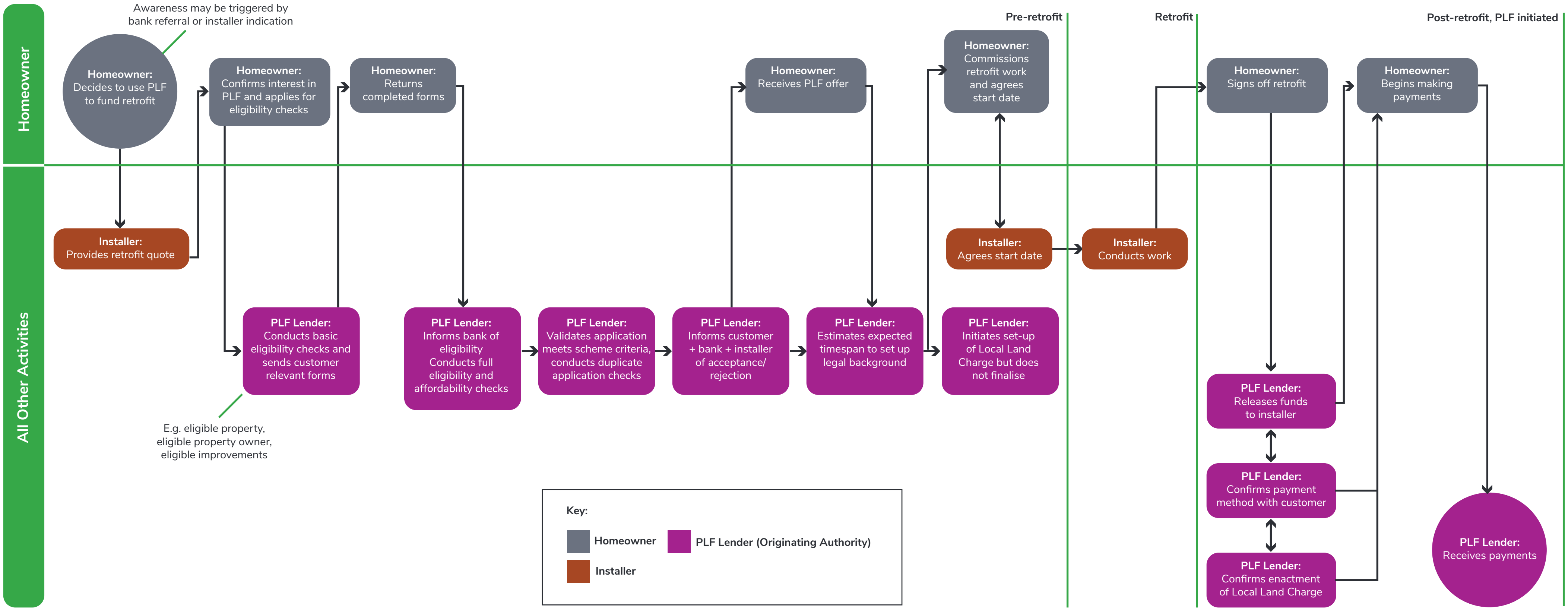
Deep Dive: Residential Property Linked Finance

As part of the collaboration, an investigation of the end-to-end customer journey for R-PLF was conducted and consumers were surveyed to gather their insights and perceptions about R-PLF.

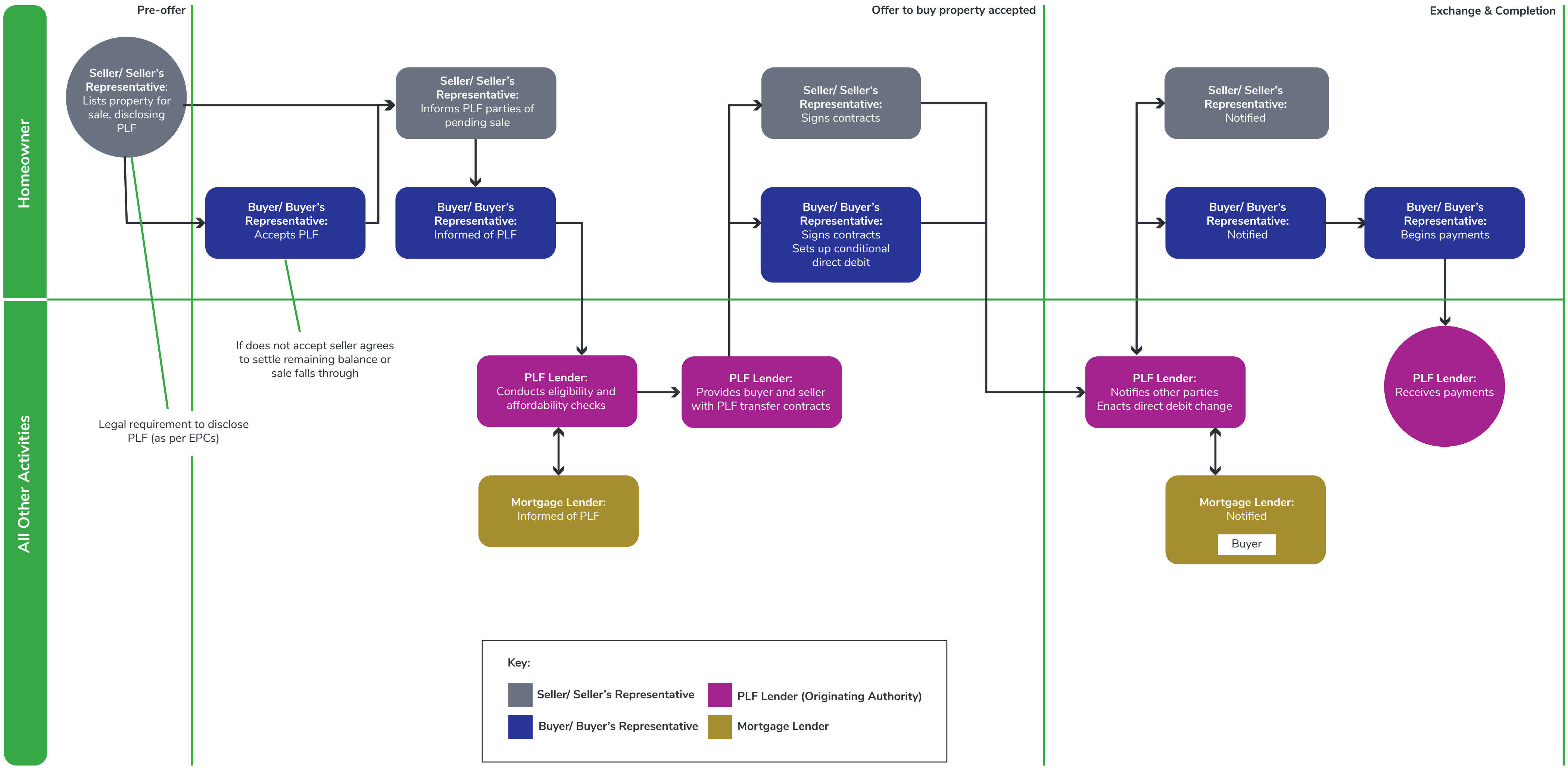
Customer journey

The three key stages of the product lifecycle are shown in the three diagrams below: origination plus post-origination, transfer of property and product maturity.

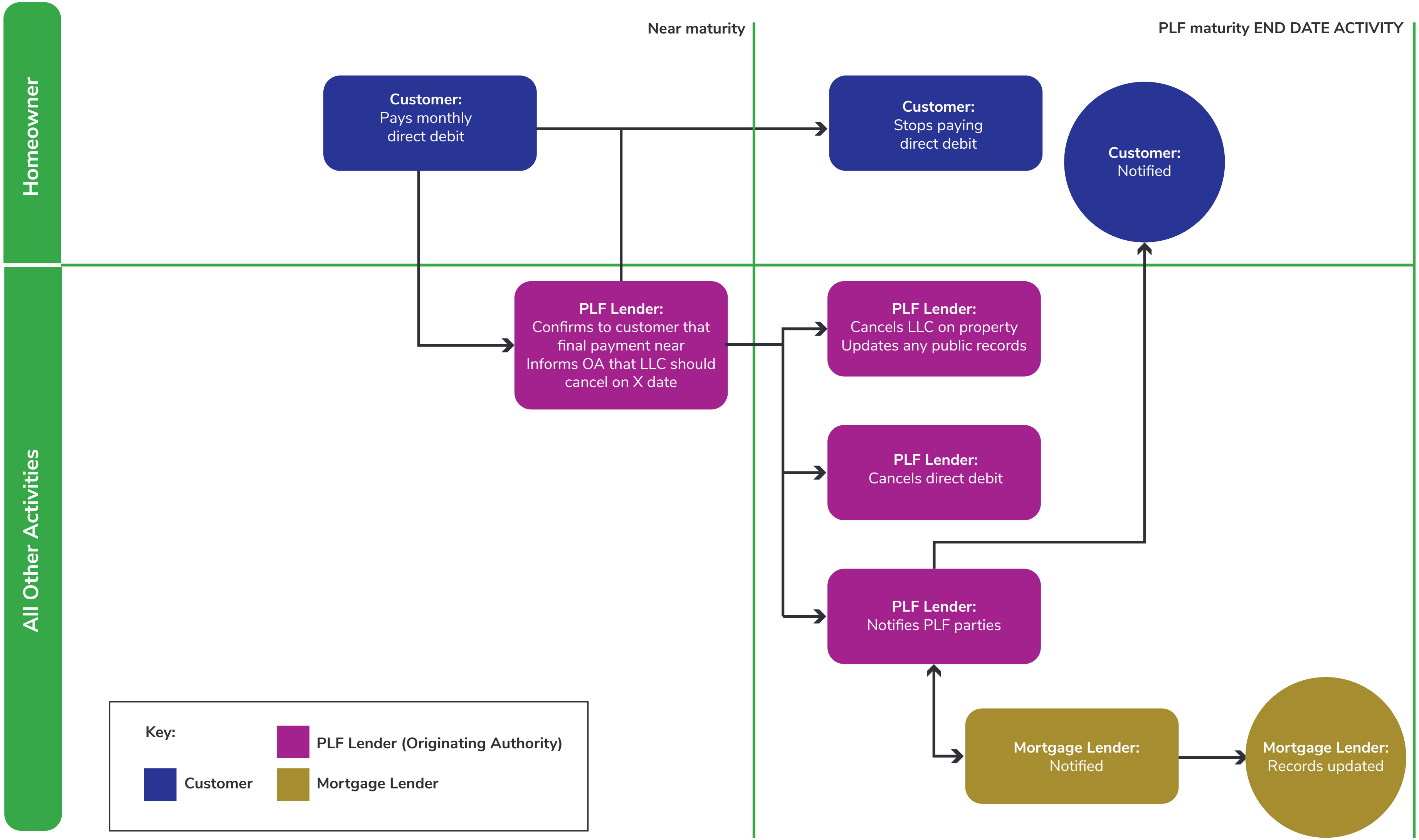
Origination | Homeowner accepts and is accepted for PLF for improvements on property



Origination | Buyer accepts and is accepted for PLF



Post-Origination: End of Product Term



Further considerations for the customer journey include:

- PLF capital providers must be the originating authority for the PLF Local Land Charge, as they will benefit from the Local Land Charge.
- Unlike the U.S. PACE market (see Annex 1), UK PLF does not require an administrator to deliver the scheme. This does not prevent the PLF capital provider from outsourcing services – such as customer checks, setting up direct debits or sending forms – but ultimately the PLF capital provider holds the responsibility for these activities.
- The PLF capital provider and existing mortgage lender need to undertake affordability checks at the point of sale (i.e. when the PLF is transferred to the new owner upon sale of the property).
- Government endorsement of PLF, or support for consumers to find and apply for PLF, will help facilitate the adoption of R-PLF. This view was reflected by participants in our consumer research.

Consumer insights

The collaboration commissioned consumer research through a series of focus groups, to assess the appeal of energy efficiency improvements and the proposed concept of R-PLF with homeowners in the UK.[19] This research focused on two main objectives:

- To explore the appeal and understanding of R-PLF amongst consumers in the UK and how this fits into their desire for energy efficient home improvements, when compared to alternative financing solutions.
- To explore how consumers would expect R-PLF to impact on the buying and selling process and identify any potential barriers to overcome before R-PLF can be launched in the UK.

Primarily, consumers are driven to make energy efficient improvements to their home through the desire to make household savings in the long-term. The decision is underpinned mostly by rational drivers, but language around comfort and warmth can resonate for some. Results show that education will be vital in order to overcome knowledge gaps around energy efficient assets.

There are many barriers that currently deter homeowners from retrofitting, including the delayed return on investment, a lack of knowledge about how to go about energy efficiency improvements, and uncertainty about how long homeowners will live in their current home. However, the main barrier for consumers is the upfront cost involved; reinforcing the importance of developing an attractive financial solution to finance upfront costs and to deliver long-term household savings.

PLF piqued interest with the focus groups, particularly amongst the family life stage. However, the immediate and biggest concern for all is the future impact on re-selling properties with PLF attached. The buying and selling of properties in the UK is already considered difficult and challenging, especially for first time buyers, and PLF could initially create further potential complications/barriers and raises red flags. This is a key area to resolve in the next stage of development of the PLF product, and was reflected by those more open to the concept who did expect that such concerns would be addressed prior to launch and that trials would occur.

Consumers were keen to see if there would be new energy efficiency grants or subsidies available as a result of the recent change of government, which could have implications on the speed of uptake of PLF. Consumers also noted the presence of PLF on properties will need to be transparent on sales materials and its impact on the sales/purchase process communicated to buyers and sellers. Consumers did see the benefits of PLF and expected for it to become an established part of the home buying process in time.

[19] Qualitative research consisted of six focus groups with residential property owners that would consider undertaking home improvements to improve energy efficiency. Two focus groups were conducted with each of the following life stages: pre-family (aged 25-39), family (aged 30-54), and empty nesters (aged 55-70).

Overall, the findings of our consumer research demonstrates that PLF needs to be focused primarily on financial benefits rather than solely environmental ones. Consumers need to be given hard evidence about the cost savings, the chance to develop their knowledge about new technologies, and see that PLF is backed by the government in order to commit to this solution. Importantly, further investigation into the concerns raised over selling a property with PLF is required, and a solution developed that reassures customers that this will not be to their detriment and has minimal impact on the property buying and selling process. A summary of the key takeaways of our research is provided in Annex 3.

I'd like to talk to people who've already done it but I like the idea of being able to fund the future proofing of your home
(Pre-Family)

As long as you can afford the additional monthly payments then it sounds like a great idea to help fund more expensive improvements that benefit your family and the property in the longer term
(Family)

So you buy the home after the work has been done. So you avoid the mess and you only pay for the period you'll be living there. It seems like a logical route to me
(Empty Nester)

I like the idea of helping to improve older homes but I'm concerned how it would impact my ability to sell it eventually with debt attached
(Pre-Family)

Once it becomes a normal practice it would seem a fair way of making longer term improvements. But I wouldn't want to be one of the first to take it on and risk not being able to sell my home
(Family)

I'd be concerned that it's linked to the property and not to the individual. What happens when you want to move on and sell, this would surely be a barrier
(Empty Nester)

5. Next steps for Property Linked Finance

As outlined in this report, there are various immediate term hurdles that must be worked through and market support is key for PLF to succeed as a financial solution in the UK. As such, we have developed a comprehensive step-by-step plan to enable the launch of PLF in the UK as follows:

Develop a **C-PLF pilot using** the Restriction on Title linking mechanism to demonstrate the concept.

Use lessons and insights from the C-PLF pilot to rapidly **refine the model** for both C-PLF and R-PLF, in particular educating customers on the financial benefits and developing robust processes around the sale of properties with PLF that minimises potential impacts and reassures customers they will not be negatively impacted.

Introduce **enabling legislation** to create a new type of Local Land Charge for a streamlined conveyancing process – including measures that ensure transparency about the existence of PLF, for example disclosure by estate agents in a similar manner to Energy Performance Certificates – to support PLF for commercial and residential buildings.

Establish relevant public and **industry bodies** to oversee the market and promote growth.

Prime the market for the launch of PLF, including financial institutions, mortgage brokers and intermediaries, lawyers, estate agents, property owners, regulators, local authorities and HM Land Registry.

Launch the R-PLF and C-PLF markets using the **Local Land Charge linking mechanism**, potentially using blended finance structures to de-risk and support the early phase of the market.

Continually **iterate and improve** the market, unlocking scale and diversity in capital providers and clients/ customers.

Our vision is to create a thriving UK PLF market that rapidly deploys capital towards the decarbonisation of residential and commercial buildings – both freehold and leasehold properties – across all regions of the UK. Our aim is to support property owners that are both able-to-pay and 'less' able-to-pay, create sufficient scale to attract institutional investment and enable PLF capital providers to access the capital markets, and to provide a greenprint for other countries to replicate.

Acknowledgements

We would like to thank the following organisations who have contributed their time, insights and expertise, in a personal capacity, to support this report: Addleshaw Goddard LLP, Gusto Research, Osborne Clarke LLP and TLT LLP.

Annex 1: International lessons

PLF has been deployed in several other countries around the world, including the U.S., Canada, and Australia. The tables below look at how PLF works in different international markets and the lessons the UK can learn from these examples as it develops PLF for its own market.

In November 2023, the GFI published Property Linked Finance: A new financial solution to decarbonise the UK's homes and buildings, which included case studies about Home Run Financing and Amalgamated Bank in the U.S. and the Sustainable Australia Fund in Australia. Collectively, they provide further valuable lessons about how PLF can be developed successfully in international markets and the pitfalls to avoid ahead of its introduction in the UK.

Lessons from the U.S. market

Product	Impact	Lessons
PACE: a PLF-style scheme that funds energy efficiency, renewable energy, resilience, public health improvements and water efficiency upgrades to residential and commercial buildings. PACE lenders finance 100% of the hard and soft costs[20] of eligible projects through a fixed rate, fully amortising financing for up to 30 years. PACE assessments are secured by a voluntary assessment on the property, which can automatically transfer upon sale. It is enabled by state legislation and at the local level by cities and counties.	$9.1 billion of funding for more than 371,000 residential properties and $7.2 billion of funding on over 3,340 commercial properties[21] While it has mobilised a significant amount of capital, in the context of the broader US property market, uptake of PACE has been slow. Weak underwriting standards and business practices in the residential market's early stages meant some homeowners signed up for loans they could not understand or afford. As a result, California enacted the PACE Preservation and Consumer Protections Act in 2016, which led to an almost 90% decline in annual originations in the state between 2017 and 2023.	PACE is dependant on state legislation, which has slowed down adoption and has created a fragmented market. Only California, Florida and Missouri have legislation that allows residential PACE, while commercial PACE is available in 33 states and Washington DC. In practice, the transfer of PACE to new property owners has not been commonplace, with anecdotal evidence that property owners tend to repay the outstanding PACE balance upon sale. In the UK, **further investigation into the property sale process and how any potential negative impacts can be minimised will be vital.** **In the UK, one national program, enabled by national legislation, which can be adapted for different tenures, capital providers, project types and geographies is key for replicability and scalability.** Nevertheless, a local focus is still important. In the U.S. market, hyper local delivery through trusted organisations, such as municipalities, is crucial to its uptake. **In the UK, vigorous underwriting standards, vigilance over contractors and excellent customer service are required,** so that customers understand that they really need and want what's being financed, the terms of that finance, and that what's being financed is installed correctly.
	Legislators were not involved in the introduction of PACE in the U.S, which slowed down adoption.	**In the UK, having banks, originators, regulators, legislators and retrofitters speaking in a unified voice before going to market will be crucial** to PLF's successful development and deployment.

[20] Hard costs relate to building materials and manual labour, while soft costs include design services and legal fees.
[21] PACE Market Data – PACENation (December, 2023)

Lessons from the Australian market

Product	Impact	Lessons
Environmental Upgrade Finance (EUF): a PLF-style scheme available for existing commercial buildings (with at least 50% of non-residential use) on rateable land, where the finance deployed has a measurable environmental benefit.[22] EUF has 4 to 20 year terms and covers up to 100% of hard and soft costs for energy efficient, water efficient and other building upgrades and retrofits, plus capital for major building renovations and repositioning. Payments are made through local council rates and can be split between commercial landlords and tenants. Because EUF creates a first ranking charge on the property, no personal or business guarantees are required.	By the end of 2021, EUF-supported projects had saved 27,448 tonnes of carbon emissions and were saving Australian businesses A$5,816,500 each year. Although EUF is now available across more of Australia, it is still a relatively small and fragmented market. Currently not available to residential borrowers, because existing residential legislation prohibits payment obligations being passed on to tenants.	Enabling legislation for EUF has been passed at a state level, not a national level, and EUF is currently only available in Victoria, South Australia and New South Wales, while Australia's residential EUF market is currently closed because of legislative constraints. **In the UK, one national program, enabled by national legislation, which can be adapted for different tenures, capital providers, project types and geographies is key for replicability and scalability.**
	Local councils have set up their own EUF schemes, which has stopped the market from scaling, because product suppliers and project developers encounter different rules for each council.	As PLF is developed for the UK market, **having a common administrative platform across all geographic regions is key.**

[22] In the Australian context, 'rateable land' refers to land that a local government can charge annual rates on to fund local services and infrastructure.

Further lessons from other markets:

PLF should be designed to be customer centric. Property owners must receive clear information about environmental improvements throughout their retrofit journey, still be able to obtain a mortgage on their property, and have easy access to support if the retrofit measures do not perform as expected. Property owners considering PLF should be offered and provided advice via organisations with appropriate permissions and in partnerships with installer organisations.

Because the UK does not have a property tax system like the U.S. and Australia, payments towards PLF cannot be collected as an assessment on the property owner's tax bill. This is why an alternative linking mechanism needs to be designed for the UK PLF market, as described in this report, using processes that are easy for consumers to understand.

Annex 2: The case for Commercial Property Linked Finance

Commercial properties face similar decarbonisation barriers to residential buildings, including high upfront costs, lack of awareness, limited access to finance and complex decision-making processes. However, as shown in the table below, leased properties and owner-occupied properties have different incentives, barriers and motivations for environmental improvements:

Leased vs Owner-Occupied Properties		
	Leased Property	**Owner-occupied Property**
Characteristics (Typical owner, reason for owning asset)	• Institutional investors, REITs, property funds • Own property for rental income and capital appreciation • **55% of UK commercial property by value**	• Owner-occupiers (businesses, corporations) • Own property for operational use and long-term business needs • **45% of UK commercial property by value**
Level of Awareness of Energy Efficiency Improvements	• Generally more aware due to increasing tenant demand and regulatory pressures • Varies depending on the landlord's ESG commitments and market demand • Biforcation of market – those that are aware and already acting (typically listed) vs aware but presently not sufficiently motivated to act	• Awareness generally lower compared to professional landlords • Varies depending on the company's ESG strategy and industry
Retrofit Trigger Point	• Lease expiry or tenant changeover • Major refurbishment or redevelopment • Change in building regulations or energy efficiency standards	• End of equipment lifecycle (e.g. HVAC, lighting) • Major renovations or expansions • Change in company's ESG strategy or targets
Drivers for Retrofit	• **Attract and retain tenants** • **Increase property value and rental income** • Comply with regulations and energy efficiency standards (e.g. Minimum Energy Efficiency Standards (MEES) – minimum EPC rating of B is required by 2030) • Align with corporate sustainability goals	• **Reduce operational costs (energy, maintenance)** • **Align with corporate sustainability goals** Other: • Improve employee productivity and well-being • Enhance corporate reputation and brand image
Financial Barriers to Retrofit	• **Split incentive problem** (landlord invests, tenant benefits) • Upfront capital costs • Uncertainty in payback period and ROI • Lack of tailored financing options	• Upfront capital costs • Long payback periods • **Competing priorities for capital allocation** • Lack of tailored financing options
Non-financial Barriers to Retrofit	• Disruption to tenants during retrofit • Lack of in-house technical expertise • Limited availability of qualified contractors • Uncertainty in energy savings and performance	• Disruption to business operations during retrofit • Lack of in-house technical expertise • Perceived complexity of retrofit projects • Uncertainty in energy savings and performance • **Regulations or energy efficiency standards not as strong a driver (MEES applies to leased properties)**
Typical Bank Financing Area	• Property-specific business units (e.g. Commercial Real Estate Division) • Typically property specific debt, or for general corporate purposes (noting the corporate primarily invests in property) • There may be headroom under existing debt (which the client could already approach the bank for), or the property is already fully leveraged	• SME/Corporate banking units or other sector-specific teams (e.g. Manufacturing, Retail) • Typically general corporate debt, the property may or may not form part of the collateral • There my be headroom under existing debt, however debt not property specific and there are competing priorities for capital allocation from a customer perspective • **No property specific funding options available**

As the following table demonstrates, barriers and incentives to retrofit also vary between commercial property sectors:

Commercial Property Sector Comparison*

Subsegment	Proportion of UK Commercial Building Stock (%)**	Retrofit Requirement	Energy Use Intensity***	Market Sentiment and Trends	Renewable Energy Potential	Retrofit Trigger Points	Drivers for Retrofit	Other Challenges
Office	29%	High (large proportion of older buildings)	High (HVAC, lighting, IT equipment) **Utility bills ~22.5% of service charge**	Negative sentiment Remote working shift, flight to quality, general uncertainty around asset class	Moderate (rooftop solar)	Lease expiry, major refurbishment	Attract/retain tenants, increase asset value, comply with regulations	Multiple tenants, split incentive
Hotels	3%	High (aging stock, stringent guest requirements)	Very High (HVAC, hot water, lighting)	Neutral sentiment Recovery from pandemic impacts, sustainability focus	Moderate (rooftop solar)	Major refurbishment, rebranding	Attract guests, reduce operating costs, ESG commitments	Seasonality, split incentive
Retail	30%	Moderate (varying age and condition)	High (lighting, HVAC) **Utility bills ~12.4% of service charge**	Negative sentiment Shift away from high street retail, e-commerce growth, general uncertainty around asset class	Moderate (rooftop solar)	Lease expiry, major refurbishment	Attract/retain tenants, increase asset value, comply with regulations	High tenant turnover, mutliple tenants, split incentive
Industrial Manufacturing	9%	Moderate (process-specific requirements)	Very High (energy-intensive processes) **Industry consumes 26% of total EU energy**	Neutral sentiment Reshoring, automation, Industry 4.0	High (rooftop solar, PPAs, waste heat recovery)	End of equipment lifecycle, major refurbishment		Disruption to operations, specialised equipment
Life Sciences	N/A - Not covered in IPF report	Moderate (highly specialised requirements)	Very High (labs, clean rooms, HVAC) **Consume 5-10 times more than offices**	Positive sentiment Continued growth and investment	Moderate (rooftop solar)	Equipment end-of-life, expansion	Reduce operating costs, comply with regulations, ESG commitments	Specialised equipment, energy reliability
Industrial Warehouses	22%	Low (simple structures, minimal HVAC)	Moderate (lighting, equipment) **Utility bills ~7.9% of service charge**	Positive sentiment E-commerce growth, supply chain resilience	High (rooftop solar, PPAs)	End of equipment lifecycle, major refurbishment	Reduce operating costs, comply with regulations, ESG commitments	Longer payback periods
Data Centres	N/A - Not covered in IPF report	Low (typically newly built assets)	Extremely High (cooling, IT equipment) **Data centres consume ~1% of global electricity**	Positive sentiment Rapid growth in data demand, sustainability concerns	Low (limited space, reliability concerns)	Equipment end-of-life, expansion	Reduce operating costs, ensure reliability, ESG commitments	Energy grid limitations, community opposition

* This table has been ordered by retrofit requirement with the highest requirement at the top of the table and lowest at the bottom. This is then further ordered by Proportion of UK Commercial Building Source (%) with the highest at the top.
** Source: Investment Property Forum. (2022). The Size and Structure of the UK Property Market: End-2020. London: Investment Property Forum.
*** Source: Savills Research. (2023). Commercial real estate exposed to higher energy costs. Savills. https://www.savills.co.uk/research_articles/229130/345756-0.
Note: Utility bills as a percentage of operational cost harder to quantify.

As shown in the table above, office and hotels are the asset classes with the highest retrofit requirements in the UK, and with office representing nearly the highest proportion of UK commercial building stock at 29%, this asset class is an obvious target for the C-PLF solution. The largest proportion of UK commercial building stock is retail which has a 'moderate' retrofit requirement and so could also provide opportunities for C-PLF solutions.

Addressing the retrofit funding gap

Current lending solutions have certain limitations when considering use for financing energy efficiency retrofits in both leased and owner-occupied commercial properties. C-PLF offers a different proposition that can fill some of these gaps:

- **Development facilities** do not always fund 100% of improvements and have short tenors resulting in less affordable amortisation repayments.
- **Investment loans** are not structured for any ongoing development so would require amendments to cover capital expenditure, and ultimately depend on debt capacity and the flexibility allowed within covenant levels.
- Owner-occupied properties typically fund retrofits through their **general corporate facilities**, which are limited/already structured at maximum lending capacity and result in retrofit decisions competing with other capital priorities; or through **asset specific lending** which offers asset specific recourse which wouldn't be suitable for retrofitting in some cases.
- **Green loans and sustainability-linked loans** do not address the 'payback period' barrier to retrofit or provide access to additional capital standalone ie without additional mezzanine debt, beyond reflecting investment pricing (green loans) or providing a pricing matrix for adherence to sustainability targets (sustainability-linked loans).
- **Retrofit finance products** have had limited uptake due to relatively small loan amounts (e.g. under £250k), not always funding 100% of improvements and pricing incentives alone being insufficient to mobilise demand.[23]

Annex 3: Summary of key consumer research findings

Qualitative research was conducted via six focus groups with residential property owners that would consider undertaking home improvements to improve energy efficiency. Two focus groups were conducted the following life stages, respectively: pre-family (aged 25-39), family (aged 30-54), and empty nesters (aged 55-70).

There were seven key takeaways from the research we conducted with homeowners about the appeal of a R-PLF in the UK and the potential barriers to address before such a solution is launched. These were as follows:

1. **The key focus for any energy efficiency improvement is household savings first and foremost** with environmental benefits very much a secondary element.

2. Home improvements are made based on a series of rational and emotional drivers and **financial investment is a core consideration and indeed a barrier for many**, particularly younger life stages. Increased education and knowledge and changes in government policy and mandates will influence take up.

[23] An example of such loans include the Clean Growth Financing Initiative offered by Lloyds: https://www.lloydsbank.com/business/commercial-banking/clean-growth-financing-initiative.html

3. **Upfront cost is the main barrier to many for making energy efficient improvements to their home.** This suggests there is a potential role for finance solutions to help overcome this. However, communication and the suitability of these financial solutions will be key to uptake.

4. **Appetite for taking on additional finance is low**, with older homeowners the most reluctant. However, a strong financial solution positioned in terms of cost savings, combined with confidence on how these technologies work, could boost appeal.

5. **Education in new energy efficient technologies is key to creating confidence among homeowners** and encouraging them to consider making investments. Local and government-backed 'hubs' could encourage greater consideration and take up.

6. PLF proposition piques interest, particularly amongst family life stage. However, the **immediate and biggest concern for all is the future impact on re-selling properties with PLF attached**. The buying and selling of properties in the UK is already considered difficult and challenging, especially for first time buyers, and PLF could initially create further potential complications/barriers and raises red flags - however, those more open to the concept did expect that such concerns would be addressed prior to launch and that trials would occur.

7. There was **acceptance that if PLF is launched, it would become an expected part of the home buying and selling process**. However, there was nervousness about being an early adopter of the solution.

Annex 4: Further reading on UK Property Linked Finance

The following reports provide further information on UK PLF, including insights from quantitative research into UK consumer appetite for PLF and the potential size of the R-PLF market in the UK.

- Property Linked Finance : Rising consumer demand for energy and the need for financial innovation by the Green Finance Institute (2022)
- Property Linked Finance : A new financial solution to decarbonise the UK's homes and buildings by the Green Finance Institute (2023)

Disclaimer

This report has been made available to you for information purposes only. Nothing in this report is to be construed as legal, tax, investment, financial or any other advice by Green Finance Institute Limited (‘GFI’). This report does not constitute, and is not intended to constitute, an invitation, solicitation, recommendation, endorsement by GFI or any third party to take any particular course of action (including, but not limited to, entering into any financial arrangements) in the United Kingdom or in any other jurisdiction. It is not intended to be relied upon by users in making (or refraining from making) decisions of any nature (including financial or investment decisions).

The information contained in this report is of a general nature and does not address the circumstances of any particular individual or entity. Certain information contained in this report has been obtained from or is based on sources that GFI believes to be accurate and complete. This report is not, and does not purport to be, a comprehensive or complete statement or reflection of the matters set out herein. GFI cannot guarantee and does not take responsibility for the accuracy or completeness of the information contained in this report. Any opinions set out in this report may be incorrect and may change at any time.

In reading and accessing this report, you alone assume the responsibility of evaluating the merits and risks associated with the use of any information contained herein before making any decisions on the basis of such information or content. GFI accepts no liability for any losses or damages (whether direct, indirect, special, consequential or otherwise) arising out of opinions, errors or omissions contained in this report, and it excludes all liability arising from this report to the fullest extent permitted by law.

You should not base any investment or financial decision solely on the basis of the information contained in this report. Where relevant, you should seek appropriate legal, tax, investment, financial or other professional advice.

GFI is not a registered investment adviser and it is not regulated by the Financial Conduct Authority.

Green Finance Institute

CONTACT US

info@gfi.green

greenfinanceinstitute.com