Financing Residential Energy Efficiency Upgrades

RACE for 2030
RELIABLE
AFFORDABLE
CLEAN
ENERGY

UNSW Centre for Sustainable Development Reform

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The authors have used all due care and skill to ensure the material is accurate at the date of this report. The authors do not accept any responsibility for any loss that may arise from anyone relying on its contents.

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Glossary of Abbreviations

ABS	Australian Bureau of Statistics
ACOSS	Australian Council of Social Service
ADI	Authorised Deposit-taking Institution
AASB	Australian Accounting Standards Board
APRA	Australian Prudential Regulation Authority
AI	Artificial Intelligence
ASIC	Australian Securities and Investments Commission
ASFI	Australian Sustainable Finance Initiative
BNPL	Buy Now Pay Later
CEEPI	Clean Energy Equipment Price Index
CGT	Capital Gains Tax
CEFC	Clean Energy Finance Corporation
CFR	Council of Financial Regulators
DIY	Do It Yourself
EUA	Environmental Upgrade Agreement
EUAH	Energy Upgrades for Australian Homes
GPLFI	Global Property Linked Finance Initiative
HBR	Harvard Business Review
HELP	Higher Education Loan Program
HEUF	Household Energy Upgrades Fund
HOLC	Home Owners Loan Corporation
HEM	Household Expenditure Measure
ICL	Income Contingent Loan
IFRS	International Financial Reporting Standards
ISSB	International Sustainability Standards Board
LVR	Loan to Valuation Ratio
NatHERS	Nationwide House Energy Rating Scheme
NCC	National Construction Code
NRRRS	National Risk & Resilience Rating System
PLF	Property Linked Finance
RBA	Reserve Bank of Australia
RWA	Risk-Weighted Assets

Executive Summary

Finance has a critical role to play supporting households to invest in energy efficiency improvements in their homes. The report considers the policy reforms that can support the establishment of a finance market to support investment in energy efficiency upgrades that is efficient, resilient, fair to all[1].

Financial institutions have innovated to offer a range of residential energy efficiency finance products for owner-occupiers and residential investors. Analysis of the residential energy efficiency finance products offered by the major banks demonstrates that households do have a range of energy efficiency finance products to select from. The common features of products are individual pricing the risk of loans, interest rates generally higher than standard variable housing loan rate and loan repayments shorter than housing loan repayment terms.

The rates of interest for energy efficiency financing products reflect the standard terms for consumer finance products which are priced at higher interest rates than housing loan products. The loan repayment terms offered for energy efficiency financing products range from one to seven years which reflects the standard repayment term for personal loans that are shorter than the repayment terms for housing loans (25-30 years). Longer tenor for loans supports serviceability and is particularly important for investment in energy efficiency upgrades that have longer payback periods.

The characterisation of energy efficiency financing products as consumer finance may be one of the reasons why energy efficiency financing products are not being taken up at scale. Consumer finance products historically developed to finance consumer goods including washing machines and refrigeration whilst housing finance products were developed to allow households to own their own homes. Housing loans and consumer finance have different regulatory regimes which impact on the structure of products. An anomaly with the characterisation of residential energy efficiency financing products as consumer finance products is that investments are permanent additions to the house which are commonly included as features at the point of sale.

In addition to financial products offered by financial institutions, other stakeholders across Australia's financial system have the capacity to provide finance for residential energy efficiency investments and yet are currently underutilised in the Australian financing market. This report considers the role of alternative financing mechanisms including income contingent loans (ICL) and property linked finance (PLF) that can support energy efficiency investments for Australians that may have challenges accessing products offered by financial institutions. One mechanism identified is to exclude ICL and PLF from responsible lending obligations.

The report considers the importance of *behavioural finance* to energy efficiency financing decisions by households. The 'paradox of choice' means that more information does not necessarily result in increased decision making, whilst aversion to loss may mean that households have a preference not to take on debt to invest in energy efficiency upgrades. Information on payback periods is identified as important to provide households with comfort that decisions to invest in energy efficiency upgrades will leave them financially better off. Households may be discouraged to borrow due to factors including the friction of applying for loans. An understanding of choice architecture can inform regulatory nudges to establish products that align with the needs of households. A key challenge is to connect the design of residential energy efficiency financing products with the desire of households to make incremental decisions on energy efficiency investments that suit their circumstances.

The report examines the extent to which the residential energy efficiency financing market is supporting all households to invest in energy efficiency improvements, concluding that low-income households are missing out. Three groups are examined; homeowners with mortgages, homeowners without a mortgage and residential investors. Residential investors do not face impediments to accessing finance that other groups do. The key issue for residential investors is not about the access to finance, but about whether the regulatory environment drives residential investors to upgrade their rental properties. For homeowners with mortgages and homeowners without

a mortgage a ‘net zero poverty premium’ exists for low-income earners seeking to access finance for residential energy efficiency upgrades.

The report identifies an ‘ideal state’ for residential energy efficiency upgrades financing as one where the financial system collectively enables householders, no matter what their financial circumstances, to access finance to invest in energy efficiency improvements that reflect their needs. The ideal state for energy efficiency finance supports:

> **Efficiency:** residential energy efficiency upgrade financing should be easy to access with finance directed to where energy efficiency improvements have the biggest impact in terms of reducing emissions at the lowest cost.

> **Resilience:** recognising the impact of residential energy efficiency upgrade financing on household cost of living by reducing their energy bills. A reduction in energy bills improves a householder’s costs and therefore improves their ability to service loans.

> **Fairness:** the residential energy efficiency upgrade financing market should not only operate with integrity but facilitate outcomes for all Australians to invest in energy efficiency that is not dependent on personal wealth to access finance.



Recommendations

To establish an Australian residential energy efficiency financing upgrade market that is efficient, delivers resilience for households and is fair to all, we propose the following recommendations:

It is recommended that financial institutions provide verifiable and timely reporting on their energy efficiency financing loans as part of reporting aligned to AASB S2 (Climate Related Disclosures). Financial institutions reporting would include the number of loans, the tenor of loans, interest rates, distribution of income quartiles and average size of loans to support policy makers to identify the state of the energy efficiency financing market.

It is recommended that ASIC review responsible lending regulatory guidance (RG 209) to consider removal of Income Contingent Loans and Property Linked Finance in a similar way to the removal of Higher Education Loan Program (HELP) debts to facilitate access to finance for households that face challenges accessing traditional lending.

It is recommended that the Australian Government review the market for residential energy efficiency financing focusing on addressing behaviour finance challenges, including aversion to loss, discouraged borrowers and choice architecture. A review should consider alternative financing arrangements including income contingent loans, property linked finance and buy-now-pay-later (BNPL) finance that can support households to improve the efficiency and climate resilience of their homes.

It is recommended that a centralised and reliable source of information on payback periods for energy efficiency investments should be developed. This should be delivered through a trusted entity such as an Energy Efficiency Hub. The presentation of information that identifies the financial savings that households can make from investing in energy efficiency improvements addresses behavioural factors including loss aversion and support households to invest in energy efficiency upgrades.

It is recommended that to address the net zero poverty premium for low-income earners accessing energy efficiency financing that the Australian Government review the HEUF with the objective of directing financial incentives to low-income households.

Introduction

This report considers the strengths and limitations of policy and regulation for enabling the financing of energy efficiency upgrades for residential housing in Australia. The report focuses on the role Australia's financial system plays supporting investment in residential energy efficiency, noting that a financial *system* is wider than the finance sector, and includes governments, regulators and households. The report has been structured into five sections.

Section 1 outlines the role a financial system plays allocating capital within an economy. Participants include governments and regulators, financial institutions, households and businesses. The section analyses how financial system regulation influences the financial products offered by financial system participants.

The regulatory structure for housing finance and consumer finance is examined. The current focus of Australian financial system regulators on efficiency, resilience and fairness together within the Basel III international banking capital framework means that housing loans must align to established regulatory principles. An implication of the regulatory structure for housing loans is that, if a household wishes to increase their housing loan by a small amount to finance energy efficiency improvements, they need to reapply for their loan. For the financial institution, requests for small loans are directed towards consumer finance products.

Consumer finance products are regulated by ASIC through the National Credit Act, which includes the National Credit Code. One of the implications of the regulation of consumer finance is the obligations of a credit licensee is to assess whether the consumer finance product is suitable. One of the implications of the regulation of consumer finance is that households that do not have regular income may find it difficult to access finance products.

Section 2 considers the way in which financial institutions have innovated to offer a range of residential energy efficiency finance products for both owner-occupier loans and investor loans.

Housing finance and consumer finance products evolved to meet different needs with different product features that reflect credit risks. The role of incentives through the Australian Government's intervention in 2025 to establish the Household Energy Upgrades Fund (HEUF) is considered. Other examples of government intervening are considered, with the Australian Government's Higher Education Loan Program an example. Alternative financing mechanisms for energy efficiency investments by households are identified as Income Contingent Loans and Property Linked Finance.

Section 3 considers residential energy efficiency financing from the perspective of behavioural finance, which is defined as the study of how psychological phenomena impact financial behaviour. The report briefly examines four behavioural factors; information and disclosure, discouraged borrowers, aversion to loss and choice architecture that may influence decision-making. The implication of behavioural factors is that borrowers may be discouraged from seeking energy efficiency financing products.

Section 4 considers the equity implications of energy efficiency financing, focusing on three low-income groups: homeowners with mortgages, homeowners without mortgages and residential investors. From a financial perspective, households that have lower incomes and lower assets than other households are either regarded as having higher finance risks, or do not meet responsible lending criteria. The implication is that low-income households may either find it more difficult to access finance for energy efficiency improvements, or, when they are able to access finance, are only able to do so on terms and conditions that are not as favourable as those available to higher income quartiles. Therefore, it is argued that a net zero poverty premium currently exists in Australia for residential energy efficiency financing.

Section 5 analyses the policy implications of developing a residential energy efficiency financing market that meets the needs of all households. A key insight is that residential energy efficiency loans have been characterised as consumer finance products, with shorter terms and higher interest rates than housing loan products. An anomaly of the characterisation of residential energy efficiency financing products as consumer finance products is that investments are

permanent additions to the house. Unlike consumer durables, if a property is sold, then the energy efficiency improvements stay with the property.

The report concludes by arguing that, whilst we have seen significant product innovation, the market for residential energy efficiency finance products does not support low-income Australians to make energy efficiency improvements.

Section 1: Structure of Australian Housing Finance Market

This section considers the structure of Australia's financial system to understand the opportunities and constraints that exist which impact on the ability of financial institutions to provide finance for households to invest in energy efficiency in their homes.

Australia's financial system is wider than its finance sector. The 2020 Australian Sustainable Finance Roadmap produced by the Australian Sustainable Finance Initiative (ASFI) defined Australia's financial system as:

> "a complicated system of intermediaries and markets that allocate capital, share risks and facilitate all types of trade... The primary actors in Australia's financial system are governments and regulators, financial institutions, households and businesses. Financial institutions are critical influencers and enablers of activity across the financial system. Governments play multiple roles, including regulating the activities of financial institutions, and as investors and borrowers. Ultimately, however, the purpose of a financial system is to serve households and businesses".[2]

A financial system has a key role to play allocating capital in an economy. The regulation of Australia's financial system is principally through federal agencies. Over the last 45 years the structure, competitiveness, stability and innovation of the financial system have been subject to a number of inquiries including the Campbell Inquiry (1981)[3], Wallis Inquiry (1996)[4] and Murray Inquiry (2014)[5] . Consensus has emerged around the importance of three themes:

> **Efficiency**: an efficient system allocates Australia's scarce financial and other resources for the greatest possible benefit to our economy, supporting growth, productivity and prosperity.

> **Resilience**: the financial system adjusts to changing circumstances while continuing to provide its core economic functions, even during severe shocks. Institutions in distress are resolvable with minimal costs to depositors, policy holders, taxpayers and the real economy.

> **Fairness**: fair treatment occurs when participants act with integrity, honesty, transparency, and non-discrimination. A market economy operates more effectively when participants enter into transactions with confidence that they will be treated fairly.[6]

A financial system is also influenced by the way in which finance is regulated. To ensure the stability and prosperity of the Australian financial system, Australia has three regulatory authorities, the Reserve Bank of Australia (RBA), the Australian Prudential Regulation Authority (APRA), the Australian Securities and Investments Commission (ASIC) which are coordinated by the Council of Financial Regulators (CFR) which also includes representatives from the Australian Treasury.

Reserve Bank of Australia: Established through the Reserve Bank Act 1959, the RBA's objective is the stability, maintenance of full employment, economic prosperity and welfare of the people of Australia.[7]

Australian Prudential Regulation Authority: APRA's objective is the financial safety of institutions and the stability of the Australian financial system.[8]

Australian Securities and Investment Commission: ASIC is Australia's integrated corporate, markets, financial services and consumer credit regulator.[9]

Local and state governments principally focus on providing incentives that may improve the financial costs of energy efficiency upgrades but also have the ability to stimulate investment in housing through the collection of rates and charges on properties. An implication for residential energy efficiency investments is that Australia's financial system regulatory structure creates obligations for regulated entities that influence the structure of financial products. This section focuses on two core finance products; housing finance and consumer finance.

Housing Finance

The financing of housing is influenced by rules on ownership and taxation incentives for housing. The ownership of housing in Australia operates on market principles. The market for buying a house in Australia is not restricted for Australian residents. A home can be owned by any resident or business. From 16 February 2025 the Australian Government announced that it will impose a temporary ban on foreign purchases of established dwellings.[10] The Australian taxation system incentivises individuals to own houses by exempting an individual's home residence from Capital Gains Tax (CGT).[11] The 2026-27 Federal Budget introduced changes restricting negative gearing to new builds from 1 July 2027.[12]

A major component of financing investment in housing in Australia is through Authorised Deposit-taking Institutions (ADI), which are commonly referred to as banks. According to APRA, as of March 2026, ADIs had almost $2.5 trillion of loans outstanding for housing, with 67% owner-occupied housing loans and 31% investor loans for houses.[13] In the December 2025 quarter, ADIs issued $217.6 billion in new loans, 61.8% which were for owner-occupied properties. This was down from 64% in December 2024 quarter.[14] The proportion of loans with loan-to-valuation ratio (LVR) greater than 80 per cent was 16.9%, an indicator of the overall quality of housing lending.[15]

The significant size of housing loans in Australian banks' portfolios has resulted in APRA developing a capital framework for housing lending based on a common set of risk-weights that aim to support financial system stability. APRA's framework is largely based on Basel III, the internationally agreed framework developed by the Basel Committee on Banking Supervision[16]. Risk-weights for housing lending vary based on the loan-to-valuation ratio (LVR) and are impacted by an ADI's estimate of the risk of borrower default. Risk drivers in housing loan models adopted by ADIs include:

- Borrower characteristics such as the borrower's debt-to-income ratio, number of borrowers, the borrower's occupation, and whether the borrower is self-employed;
- Loan characteristics such as the LVR, whether the loan is for owner-occupation or investment purposes, whether the loan is revolving or amortising, and whether loan repayments are principal-and-interest or interest only;
- Behavioural characteristics such as the extent to which the borrower has made payments ahead of schedule, transaction and payment history relating to the borrower's other retail products, and the borrower's arrears history; and
- Property collateral characteristics such as whether the property is a detached house or unit, whether the property is located in a metropolitan, regional or remote area, and the number of properties securing the loan.[17]

APRA categorises residential investor loans based on the predominant purpose of the funds, specifically distinguishing them from owner-occupier loans. Aligned with Basel capital framework, APRA has increased the capital requirements for investment loans through higher risk-weights.[18] At times APRA also intervenes to limit high debt-to-income (DTI) lending to investors to ensure housing-related vulnerabilities in the financial system.

The implication for residential energy efficiency investments of APRA's risk-weight regulatory capital framework for housing lending, and its alignment with the Basel III framework, is that financial institutions that provide loans for housing must do so according to established regulatory principles. The reality is that under existing regulatory arrangements, this limits the extent to which an ADI can universally adapt the features of a home loan. The regulation of housing does not prohibit innovation, and ADIs are able to offer housing loan products with 'green' features. However, an implication of the regulatory structure for housing loans is that, if a household wished to finance a small investment in energy efficiency, unless previously agreed as part of the initial housing loan, a customer would need to reapply for their home loan to incorporate the additional finance. This impacts both the householder and the financial institution. For the householder, the time and cost of reapplying for a loan act as a disincentive.[19] For the financial institution, there is an incentive to direct requests for small loans towards consumer finance products that have been specifically designed to provide consumers with the ability to finance smaller investments. The overall result is market innovation focuses on consumer finance products that have higher interest rates and shorter repayment terms than housing loans.

Consumer Finance

Consumer finance includes a variety of products including personal loans, credit cards and short-term loans that are used to purchase a range of products from motor vehicles, white goods through to general household goods. Consumer finance is regulated by ASIC through the National Consumer Credit Protection Act 2009 (National Credit Act), which includes the National Credit Code.[20] A key element of the National Credit Act is the requirement that credit licensees must comply with responsible lending conduct obligations.[21] ASIC's Regulatory Guide 209 (Credit licensing: Responsible lending) sets out ASIC's views that responsible lending obligations involve:

- Making reasonable inquiries about a consumer's financial situation, and their requirements and objectives;
- Taking reasonable steps to verify a consumer's financial situation
- Making a preliminary assessment about whether the credit contract is 'not unsuitable' for the consumer
- If a consumer requests it, being able to provide the consumer with a written copy of the preliminary assessment or final assessment.

Responsible lending obligations have been recently updated to extend application of the National Credit Code to 'buy now pay later' (BNPL) contracts offered by new financial system entrants such as Afterpay. The Australian BNPL market is currently estimated to be around $30 billion[22], with millennials dominating (44.25% of the market) with fashion and health wellbeing products the most significant uses for BNPL loans.

Recent amendments introduced 'low-cost credit contracts' as a new category of regulated credit under the National Credit Code. A low-cost credit contract has modified responsible lending obligations, but credit licensees are still required to make reasonable inquiries about the consumer's requirements, objectives and financial situation, take reasonable steps to verify their financial situation and assess if the credit contract is suitable. [23]

ASIC also updated RG 209[24] to acknowledge that Higher Education Loan Program (HELP) debts are different from other forms of debt because the amount that is required to be repaid depends on a person's level of income. HELP debts may now be considered differently by a lender from other consumer debts, and a lender may consider it appropriate not to factor in an applicant's HELP debt when calculating a consumer's outgoings. An impact of the update to RG 209 is that HELP debt commitments do not negatively impact individual credit scores.

The preparedness of policy makers to update credit regulations for both BNPL and HELP recognises that the credit products are not static but constantly evolve. A key question is whether the regulation of credit products can evolve to facilitate energy efficiency financing.

Evolution of mortgage and consumer finance products

It is useful to understand how housing loans and consumer finance products have developed over time, and how the classification of loans influences loan conditions.

Housing Loans

The early development of housing loans can be traced back to 1775 with Ketley's Building Society formed at the Golden Cross Inn in Birmingham, where building society members effectively committed to build each other's homes.[25] Home loans were commonly structured as short-term financing, with borrowers required to pay ballon payments to repay outstanding debt at the end of a specified term. In Australia, the short terms of housing loans created a mismatch between bank assets and liabilities and may have contributed to Melbourne's land boom crash in the 1880s. [26]

The introduction of the Commonwealth Housing Act 1927 by the Bruce-Page government represented the first significant attempt by the Australian Government to intervene directly in the national housing loan market. The Act established a Housing Fund with £20 million to be lent to state savings banks for housing loans. Loans of up to 90% of the value of a house and land, up to a maximum value of £1,800, were permitted.[27] Whilst the Act did not directly prescribe a loan term, it required that loans would be continued for a period sufficient to provide for the redemption of the loan. In parliamentary debate to introduce the Act, Dr Earl Page discussed the state of housing finance at the time with moneylenders providing loans under rent-purchase arrangements that

frequently did not result in the householder owning their home. Page commented the objective of the Act would be arrange loan terms of 20-30 years which subsequently became standard terms.[28]

Short term housing loan contracts were also common in the United States (US) prior to the Great Depression. The standard term for a residential mortgage was typically 5-10 years, with a requirement that at the end of the contract loan period the consumer would pay out the entirety of the loan. In the US, the Great Depression led to annual mortgage foreclosures of around 250,000 per year between 1931 and 1935. This ultimately led to the establishment of the Home Owners Loan Corporation (HOLC) in 1933 which bought distressed loans from banks offering households a 15-year, fixed-rate, fully amortizing loan. [29] The Roosevelt administration subsequently created the Federal National Mortgage Association (Fannie Mae) which was designed to buy loans from banks. The key point is that government intervention established the repayment terms for housing loans that have become standard practice.

Consumer finance

There is similarly a long history of the evolution of financing consumer household goods including refrigeration, washing machines through to motor vehicles. In 1923, General Electric developed an advertising campaign that promoted electric appliances as the “cheapest servant in the house.” Financing consumer goods through instalment payments meant that savings would pay for themselves, for instance buying a fridge resulted in not having to pay for ice to store meat.[30] In Australia low default rates for consumer finance products led to a number of firms entering the market, with the major banks ultimately dominating consumer finance since the late-1980s.[31]

Reflections

Australia’s financial system is wider than the finance sector and is influenced by the regulatory regime for housing finance and consumer finance products. Through an understanding of the breadth of Australia’s financial system participants there is the ability to consider innovations that ensure that the market for energy efficiency financing meets the needs of all Australians.

Section 2: Financing of Energy Efficiency Upgrades

This section considers the way in which Australia's financial system has innovated to provide finance to support investment in energy efficiency upgrades for houses. This includes an examination of the current owner-occupied residential offerings of major financial institutions, considering the role of Australian Government financial incentives as well as the evolution of mortgage and consumer finance products. The role of alternative financing mechanisms is also examined.

Australian financial institutions have innovated to provide a range of energy efficiency finance products to their customers. Table 1 provides a comparison of owner-occupied energy efficiency finance products offered by the major four banks at the time of writing. Note that terms and conditions of loans, including interest rates, are subject to change. Products are also offered by community-owned banks, including Bank Australia and Great Southern Bank, as well as consumer finance companies Brighte, Humm, Latitude and Plenti. A detailed comparison of loans for the purposes of energy efficiency is provided by the State Electricity Commission of Victoria (SEC).[32] Financial institutions that offer energy efficiency finance products for owner-occupiers may also extend offerings to investor loans as is the case with Westpac Sustainable Upgrades Home Loan and CommBank Home Energy Upgrades Loans.[33]

The purpose of considering the offerings of the major banks is to understand the key features of standard energy efficiency products that make up the overall value proposition for the customer. The table illustrates that factors that influence the overall value proposition is broader than the rate of interest on a loan and includes the term of the loan.

Table1: Home Energy Efficiency Financing Products Offered by Major Banks

Financial Institution	Home Energy Efficiency Products
ANZ Bank[34]	**Personal loan for energy efficient purposes** Variable Interest rate from 7.49% p.a. to 19.99% p.a. Comparison rate from 8.18% p.a. to 20.58% p.a. Borrow up to $75,000 Term 1 to 7 years.
Commonwealth Bank of Australia[35]	**Home energy loan (fixed rate) for home loan customers** Variable Interest rates: 3.99% p.a. Comparison rate: 3.99% p.a. Borrow from $4,000 to $50,000 Term 1-7 years **Home energy loan (fixed rate)** Interest rates: 6.99% p.a. - 8.49% p.a. (Comparison rate: 8.40% p.a. - 9.88% p.a.) Borrow from $4,000 to $50,000 Term 1-7 years **Home energy loan (variable rate)** Interest rates: 6.99% p.a. - 8.49% p.a. Comparison rate: 8.40% p.a. - 9.88% p.a. Borrow from $4,000 to $50,000 Term 1-7 years (CommBank a HEUF participant)
National Australia Bank[36]	**Variable Rate Personal Loan** Variable Interest rate from 7.00% p.a to 21.00% p.a. Comparison rate from 8.41% p.a to 22.29% p.a. Borrow up to $55,000. Term 1- 7 years
Westpac[37]	**Sustainable Upgrades Home Loan** Up to 10-year loan term Variable Interest rate 4.24% p.a. Comparison rate 4.24% p.a Borrow up to $50,000. Must have or be approved for a Westpac home or investment loan with a minimum loan size of $150k (Westpac a HEUF participant)

Analysis of the residential energy efficiency finance offerings of the four major banks reveals that there is a similarity of loan features. Two loan features that may influence the demand for loans are interest rates and loan repayment terms. The lowest publicly disclosed interest rate offered by the major banks at the time of writing for an energy efficiency loan was Commonwealth Bank with a comparison rate of 3.99%. This product is offered to Commonwealth Bank customers with an existing home loan but as a consumer finance product.

The wide discrepancy of interest rates is an indicator that the major banks are individually pricing the risk of loans. Interest rates on offer by major banks reflect relatively standard terms for personal loans which are generally priced at higher interest rates than housing loans. At the time of writing the standard variable home loan interest rate offered by Westpac was 5.75%.[38]

Repayment terms offered by the major banks ranged from one year to ten years, with the most common loan repayment term being one to seven years- which reflects the standard repayment term for personal loans.

In recent years, the consumer finance market has been disrupted by new entrants offering Buy Now Pay Later products. The Australian BNPL market is currently estimated to be USD 22.71 billion[39] ; millennials dominate with 44.25% of the market, with fashion and health wellbeing products the most significant uses for BNPL loans. BNPL is influencing the residential energy efficiency financing market through providers including Humm - which offers loans for solar up to $50,000, with a repayment timeframe of up to 120 months.[40]

Incentives for Residential Energy Efficiency Financing

The Australian Government has sought to improve the incentive for households to borrow to finance energy efficiency investments announcing on 23 May 2023 that $1 billion would be provided to the Household Energy Upgrades Fund (HEUF) managed by the Clean Energy Finance Corporation (CEFC) to partner with banks and other lenders on upgrading homes. [41] The HEUF is open to households with or without a mortgage, rental property owners, and strata properties.[42]

According to the CEFC, as at the end of November 2025, $405 million had been committed against the HEUF with $180 million deployed.[43] Table 2 provides a summary of finance committed by the HEUF. This reveals that incentives have been predominantly provided to consumer finance products with higher interest rates and shorter repayment terms than housing loans.

Table 2: Australian Government Incentives for Energy Efficiency Financing

Financial Institution	Home Energy Efficiency Products
Brighte	HEUF Discounted Green Loan Loan type: Personal loan Loan size: $2,000 - $55,000 Discounted introductory rates
Commonwealth Bank of Australia	CommBank Home Energy Upgrades Loan Type: Personal loans
ING	ING Green Upgrade Loan Loan type: Mortgage sub account Maximum loan $50,000
Plenti	Plenti HEUF Discounted Green Loan Loan Type: Personal loans Discounted rates off Plenti's standard green loans
Westpac	Westpac Sustainable Upgrades Home Loan Loan type: Mortgage sub account Maximum loan $50,000
Bank Australia	Bank Australia Clean Energy Home Loan (Program paused) Loan type: Green mortgage Reduced variable rate for first five years
Enreal and Zelora	Enreal and Zelora Loan Type: Subscription plans Discounted fixed monthly payments
Plico	**Subscription plans** Discounted fixed monthly payments Solar, battery and VPP services Availability limited to certain states

Governments may incentivise investment in housing and energy efficiency upgrades through a range of programs and initiatives.

In addition to establishing the HEUF, the Australian Government has sought to incentivise households to invest in energy efficiency through the Cheaper Home Batteries Program that was launched on July 1, 2025. The program provides a discount of 30% on the upfront cost of installing a range of small-scale battery systems (5 kWh to 100 kWh). The program began with an estimated budget of $2.3 billion, which was extended by $4.9 billion in December 2025 to bring the total program value to $7.2 billion through to 2030.[44] As of 1 May 2026, the scheme was amended to incentivise up to 14 kWh battery sizes, rather than incentivising all batteries at the same rate regardless of size (up to 50 kWh). Programs such as Cheaper Home Batteries Program do not formally link to energy efficiency financing products. However, they may increase the incentive for households to make an immediate investment decision to qualify for rebates and therefore act as a nudge to access finance and to continue on their home electrification journey.

Financing of energy efficiency upgrades is also supported by the NSW Government's $238.9m Home Energy Saver Scheme that is offered through approved finance providers enables eligible borrowers to access a zero-interest loan of up to $15,000 to invest in eligible energy saving upgrades. To be eligible borrowers must have a combined, taxable household income of up to

$210,000. In addition, eligible households with income up to $80,000 are able to access a discount of up to $4,000 on eligible energy saving upgrades.[45]

A further financial incentive offered by the Australian Government that influences investment in housing is incentives for build-to-rent housing. The Australian Government has reduced the managed investment trust withholding tax rate from 30 to 15 per cent and provided accelerated tax deductions for construction costs, increasing the capital works deduction rate from 2.5 to 4 per cent per year. In 2023, build-to-rent developments made up around 0.2 per cent of the value of the total Australian residential sector. In comparison, build-to-rent accounts for around 5.4 per cent of the total value of the residential sector in the UK and 12 per cent in the US. While the investment growth trajectory in Australian build-to-rent is uncertain, it is likely to become part of the housing landscape.[46] Energy efficiency upgrades are not incorporated into the Australian Government's incentives for build-to-rent.

Alternative Financing Mechanisms

In addition to financial products offered by financial institutions, other stakeholders across Australia's financial system have the capacity to provide finance for residential energy efficiency investments. The best-known example of an alternative finance product is the Australian Government's Higher Education Loan Program (HELP), which provides loans to students for the purpose of undertaking higher education studies. In 2023-24, prior to reforms by the Australian Government, total outstanding HELP debt reached $81 billion across 2.9 million individuals, equating to an average student debt of $27,650.[47]

Income Contingent Loan Scheme for Energy Efficiency

Rewiring Australia argues that age pensioners who are asset rich, but cash poor are unlikely to access conventional green loan products because they have very low incomes to make regular repayments. According to Rewiring Australia, establishing a Electrify Everything Loan Scheme for Pensioners for 1.76 million age pension households (representing 24% of Australia's 7.2m owner-occupied households), has the potential to establish a market of $3.14b of loans for home upgrades over 4 years.[48] Rewiring Australia argue an Electrify Everything Loan Scheme could be developed as an income contingent loan (ICL) scheme with loans repaid by income tax withholding. Repayments would only be required after a certain income threshold has been met. Loans would be secured against the upgraded property, with the loan to be repaid out of settlement funds on the transfer of title.[49]

The establishment of an ICL Scheme for energy efficiency is consistent with the 2020 Australian Sustainable Finance Roadmap Recommendation 23 that proposed that Australia's financial system participants develop income and revenue contingent loans as a mechanism to support individual and community resilience to acute shocks as well as chronic threats to climate and health, which amplify the impact of acute shocks on the most vulnerable.[50]

Property Linked Finance

An alternative financing mechanism for energy efficiency investments by households that requires local government intervention is Property Linked Finance (PLF). PLF has been used for the financing of infrastructure, with benefited properties agreeing to pay the costs over a long period of time through an assessment charge on their property tax bill.[51] PLF is not a new mechanism in Australia but currently exists as Environmental Upgrade Agreements (EUAs). 'EUAs are voluntary funding agreements between a building owner, a finance provider and a local council, designed to help overcome barriers to the implementation of environmental upgrades and retrofits to existing buildings.'[52] Australia's first EUA was signed in October 2011 as part of the City of Melbourne's 1200 Building Program[53]. EUAs are structured as a local government charge similar to existing council rates, with a statutory rate placed on the land. The upgrade charge is attached to the land, and upon sale it is transferred to the new owner. As the obligation is attached to the property rather than the individual, an EUA could be interpreted as outside the scope of the National Consumer Credit Protection Act, and therefore not subject to traditional consumer credit regulation.[54]

There is a global discussion on the opportunity for PLF to unlock a flow of finance. On 22 September 2025 the Global Property Linked Finance Initiative (GPLFI) was launched by the Green Finance Institute and the Climate Bonds Initiative as a global effort to scale PLF as a climate-aligned asset class.[55] GPLFI aims to transform PLF into a scalable global asset class to accelerate investment in net zero and climate-resilient buildings.

Reflections

There is evidence that Australia's financial system has innovated to provide finance to support investment in energy efficiency upgrades for houses. The Australian Government has provided financial incentives to encourage the take-up of energy efficiency loans through the HEUF which are available to both owner-occupiers and investors. Evidence suggests that the take up of HEUF loans has to date been modest with incentives directed at the interest rates offered for consumer finance products. Whilst energy efficiency financing products have been developed by the finance sector, alternative financing mechanisms including ICL's and PLF offer opportunities that address the limitations of financial products. The next section explores how the decisions to finance energy efficiency upgrades is influenced by behavioural finance.

Section 3: Behavioural Finance Implications

The decision of households to seek finance to invest in energy efficiency improvements will be impacted by a range of behavioural factors. This section examines behaviour factors that may influence decision-making in the context of financing residential energy efficiency.

Behavioural finance, which is defined *as the study of how psychological phenomena impact financial behaviour*, is increasingly regarded as core to all finance decisions as Richard Thaler argues, "what other sort of finance is there."[56] A detailed examination of all the areas of behavioural finance that can impact residential energy efficiency financing decisions is beyond the scope of this report. Areas that are identified of particular importance to this study are the impact of information and disclosure, loss aversion, discouraged borrowers and choice architecture.

Information and disclosure

Neoclassical economics traditionally assumes perfect information, arguing that all market participants have instantaneous, costless, and symmetric access to all relevant data required to make optimal decisions.[57] However in reality, information that households have access to is usually incomplete.

The flow of information to support decision making needs to be considered from the behavioural finance *theory of the paradox of choice* which argues that people are more likely to make a decision when presented with a fewer number of selections rather than a large menu of choices. Lyengar & Lepper argue that choice increases the cognitive burden of comparing attributes, leading consumers to opt-out to avoid the effort.[58]

There are a number of initiatives that focus on providing households with information to make decisions to invest in energy efficiency. One mechanism to support households to understand the value of different residential energy efficiency investments is through the Nationwide House Energy Scheme (NatHERS) Home Energy Rating for existing homes, which establishes a whole of home standard for measuring the energy efficiency of existing Australian homes.[59] NatHERS ratings consider the home's thermal performance, energy used for heating and cooling, hot water and other major appliances, as well as the impact of energy generated by solar panels and battery storage.[60] The ratings include:

- a thermal assessment, based on how much heating and cooling the home needs to stay comfortable. This considers a home's design, orientation, insulation and construction materials.
- an assessment of the energy the home uses. This is based on its major fixed appliances, thermal performance and on-site solar generation and storage.

The NatHERS Home Energy Rating seeks to establish a standardised approach to rating a dwelling, with the NatHERS Technical Note providing guidance for assessors on thermal and whole of home assessments.[61] The Home Energy Ratings Disclosure Framework sets out a national approach for providing home energy ratings to households at the point of sale or lease, which can be implemented by state and territory governments.[62] As at January 2026, the NSW and Australian governments are testing the systems outlined in the Home Energy Ratings Disclosure Framework (Disclosure Framework). Findings will inform the NSW Government about when to transition to mandatory disclosure of ratings, as well as updates to the next version of the Disclosure Framework.[63]

According to NatHERS, in 2025, 94,680 certificates were generated for new homes and major renovations. The scheme has rated over 1.7 million residential dwellings since CSIRO began recording data via the Australian Housing Data portal in 2016.[64] CSIRO has used this data to develop RapidRateTM which uses Artificial Intelligence (AI) techniques that can quickly estimate the energy efficiency of a dwelling using a relatively small number of inputs.[65] Uses of RapidRateTM include understanding bank exposure of climate risk and financial emissions reporting.[66]

An alternative to the NatHERS Home Energy Rating for existing homes has been developed by CommBank, in partnership with Home Efficiency Australia and developed by VALAI[67]. The Home Energy Assessment Tool is a free online calculator to estimate a home's energy performance.[68] The tool allows customers to instantaneously complete a personalised home energy assessment and identify how they can make their home more energy efficient. The Home Energy Efficiency Score is a numerical representation of a home's energy performance. Home Efficiency Australia use advanced property data, location insights, and smart algorithms to provide a home energy score.[69] A range of market providers including BoomPower[70], Hubble[71] and Energy Flex[72] also provide energy efficiency upgrade advice.

A behavioural finance challenge is due to the range of investments which households can make to improve the energy efficiency of their homes. RACE for 2030 has identified roof insulation, wall insulation, floor insulation, pipe lagging, draught sealing/proofing, ceiling fans, reverse cycle aircon, double glazing, efficient appliances, LED lighting, clotheslines, solar panels, hot water heat pump as areas for investment.[73] The same research also established that there is such a range of information, that homeowners can get 'information overload' and become paralysed, making no upgrade decisions.

A challenge for existing home energy ratings is also the need to factor in the increased focus on climate resilience. APRA's Insurance Climate Vulnerability Assessment has identified a growing home insurance protection gap, estimating that under different scenarios, this has the potential to widen from an estimated one in seven households uninsured today, to one in four households by 2050.[74] One proposal to address increased unaffordability of insurance, driven by climate factors including fire and flood, is to establish a National Risk & Resilience Rating System (NRRRS) that would be coordinated national approach to assessing property-level risk and resilience across all major hazards.[75] Given NatHERS is embedded into the National Construction Code (NCC) for new homes and large renovations, NRRRS would need to integrate with existing frameworks to be effective. It is noted that the Australian Government has proposed that Treasury develop and consult on options to improve clarity around the basis of home and contents premiums, and to legislate standard definitions of natural hazard terms used in property insurance contracts.[76]

In summary, the benefit of NathHERS Home Energy Rating is that it addresses the paradox of choice and the cognitive burden of comparing attributes. Instead of having to compare the attributes of many energy efficiency elements, a whole of home rating builds the trust of consumers. A key challenge will be for the Home Energy Rating to compete with the convenience of an immediate rating. This can be achieved as AI applications become increasingly sophisticated. The NatHERS Home Energy Rating will also need to adapt to address new information needs around resilience.

Discouraged Borrowers

Behavioural finance has examined the factors that lead consumers to make a decision not to pursue financing. Kon and Storey's "Theory of Discouraged Borrowers" identified three drivers that lead to self-censorship of consumers to borrow: application costs, imperfect screening and interest rate differentials.[77] Application costs include the cost of searching, as well as financial costs such as applications fees. An additional factor is the stress and time of the process. Interest rate differentials include the potential that a bank will reject a loan application with a consumer seeking more expensive but guaranteed loans. Hassle costs, such as a slow service provider or time-consuming processes, can also lead to procrastination. Richard Thaler, who developed the concept of behaviour nudges to drive positive change, refers to behavioural factors that have negative impacts as 'sludge.'[78]

A challenge with identifying whether households are discouraged borrowers is to understand whether there is underlying demand to invest in energy efficiency.

In Section 2, we discussed demand for the Cheaper Home Batteries Program, which provides an indicator of demand for battery investments. The fact that there are now 4.3 million households with rooftop PV[79] (254,664 solar PV installations in 2025 alone), and in the last six months of 2025, 183,245 residential batteries were sold across Australia,[80] is an indicator of household energy efficiency demand.

In Section 2 we also discussed the structure of energy efficiency finance products with the major banks offering consumer finance products with terms of

around 1-7 years. Evidence on incentives from the HEUF indicates that whilst over $400 million of loans have been committed only $180 million of loans had actually been provided since the program's establishment. The relative low uptake of residential energy efficiency loans through the HEUF would suggest that discouraged borrowing may be a factor.

Research commissioned by the UK's Green Finance Institute found that, whilst energy efficiency was seen as important by 83% of respondents, only 25% were likely or very likely to use finance, while just under 50% were unlikely or very unlikely.[81] Schleich, Faure and Meissner studied the relationship between access to capital and debt aversion and the adoption of retrofit measures in European Union countries, finding that debt aversion negatively affects the adoption of retrofit measures by homeowners. These studies indicate that debt-averse homeowners with poor access to capital are less likely to have adopted retrofit measures than non-debt-averse homeowners with poor access to capital.

In summary, understanding the appetite of households to take on debt to invest in energy efficiency upgrades is important for the development of the residential energy efficiency financing market.

Aversion to Loss

Another behavioural finance factor is the impact that loss has on consumer behaviour. Loss aversion is the psychological observation that the pain of losing is twice as powerful as the joy of gaining. In behavioural finance, this theory challenges the neoclassical assumption that humans are rational utility maximizers who view a $100 gain and a $100 loss with equal weight.

Originally developed by Daniel Kahneman and Amos Tversky as part of Prospect Theory, loss aversion explains why investors often make counter-intuitive decisions to avoid the 'sting' of a realized loss. Samuelson and Zeckhauser argue that people have a strong tendency to remain in their current financial state unless a significant trigger occurs.[82] Kahneman and Tversky argue that people generally regard a loss as being more costly than an equivalent gain would be beneficial. Whether a change in wealth is structured as a cost (for example, the payment of an amount) or as a loss (for example, a foregone earning) can have a significant impact on decision making.[83]

Loss aversion is important due to the uncertainty as to the cost benefit of an energy efficiency investment.[84] One way in which households can understand the benefit of energy efficiency investments is through payback periods. Payback periods for energy efficiency improvements are important for consumers as they impact on the cashflow required to service a loan. Consumer durables advertising campaigns developed in the 1920s, which focused on the idea that loans would pay for themselves, were intuitively understanding the importance of how behavioural factors influence household financial decisions.

Payback periods for residential energy efficiency investments reflect factors including underlying energy prices and the cost of technology. Payback periods will also differ according to the actual investment. Investment in energy efficient appliances in place of gas appliances, for instance, will have a shorter payback period than other investments such as draught sealing.[85]

Technology costs also vary depending on a range of factors. The International Energy Agency's Clean Energy Equipment Price Index (CEEPI), which includes a global basket of technology including solar PV, lithium-ion batteries for electric vehicles (EVs) and energy storage, has reduced by 60% since 2014 with fluctuations since 2020 due to supply chain restrictions.[86] As costs for solar and battery investments reduce, this will improve the payback period.

In summary, from an aversion to loss perspective, communicating payback periods may support household decisions. In this context, a question is how reliable information on payback periods for specific investments can be communicated to households to support decision making.

Choice Architecture

Since its publication in 2008, Richard Thaler and Cass Sunstein's Nudge has influenced behavioural economics by introducing the concept of 'choice architecture', which is how options are presented to decision-makers to influence their choices without limiting their freedom of choice. According to Thaler and Sunstein, "A nudge is any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not taxes, fines, subsidies, bans, or mandates."[87]

Recognising that the regulation of housing loans impacts the products that are offered by financial institutions, and that energy efficiency financing products are predominantly consumer rather than housing finance products, a question is whether a 'regulatory nudge' could be made to housing loans that would make it easier for households to borrow for energy efficiency through their housing loans. However, a key challenge to this is the disconnect between the design of housing loan products and the desire of households to make incremental decisions on energy efficiency investments that suit their circumstances. A household may, for instance, prefer to make investments one at a time, simply because it is easier to manage contractors who are installing equipment or making improvements, to minimise disruption to household routines.

To understand the opportunity to nudge the design of housing loan products it is important to understand how Australians invest in their homes. The latest Australian Bureau of Statistics (ABS) for the September 2025 quarter revealed $26.6 billion of new investment in residential housing, comprising of $22.9 billion new residential investment and $3.7 billion investment in alterations and additions to residential buildings.[88] For the 2024 calendar year, total residential building was around $93 billion.

In addition to investing in new homes and renovations, households invest in appliances for their homes. Industry estimates on household investment in appliances varies. IBIS World estimate that households invest $17.3 billion annually in domestic appliances[89] whilst Modor Intelligence estimates $16.6 billion (USD 11.54 billion).[90]

Australians also spend extensively on Do It Yourself (DIY) improvements, spending $19.5 billion alone in 2025 at Bunnings stores nationwide.[91] Research by Roy Morgan reveal that DIY spending at Easter in 2023 was projected at $6.4 billion for painting, gardening and minor cosmetic alterations.[92] An important insight is that investment in housing spans new construction through to renovations and regular trips to Bunnings to complete DIY projects.

Recognising that energy efficiency improvements may include small and large investments, a key question is how finance products align with the ways in which Australians invest in their homes.

Based on previous discussion in Section 1, one opportunity to nudge the design of housing loan products is to integrate payback periods into the regulation of bank residential lending. Serviceability ratios and loan to valuation ratios (LVR), are of relevance. Regulators use serviceability tests to determine whether a borrower can afford the ongoing servicing and repayment costs of the loan for which they have applied. APRA considers a borrower's living expenses to be a key component of a serviceability assessment as, "expenses materially affect the ability of a residential mortgage borrower to meet payments due on a loan". APRA indicates that banks typically use the Household Expenditure Measure (HEM) in loan calculators to estimate a borrower's living expenses. The use of HEM in bank credit assessments doesn't take into account that an investment in energy efficiency that has a short payback period may improve loan serviceability by reducing energy bills.

Loan to valuation ratio (LVR) is a mechanism to assess the risk of a loan to a bank. A higher LVR is an indicator that, in the event of default, the bank is exposed to a higher risk that its housing loan would not be repaid. To the extent that investments in residential energy efficiency increase the value of a property, this may improve a loan's LVR.[93]

In summary, from a choice architecture perspective, by integrating energy efficiency investments into LVRs and serviceability assessments, this may provide the ability to evolve the regulation of housing loans in a way that supports borrowers to make energy efficiency

improvements over the lifetime of their loans. Section 2 considered the evolution of housing loan repayment periods, noting that that housing loans have continued to evolve over recent decades. The incorporation of offset accounts, where a borrower can reduce their interest on loan through a separate savings account, is an example of how housing loans have evolved to incorporate more than one financial product.

Reflections

The decisions by households to seek finance for energy efficiency upgrades are influenced by behaviour finance. The paradox of choice is that households may be supplied with a range of information on energy efficiency upgrades but may suffer from cognitive overload which results in deferred decisions. Households may be discouraged to borrow due to factors including the friction of applying for loans. There is evidence that there may be a preference not to borrow for energy efficiency upgrades.

Households may also have an aversion to loss when it comes to making energy efficiency financing decisions. Information on payback periods may be important to provide households with comfort that decisions to invest in energy efficiency upgrades will leave them better off.

Choice architecture provides an opportunity to incorporate energy efficiency into the design of housing loans that support the borrower's interest in a way that is consistent with maintaining the quality of the regulation of housing loans, which is important to align with Basel III capital frameworks, but which also aligns with household interests. In the next section we explore the equity implications of energy efficiency financing.

Section 4: Equity Implications of Energy Efficiency Financing

This section examines the extent to which energy efficiency financing is pro-poor. The term 'pro-poor' is commonly used in economic growth discussions as a contrast to 'trickle down' economic theories which viewed that low-income households would benefit from wealth generation of higher-income households. Pro-poor growth requires a strategy that is deliberately biased in favour of the poor so that the poor benefit proportionally more than the rich.[94]

C.K. Prahalad and Allen Hammond outlined the concept of poverty premiums in a 2002 Harvard Business Review (HBR) article that described the benefits multinationals could gain by serving poor consumers in emerging markets.[95] The linkage of poverty premiums to net zero transition was raised in 2023 with *a net zero poverty premium defined as occurring if a household was not able to make energy efficiency investments to their homes that help to reduce their energy bills*[96].

From a financial perspective households that have a lower income, or lower assets than other households, are either regarded as having higher finance risks, or do not meet responsible lending criteria. This means that low-income households may either find it more difficult to access finance for energy efficiency improvements, or when they are able to access finance are only able to do so on terms and conditions that are not as favourable as higher income quartiles. As it currently stands, a net zero poverty premium can therefore be said to exist for residential energy efficiency financing.

There is a considerable debate amongst economists on the causal linkages between financial system development and economic growth[97] that goes back to Joseph Schumpeter in 1911[98] who argued that the services provided by financial intermediaries mobilizing savings, evaluating projects, managing risk, monitoring managers, and facilitating transactions stimulate technological innovation and economic development.

Over the last thirty years, the links between financial development and poverty have been examined by Beck, Demirguc-Kunt and Levine[99]. In 1993 Robert King and Ross Levine[100] provided evidence that economic growth from 1960 to 1989 was linked to financial development with financial development preceding growth. In 2003, World Bank economist Patrick Honohan argued that deep financial systems appear to be associated with lower poverty.[101] More recently in 2017, Johan Rewilak drew on a sample of developing countries from 2004–2015 to find that financial development may be poverty reducing.[102]

According to the National Energy Equity Framework developed by the Energy and Climate Change Ministerial Council, "Low-income households are often disproportionately impacted by energy inequity, spending proportionately more on energy, having higher energy costs resulting from living in less energy efficient homes that cost more to heat and cool, and in some circumstances being unable to access energy efficient appliances and solar panels to reduce energy costs".[103] The framework outlines the impact of energy hardship including negative consequences such as decline in mental or physical health, thermal discomfort or economic distress. Energy equity is defined as existing "where all consumers can fairly benefit from the energy system and access and use energy services to live a comfortable, dignified and healthy life".[104]

In the context of the development of energy efficiency financing products, a key question is the extent to which finance is available to all households regardless of income or assets. Three groups are examined; homeowners with mortgages, homeowners without mortgages and residential investors.

Homeowners with Mortgages

For homeowners with mortgages, two risk factors that are monitored by regulators are loan arrears and loan prepayments. As at March 2026, RBA data revealed that the lowest income quartile (borrowers with gross household income of $118,000), are more likely than other income quartiles to have home loans that are in excess of 90 days in arrears. Whilst the lowest income quartile may have the highest loan arrears, the quality of loan is healthy with loans in arrears in excess of 90 days less than 0.5% of all loans. The lowest quartile of loans also has, on average, the least pre-payment of loans, either in offset accounts or pre-payment, compared to other quartiles. On average, the lowest income quartile has over 10 months of pre-payment, whilst the highest quartile has over 20 months of pre-payment. Even though the lowest income quartile has higher risk than other quartiles, loans are still of high quality.[105] An implication of low-income quartiles having higher risk factors is that because energy efficiency financing is based on risk assessment, this quartile is likely to face higher interest rates overall than other income quartiles.

Homeowners Without a Mortgage

It is estimated that there are currently 3.3 million active owner-occupied mortgages and 6.2 million owner-occupied houses in Australia.[106] Owner-occupied homeowners without a mortgage are more likely to be older, with a large proportion over the age of 70. It is estimated that over 80% of over 70-year-olds are homeowners.[107] The Australian Council of Social Service (ACOSS) has identified that people on low incomes spend more than 8.8% of their income on energy.[108] An implication for households that own their own home, but no longer have paid employment, is that to be able to access finance they must be able to satisfy responsible lending obligations. This group will be able to access finance if, for instance, they have income from sources including superannuation. Homeowners that do not have alternative sources of income are likely to face difficulties accessing energy efficiency financing products because of the inability to satisfy responsible lending obligations.

Residential Investors

It is estimated that 31% (2.9 million households) are renters with 26% (2.4 million households) renting from private landlords.[109] The access of renters to energy equity as defined by the National Energy Equity Framework is dependent to the extent to which residential investors make investments in their properties. Residential investors may receive taxation concessions for investments made to improve their properties. State governments may also introduce regulatory requirements that compel residential investors to upgrade houses that are rented. An example is the Victorian Government's minimum energy efficiency standards for rental homes that require residential investors to undertake a suite of energy performance measures at the point of a new lease or when an existing lease rolls into a periodic (month-to-month) arrangement.[110] The question we are concerned with is whether residential investors are able to access finance to support investments, whether they are incentivised through the taxation system or required through regulatory arrangements. We have discussed that residential investors make up 31% of ADI housing finance. Financial institutions such as Westpac and CommBank offer their energy efficiency finance products for investor loans. Residential investors therefore do not face impediments to accessing finance that other groups do. The key issue is therefore not about the access to finance, but about whether the regulatory environment drives residential investors to upgrade their rental properties.

Reflections

The market for residential energy efficiency financing has developed in a way that is not pro-poor, that is, it is not structured in favour of low-income households. There are rational arguments why there has been a need to support the development of energy efficiency upgrade financing products that can support Australian’s net zero transition. With market foundations now established there is a need to consider how the Australian Government directs financial incentives to low-income households.

Section 5: Policy Review

This final section analyses the policy implications of developing a residential energy efficiency financing upgrade market to support investment that is efficient, resilient and fair to all[111].

To identify reforms to improve the current status quo, there is a need to identify what the ideal state looks like from a consumer perspective.

Based on the report's discussion on the structure of Australia's financial system, and the current state of the residential energy efficiency financing market, an ideal state of energy efficiency financing is proposed as one where the financial system collectively enables householders, no matter what their financial circumstances to access finance to invest in energy efficiency improvements that reflect their needs. A residential energy efficiency finance market should align with the principles of Australia's financial system which focuses on efficiency, resilience and fairness. The following principles of an energy efficiency finance market are identified from the perspective of householders:

> **Efficiency**: the system allocates Australia's scarce financial and other resources for the greatest possible benefit to our economy, supporting growth, productivity and prosperity. From the perspective of households, residential energy efficiency upgrade financing should be easy to access with finance directed to where energy efficiency improvements have the biggest impact in terms of reducing emissions at the lowest cost.

> **Resilience**: the financial system adjusts to changing circumstances while continuing to provide its core economic functions, even during severe shocks. From the perspective of households, resilience means recognising the impact of residential energy efficiency upgrade financing on household cost of living by reducing energy bills. A reduction in energy bills improves a householder's costs and therefore improves their ability to service loans.

> **Fairness**: fair treatment occurs when participants act with integrity, honesty, transparency, and non-discrimination. From the perspective of householders, the residential energy efficiency upgrade financing market should not only operate with integrity but facilitate outcomes for all Australians to invest in energy efficiency that is not dependent on personal wealth to access finance.

A residential energy efficiency financing market that meets these principles requires considering finance from the perspective of a financial system. In a market economy where a financial system is efficient, resilient and fair, the role of government will vary according to the outcomes that are sought. The role that government can play can include:

- Providing financial incentives through the programs such as the HEUF to stimulate financial institutions to develop and market energy financing products.
- Provide regulatory oversight to improve the accountability of financial institutions for the products that are offered to households.
- Intervene to provide access to finance in areas where market mechanisms are not resulting in a flow of finance to specific groups.

State of Play of Energy Efficiency Financing Market

The report has considered ways in which Australia's financial system has innovated to provide finance to support households to invest in energy efficiency upgrades to their homes. Analysis of the residential energy efficiency finance products provided by the major banks demonstrates that households do have a range of energy efficiency finance products to select from. The common features of products are:

> **Individual pricing the risk of loans:** A review of energy efficiency financing products by major banks (Section 1, Table 1) revealed a range of comparison interest rates loan from 8.18% to 22.29% p.a. The large range of comparison interest rates is an indicator that banks are not providing a standard interest rate but are individually pricing the risk of a loan according to their internal risk assessment frameworks. The implication of risk pricing is that households that will be considered higher risk will have lower income levels and lower levels of assets.

Interest rates generally higher than standard variable housing loan rate: The rates of interest for energy efficiency financing products reflect the standard terms for personal loans which are priced at higher interest rates than housing loans.

Loan repayments shorter than housing loan repayment terms: The loan repayment terms offered for energy efficiency financing products range from one to seven years which reflects the standard repayment term for personal loans that are shorter than the repayment terms for housing loans (25-30 years). Longer tenor for loans supports serviceability and is particularly important for investment in energy efficiency upgrades that have longer payback periods.

The common features of residential energy efficiency finance products offered by major banks indicate that these loans are characterised as consumer finance products. Examining the evolution of housing and consumer finance products reveals that these products were developed for very different purposes.

- Housing finance products have evolved over 100 years from products with short term (3-5 year) repayment periods followed by requirements to pay the balance of the loan. Government interventions to address market failures led to the establishment of standard 25-30 year repayment terms that are common today.
- By contrast, consumer finance products developed out of the mass manufacturing of consumer household goods including refrigeration and washing machines. Loan repayments for consumer finance products are commonly short term, with higher interest rates that reflect that loans are not secured against a housing asset.

An anomaly with the characterisation of residential energy efficiency financing products as consumer finance products is that investments are permanent additions to the house. Unlike consumer durables, if a property is sold, then the energy efficiency improvements stay with the property. An example is investment in solar panels which is commonly added as a search term with property sales companies such as REA Group (realestate.com.au). According to research supported by CBA the average value uplift for homes with solar power systems is 2.7%.[112]

Whilst there is evidence that financial institutions have innovated to provide energy efficiency financing products to households, there is a lack of information on the demand for products. There is an opportunity for financial institutions to provide verifiable, timely and understandable reporting on their energy efficiency financing loans under AASB S2 (Climate Related Disclosures).[113] Legislated in September 2024, AASB S2 uses International Financial Reporting Standards (IFRS) accounting standards developed by the IFRS International Sustainability Standards Board (ISSB) as a baseline. Aligned with AASB S2, financial institutions can supply information on energy efficiency financing loans including the tenor of loans, interest rates, distribution of income quartiles and size of loans which would support investors and policy makers to identify the state of Australia's energy efficiency financing market. Disclosures can be incorporated into a financial institution's transition plan. The preparation and publication of transition plans is not mandated under the climate-related financial disclosure regime however it is a requirement to disclose information about any transition plans the reporting entity has prepared.[114] The disclosure of energy efficiency financing product features and level of demand would support policy makers to consider regulatory changes whilst supporting financial institutions to innovate.

RECOMMENDATION

It is recommended that financial institutions provide verifiable and timely reporting on their energy efficiency financing loans as part of reporting aligned to AASB S2 (Climate Related Disclosures). Financial institutions reporting would include the number of loans, the tenor of loans, interest rates, distribution of income quartiles and average size of loans to support policy makers to identify the state of the energy efficiency financing market.

The role of financial system regulation

The report has considered the role that financial regulation plays in shaping Australia's financial system. The focus of financial system regulators on efficiency, resilience and fairness, together with the Basel III international banking capital framework, means that loans for housing must align to established regulatory principles. The reality is that, under existing regulatory arrangements, this limits the extent to which a bank can universally adapt the features of loans for housing. An implication of Australia's financial regulatory structure is that, if a household wishes to increase their housing loan by a small amount to finance energy efficiency improvements, they would need to reapply for their loan whilst financial institutions have incentives to direct customers to consumer finance products with higher interest rates and shorter repayment terms than housing loans.

The regulation of consumer lending is of particular relevance to energy efficiency financing. Responsible lending obligations are set out in ASIC's regulatory guidance RG 209. This regulatory guidance has recently been updated to exclude HELP debt. An impact of this update is that HELP debt commitments do not negatively impact individual credit scores. The preparedness of policy makers to update credit regulations for both BNPL and HELP recognises that the credit products are not static but constantly evolve. There is an opportunity to review RG 209 to exclude ICLs and PLF arrangements from responsible lending obligations. This has the potential to support the development of ICL and PLF financing arrangements that offer households an alternative mechanism to finance energy efficiency improvements in their homes, noting that changes to regulatory guidance for HELP do not change broader responsible lending obligations.

RECOMMENDATION

It is recommended that ASIC review responsible lending regulatory guidance (RG 209) to consider removal of Income Contingent Loans and Property Linked Finance in a similar way to the removal of Higher Education Loan Program (HELP) debts to facilitate access to finance for households that face challenges accessing traditional lending.

The impact of behaviour factors

The report briefly examines how the decision of households to seek finance to invest in energy efficiency improvements can be impacted by a range of behavioural factors. Four behavioural factors are considered; information and disclosure, discouraged borrowers, aversion to loss and choice architecture.

Neoclassical economics traditionally assumes perfect information. The challenge for residential energy efficiency investments is the number of choices with which households are presented. The paradox of choice is that people are more likely to make a decision when presented with a fewer number of selections rather than a large menu of choices.

Initiatives such as NatHERS Home Energy Rating for existing homes have been established to support household decision making. Increasingly, free AI tools are becoming available to guide home energy efficiency investments. As these rapidly develop, a key question is whether governments will mandate home energy ratings at the point of sale of a property. If home energy ratings are not mandated, a key behavioural question is whether consumers will demand ratings, noting that Real Estate .com and Domain have worked with the PropTech Association to develop an Australian-first, industry-led, data standard for describing energy efficiency features in residential properties. This will provide comprehensive property information, insights and experiences for real estate customers and consumers at key decision-making moments.[115]

Discouraged borrowers and loss aversion are behavioural factors that influence decision making. The process of a household needing to reapply to increase their housing loan for a small amount from a behaviour finance perspective may lead to discouraged borrowers. An understanding of loss aversion is important in the way information is presented on the costs of energy efficiency improvements. Reliable information on payback periods for specific investments may catalyse households to make investments. An understanding of behavioural finance can also support a recalibration of the HEUF. The HEUF has principally focused on providing an interest rate discount to consumer finance products which have shorter repayment terms than housing loans. The relative low

uptake of residential energy efficiency loans through the HEUF would suggest that discouraged borrowing may be a factor.

The report considers the importance of choice architecture in influencing household decisions. The way in which options are presented to decision-makers will influence their choices without limiting their freedom of choice. A key challenge is the disconnect between the design of residential energy efficiency financing products and the desire of households to make incremental decisions to invest in their homes. Investment in housing does not just occur at the time of a purchase of a home. Data on DIY investment by households reveals that Australians are constantly investing in their homes. A key question is whether energy efficiency financing products that are currently offered by financial institutions reflect the needs of households or the interests of the financial system. Another question is whether a choice architecture 'regulatory nudge' could be made to housing loans that would make it easier for households to borrow for energy efficiency through their housing loans rather than apply for energy efficiency upgrade loans each time they wish to make an investment.

RECOMMENDATION

It is recommended that the Australian Government review the market for residential energy efficiency financing focusing on addressing behaviour finance challenges, including aversion to loss, discouraged borrowers and choice architecture. A review should consider alternative financing arrangements including income contingent loans, property linked finance and buy-now-pay-later (BNPL) finance that can support households to improve the efficiency and climate resilience of their homes.

It is recommended that a centralised and reliable source of information on payback periods for energy efficiency investments should be developed. This should be delivered through a trusted entity such as an Energy Efficiency Hub. The presentation of information that identifies the financial savings that households can make from investing in energy efficiency improvements addresses behavioural factors including loss aversion and support households to invest in energy efficiency upgrades.

Social Equity Implications

The report has considered the equity implications of energy efficiency financing. Evidence suggests that the lowest income quartile of housing loans have higher risk premiums than other quartiles. The quality of loan portfolios for the lowest income quartile of home borrowers is however strong. The fact that the lowest income quartile does have higher risk would suggest that residential energy efficiency financing that is based on an assessment of risk would lead to this quartile paying more for credit. This would act as disincentive to borrow and lead to energy inequity and constrain participation in Australia's energy transition.

The report identifies that homeowners that do not have sources of income to access finance under responsible lending obligations are likely to face difficulties accessing residential energy efficiency financing products. Overall, the market for residential energy efficiency finance does not support low-income Australians to make energy efficiency improvements:

- Households that have lower income and lower levels of home ownership through loan to valuation ratios

are regarded as having higher finance risks and pay higher interest rates for energy efficiency loans that are assed on risk.

- Households that do not have sufficient income and therefore do not meet responsible lending criteria may not be able to borrow through existing market products.
- The extent to which rental properties with the lowest energy ratings may have lower rents means that low-income renters whose landlord does not value energy efficiency investments face higher living costs.

As it currently stands, a net zero poverty premium can therefore be said to exist for low-income households accessing residential energy efficiency financing.

> **RECOMMENDATION**
>
> **It is recommended that to address the net zero poverty premium for low-income earners accessing energy efficiency financing that the Australian Government review the HEUF with the objective of directing financial incentives to low-income households.**

Conclusion and Recommendations

The establishment of a residential energy efficiency financing market that facilitates access to finance for all households requires an understanding of how Australia's financial system functions. The good news is that there is evidence of financial product innovation. Government incentives are also supporting a flow of finance for energy efficiency upgrade investment. The challenge is that financial products are predominantly consumer finance products that have higher interest rates and short terms of repayment than housing loans. The residential energy financing market is also not structured in a way that opens up a flow of finance for all Australians.

To establish an Australian residential energy efficiency upgrade financing market that is efficient, delivers resilience for households and is fair to all, we propose the following recommendations:

It is recommended that financial institutions provide verifiable and timely reporting on their energy efficiency financing loans as part of reporting aligned to AASB S2 (Climate Related Disclosures). Financial institutions reporting would include the number of loans, the tenor of loans, interest rates, distribution of income quartiles and average size of loans to support policy makers to identify the state of the energy efficiency financing market.

It is recommended that ASIC review responsible lending regulatory guidance (RG 209) to consider removal of Income Contingent Loans and Property Linked Finance in a similar way to the removal of Higher Education Loan Program (HELP) debts to facilitate access to finance for households that face challenges accessing traditional lending.

It is recommended that the Australian Government review the market for residential energy efficiency financing focusing on addressing behaviour finance challenges, including aversion to loss, discouraged borrowers and choice architecture. A review should consider alternative financing arrangements including income contingent loans, property linked finance and buy-now-pay-later (BNPL) finance that can support households to improve the efficiency and climate resilience of their homes.

It is recommended that a centralised and reliable source of information on payback periods for energy efficiency investments should be developed. This should be delivered through a trusted entity such as an Energy Efficiency Hub. The presentation of information that identifies the financial savings that households can make from investing in energy efficiency improvements addresses behavioural factors including loss aversion and support households to invest in energy efficiency upgrades.

It is recommended that to address the net zero poverty premium for low-income earners accessing energy efficiency financing that the Australian Government review the HEUF with the objective of directing financial incentives to low-income households.

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