Energy Poverty Zero

Warranty fund for collective buy in scheme

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Introduction

The EU's Renovation Wave seeks to transform millions of buildings by 2030, cutting emissions, reducing energy bills, and improving living conditions. Collective retrofit, where groups of private homeowners sometimes working alongside social housing organisations coordinate retrofit works and financing, has proven to be one of the most effective ways to deliver deep energy upgrades at scale. By pooling demand, these groups can negotiate better prices, coordinate works efficiently and achieve more ambitious energy performance outcomes.

However, the success of these collective projects depends on the financial reliability of every participant. Retrofit contracts and the price advantages they secure are negotiated for the group as a whole; if one or more households defaults on payments, withdraws, or transfers ownership without assuming the repayment obligation, the entire project can be placed at risk. Lenders may reconsider their involvement, contractors may reprice or delay works, and the trust within the group can be undermined.

For mixed-income groups, this challenge is even more pronounced. Lenders frequently set loan conditions according to the highest perceived risk within the group, which can result in less favourable terms for all or exclusion of households with weaker credit profiles. Without safeguards, the benefits of collective retrofit remain out of reach for those who could gain from them most, including low-income households vulnerable to energy poverty.

A warranty fund directly addresses this fragility. By covering payment defaults or bridging financing gaps when participants face unforeseen difficulties, it allows projects to proceed without penalising other members or undermining lender confidence. Properly designed, it can make collective retrofit more inclusive, more stable, and more attractive to both homeowners and financiers.

This report begins by examining the specific risks that can destabilise collective retrofit financing. It then maps ten relevant case studies from across Europe that use guarantees, revolving funds, blended finance, or mutualised reserves to address similar challenges. Drawing on these lessons, it proposes a set of policy recommendations for designing a warranty fund that can be adapted to different national and local contexts. The aim is to provide a practical framework that enables collective retrofit to reach low-income households, without compromising on project quality, financial viability, or delivery speed.

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I. Risk overview: private homeowners and financing collective retrofit

Collective retrofit projects, where private homeowners sometimes in partnership with social housing organisations, join forces to procure renovation works and financing, hold considerable promise for achieving the EU's building decarbonisation goals. By aggregating demand, these groups can secure lower unit costs, ensure more ambitious scopes of work, and negotiate better contractual terms with suppliers.

However, this very interdependence creates a specific vulnerability: the **financial stability of the collective depends on every participant fulfilling their payment obligations**. If one or more households withdraws or defaults, the consequences can cascade quickly, jeopardising procurement prices, delaying works, and undermining lender confidence.

A **warranty or guarantee fund** is designed precisely to address this vulnerability, by absorbing or covering the financial shock when a participant cannot pay, ensuring that the project can continue without imposing unplanned burdens on the remaining members. To understand the value of such a mechanism, it is essential to identify the specific risks it can mitigate.

A. Cashflow and payment default risk

This is the most direct and significant threat in a collective retrofit. Even after securing financing, individual households can experience unforeseen changes such as job loss, illness, unexpected expenses, that impair their ability to make scheduled payments.

In the absence of a protective mechanism, the shortfall must either be absorbed by the other participants or covered by the project manager, both of which can erode trust and destabilise the initiative.

A warranty fund addresses this by **temporarily covering missed payments** or **guaranteeing the lender's exposure**, allowing the collective contract to remain intact while the issue is resolved.

B. Heterogeneous creditworthiness risk

In many collective retrofits, particularly in mixed-income neighbourhoods or when private owners work alongside social housing bodies, the participating households have **varying**

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credit profiles. Some may be considered higher risk by commercial lenders due to income level, employment status, or existing debt.

This uneven risk profile can make lenders reluctant to issue a group loan or can result in punitive interest rates that undermine the financial viability of the project.

A warranty fund can help by **backstopping the higher-risk share of the loan**, thereby increasing lender confidence and enabling all households to participate on equal terms.

C. Exit and transfer risk

Collective retrofits often span multiple years from planning to final repayment. If a homeowner sells their property during this period, the incoming buyer may refuse to assume the repayment obligation, especially if it is not legally tied to the property.

This can leave a financing gap that jeopardises the group's repayment schedule.

A warranty fund can **bridge the repayment gap** until the obligation is transferred to the new owner, or until the property is sold under terms that honour the collective financing arrangement.

D. Administrative and compliance risk

Accessing public subsidies, tax credits, or concessional loans typically requires strict compliance with administrative rules. Delays or errors, for example, incomplete paperwork, missed deadlines, or changing eligibility criteria, can temporarily halt disbursements.

For collective projects, this can create immediate cashflow stress if works are ongoing but expected funds are delayed.

While a warranty fund cannot solve the underlying compliance problem, it can **provide short-term liquidity coverage** to ensure contractors are paid and work continues until the funding issue is resolved.

E. Cost overrun and gap risk

Although primarily aimed at payment default, a well-designed warranty fund could be structured to cover certain unforeseen financing gaps, for example, if a contractor becomes insolvent and re-procurement increases costs, or if material price inflation pushes the project beyond the agreed budget.

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In such cases, the fund would not replace proper contingency planning but could act as a **safety net** to prevent abandonment of the project.

F. Performance shortfall risk

Even when works are completed on time and within budget, they may fail to deliver the expected energy savings or comfort improvements. This can result from poor workmanship, incorrect installation, inadequate commissioning, or design flaws.

For homeowners, underperformance can reduce the financial return on investment, making loan repayments harder to sustain and eroding trust in collective retrofit models.

A warranty fund could incorporate a **performance guarantee component**, releasing part of the guarantee or covering additional remedial works if post-renovation performance falls short of contractual targets. Linking the fund to independent performance verification would further protect homeowners and maintain lender confidence.

G. Why are these risks critical to address?

The EU's Renovation Wave strategy depends on accelerating deep retrofits in the private housing sector, where uptake has historically been slow. Collective approaches, in which owners retrofit together, can deliver both speed and scale. But **without mechanisms to manage financial shocks within the group**, these projects remain fragile.

A warranty or guarantee fund can:

- **Stabilise financing structures** by ensuring that one member's inability to pay does not derail the entire project.
- **Increase lender confidence** in collective loans, making finance more accessible and affordable.
- **Encourage participation** by providing reassurance to households wary of relying on their neighbours' financial stability.

The following case studies illustrate how similar risks have been addressed in Europe and beyond, using tools ranging from **state-backed guarantees** to **mutualised reserve funds** and **blended finance mechanisms** that incorporate risk-sharing elements. Each offers lessons for designing a warranty fund tailored to collective retrofit buy-in.

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Loan guarantees reduce the risk for private lenders by providing a public or mutual backstop in case of default. When applied to collective retrofit projects, they enable groups of homeowners to access affordable financing, even when some participants pose higher credit risks.

II. Mapping case studies to key risks in collective retrofit financing

This section maps the most relevant case studies to the **specific risks** that a warranty fund for collective retrofit could address. By structuring the examples according to the financial vulnerabilities they mitigate, from **cashflow and payment default** to **exit risk** and **administrative bottlenecks**, the analysis makes clear how each mechanism functions as a targeted solution.

This mapping provides a strategic overview, allowing policymakers and practitioners to identify which instruments are most relevant to their context.

The **full detailed description of each case study**, including objectives, operational structure, funding model, and lessons for collective retrofit buy-in, can be found in the following sections of this report.

A. Risk 1: Cashflow and payment default risk

Mechanisms designed to cover missed payments or protect lenders from borrower default in collective projects.

#	CASE STUDY	MECHANISM TYPE	HOW IT ADDRESSES THE RISK
1	**KredEx (Estonia)**	State-backed guarantee + grants + loans	Guarantees up to 75% of loan value with no collateral, ensuring lenders are repaid even if a household defaults.
2	**Éco-Prêt à Taux Zéro (France)**	Zero-interest loans with state guarantee	Partial state guarantee for banks reduces risk of lending to groups, ensuring works can proceed

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			even if some members have weaker credit.
3	**Energy Efficiency and Renewable Sources Fund – EERSF (Bulgaria)**	Loan guarantees + technical assistance	Provides partial guarantees to banks for lending to homeowner associations, covering defaults.
4	**Ireland – Home Energy Upgrade Loan Scheme (HEULS)**	Low-interest unsecured loans with European Investment Bank (EIB) and European Investment Fund (EIF) guarantee	Guarantee reduces lender exposure and allows early drawdown of funds, ensuring cash is available to keep works on track.
5	**Riga Revolving Fund (Latvia)**	Soft loans repaid via utility bills	Links repayment to the property's utility bills, ensuring continuity even if occupants default.

B. Risk 2: Heterogeneous creditworthiness risk

Mechanisms that enable groups with varied credit profiles to access affordable finance collectively.

#	CASE STUDY	MECHANISM TYPE	HOW IT ADDRESSES THE RISK
1	**KredEx (Estonia)**	State-backed guarantee + grants + loans	Accepts higher-risk associations (rural, low-value buildings) via state guarantee, enabling them to access standard loan terms.
2	**Éco-Prêt à Taux Zéro (France)**	Zero-interest loans with state guarantee	Allows co-owner associations to borrow collectively, meaning individual owners' weaker credit

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			profiles do not prevent project financing.
4	**Ireland – HEULS**	Low-interest unsecured loans with EIF/EIB guarantee	EIF/EIB guarantee allows lenders to finance borrowers with diverse credit profiles, particularly important in mixed-income groups.
7	**Habicoop (France)**	Cooperative housing with internal solidarity	Group mortgage structure shields the collective from one member's weak credit profile; the group collectively manages repayment.
9	**Emerging Community Land Trusts /Cooperative Funds (Belgium, Netherlands, UK)**	Mutual guarantee reserves	Reserve funds cover payment gaps when individual members cannot pay, enabling inclusive participation.

C. Risk 3: Exit and transfer risk

Mechanisms that ensure repayment obligations survive property sales or transfers.

#	CASE STUDY	MECHANISM TYPE	HOW IT ADDRESSES THE RISK
5	**Riga Revolving Fund (Latvia)**	Soft loans[1] attached to the property	Debt obligation transfers automatically to new owner via utility bill mechanism.
6	**Picardie Pass Rénovation (France)**	Third-party financing with property-linked repayment	Loan is attached to the property, not the individual, so repayment continues under new ownership.

[1] A soft loan within the context of the Riga Revolving Fund refers to a municipally-backed, low-interest loan with a long repayment term, that can be repaid via the energy savings generated by the renovation.

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7	**Habicoop (France)**	Cooperative ownership	Ownership shares carry obligations; no individual can sell without settling their share or transferring the obligation internally.

D. Risk 4: Administrative and compliance risk

Mechanisms that can provide short-term liquidity while subsidy or loan disbursements are delayed.

#	CASE STUDY	MECHANISM TYPE	HOW IT ADDRESSES THE RISK
1	**KredEx (Estonia)**	State-backed guarantee + grants + loans	Guarantee coverage allows lenders to maintain payment schedules even if grant disbursement is delayed.
3	**EERSF (Bulgaria)**	Loan guarantees + technical support	Helps associations navigate administrative requirements and sustain financing during delays.
6	**Picardie Pass Rénovation (France)**	Public intermediary manages compliance	Intermediary ensures that subsidy paperwork and loan requirements are met, reducing risk of disbursement delays.
4	**Ireland – HEULS**	Integrated grant-loan delivery via One Stop Shops	Minimises administrative bottlenecks that could delay project cash flow.

E. Risk 5: Cost overrun and gap risk

Mechanisms that could, if designed with broader coverage, step in to cover unforeseen financing gaps.

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#	CASE STUDY	MECHANISM TYPE	HOW IT ADDRESSES THE RISK
8	**Milan Transition Fund 2026 (Italy)**	Blended finance (tax credits + public/private capital)	Aggregated capital pool could incorporate a guarantee reserve to cover unexpected cost gaps.
10	**KfW EnerPHit Programme (Germany)**	Blended public loans + grants	Structure allows for additional grant tranches to be triggered for higher performance, potentially offsetting overruns.
1	**KredEx (Estonia)**	State-backed guarantee + grants + loans	Grant + guarantee structure can be adjusted to cover certain unexpected costs in high-risk cases.

F. Risk 6: Performance shortfall risk

Mechanisms that link financing or guarantees to verified post-renovation performance, ensuring quality delivery and protecting repayment capacity.

#	CASE STUDY	MECHANISM TYPE	HOW IT ADDRESSES THE RISK
10	**KfW EnerPHit Programme (Germany)**	Low-interest loans + performance-based grants	Grants are conditional on achieving verified energy performance post-renovation, incentivising quality design and execution and reducing the risk of underperformance.

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III. Case Studies

A. Case Study #1: Estonia – KredEx Loan and Guarantee Scheme

1. What is it? Mechanism overview

The **KredEx Loan and Guarantee Scheme** is a **state-owned financial instrument** established in 2001 to support the renovation of multi-family apartment buildings in Estonia. It combines **state-backed loan guarantees** of up to 75% of the loan amount with **long-term concessional loans** and **non-repayable grants**, enabling **apartment associations** (non-profit legal entities formed by co-owners), to carry out **deep energy renovations**.

The mechanism is designed to address situations where collective borrowing is required but **individual households' financial situations vary**.

By guaranteeing a large share of the loan, KredEx reduces lender risk and ensures that **one member's inability to pay does not jeopardise the whole project**.

2. Why was it created? Objectives, impacts and benefits

Objectives:

- Accelerate the pace and depth of renovations in Estonia's ageing multi-apartment housing stock.
- Bridge the **credit access gap** for apartment associations in rural areas, low-value markets, or with higher perceived risk due to member debt levels.
- Enable long-term energy performance improvements in line with Estonia's climate and EU Renovation Wave targets.

Impacts and benefits:

- **Financial inclusion**: Associations that would be refused loans by commercial banks, due to high debtor ratios or location, can proceed with renovations.
- **Energy savings**: Renovated buildings often achieve **30–50% energy savings**, improving both environmental performance and occupant comfort.

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- **Cost efficiency at scale**: By securing financing for the entire building, KredEx allows associations to procure works collectively, reducing per-unit costs and ensuring consistent technical standards.

- **Confidence for lenders**: Banks are willing to issue longer-term, lower-interest loans because of the **State-backed guarantee**.

3. How does it work? Enablers, structure and funding

Enablers:

- The **Apartment Associations Act** allows co-owners to form a legal entity capable of entering into contracts and taking out loans as a single borrower.

- KredEx's status as a **State-owned foundation** underpins trust and legitimacy for both lenders and borrowers.

- Alignment with national grant programmes ensures that loan financing can be blended with subsidies.

Structure and funding:

- **Guarantee coverage**: Up to **75% of the loan value**, with no collateral required. Guarantee fee between 1.2% and 1.7%.

- **Loan conditions**: Long-term repayment periods, issued through partner banks. Interest rates vary but are typically below market rate due to the guarantee.

- **Grants**: Cover 30–50% of eligible renovation costs depending on the region and depth of works.

- **Eligible costs**: Comprehensive: including façade, roof, heating, ventilation, renewable energy installations, balconies, lifts, and "soft costs" such as audits, design documentation, and owner supervision.

- **Funding sources**: National budget allocations, European Structural and Investment Funds (notably the ERDF), and loan repayments, ensuring revolving capacity.

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4. Which risks does it address ?

- **Risk 1 – Cashflow and payment default**: The State guarantee ensures lenders are repaid even if some owners fail to meet their share of the repayments, stabilising the collective's financing.

- **Risk 2 – Heterogeneous creditworthiness**: The association's collective borrowing authority means individual members' credit scores do not block project financing.

- **Risk 4 – Administrative and compliance**: KredEx's role includes ensuring grant and loan disbursement align, reducing cashflow problems due to subsidy delays.

- **Risk 5 – Cost overrun/gap** *(conditional)*: The blending of grants and loans can be flexibly adjusted to bridge certain unforeseen costs.

5. Limitations and challenges

- **Capital intensity**: The revolving nature of the fund requires continuous replenishment to maintain availability, especially in periods of high demand.

- **Organisational capacity**: Success depends heavily on the apartment association's ability to mobilise members, make collective decisions, and manage contractors.

- **Quality assurance**: KredEx does not directly oversee construction quality — the onus remains on associations to secure competent project management.

6. Lessons for collective retrofit buy-in

- **Legal authority to borrow collectively** is foundational, without it, a warranty fund cannot operate effectively.

- **State-backed guarantees** materially reduce lender hesitation, especially in high-risk markets.

- **Combining grants and guarantees** creates financial viability for deeper renovations, extending inclusion to lower-income and rural households.

- **Property-based borrowing** through a collective legal entity prevents disruption from individual ownership changes.

- **Broad eligibility for both "hard" and "soft" costs** ensures associations can cover all aspects of project delivery, from audits to supervision.

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- KredEx official site – Apartment building renovation loan and guarantee programme: https://kredex.ee/en
- SHAPE Project – KredEx financial instrument profile: https://shape-affordablehousing.eu
- Citynvest – KredEx case study: http://www.citynvest.eu/content/kredex-revolving-fund-energy-efficiency-apartment-building

B. Case Study #2: France – Éco-Prêt à Taux Zéro (Éco-PTZ)

1. What is it? Mechanism overview

The **Éco-Prêt à Taux Zéro** (Éco-PTZ) is a national scheme launched in 2009 that offers **zero-interest loans** for energy renovation works, backed by a **state guarantee** to participating banks. It is designed to support both **individual homeowners** and **co-owner associations (copropriétés)** in undertaking energy efficiency upgrades without incurring interest costs.

The scheme's distinctive value for collective retrofit lies in its ability to allow **co-owner associations** to borrow as a single legal entity on behalf of all participating owners. This spreads the financial obligation across dwellings and ensures that weaker individual credit profiles do not block access to financing — a key mechanism for addressing **heterogeneous creditworthiness** in group projects.

2. Why was it created? Objectives, impacts and benefits

Objectives:

- Accelerate energy renovations in the residential sector to meet France's climate and energy targets.
- Make retrofits financially accessible by eliminating interest costs and extending repayment periods.
- Facilitate building-wide upgrades in multi-apartment buildings, ensuring consistency of works and reducing costs through scale.

Impacts and benefits:

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- **Lower monthly repayment burden**: With the State covering interest, homeowners only repay the principal, making works more affordable.

- **Credit access for collective projects**: Co-owner associations can act as a single borrower, protecting the group from delays or refusals linked to individual credit histories.

- **Market stability**: Standardised loan terms and State oversight encourage wider lender participation and increase the reliability of financing for collective works.

- **Scalability**: The scheme supports both partial and comprehensive renovation packages, making it adaptable to varying building needs.

3. How does it work? Enablers, structure and funding

Enablers:

- **Co-ownership legal framework**: The Construction and Housing Code (*Code de la Construction et de l'Habitation)* allows a co-owner association (*syndicat*) to contract and borrow collectively for the building.

- Integration with other incentives (e.g. MaPrimeRénov') allows borrowers to combine a zero-interest loan with non-repayable grants.

- Partnerships between the French State and accredited banks ensure consistent loan conditions across the market.

- State guarantee through the Guarantee Fund for Energy Renovation (**Fonds de Garantie pour la Rénovation Énergétique,FGRE)**, which covers lender risk in the event of default.

    - The FGRE was created under the **French Energy Transition Law (LTECV)** of August 2015 and implemented by decree in April 2018, with management by **SGFGAS** (Société de gestion des financements et de la garantie de l'accession sociale à la propriété)

    - It provides **counter-guarantees covering up to 50–75%** of losses on ecoPTZ loans, including **collective loans for co-ownership associations**, thereby making it easier for banks to finance energy renovation work in copropriétés

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- FGRE is operational: EDF-backed funding via the PROFGRE program under the French energy savings certificates scheme (CEE), with dedicated resources for both individual and collective retrofit loans (circa €5 million/year for co-owned buildings and €14 million/year for low-income households)

- Up to January 2022, the collective co-ownership segment of the FGRE had a dedicated budget of approximately €1.9 million

Structure and funding:

- **Loan amount**: Up to €50,000 per dwelling for comprehensive renovations.
- **Repayment period**: Up to 20 years, depending on the scale of works.
- **Interest subsidy**: The State reimburses the interest to the bank; the borrower repays only the principal.
- **Guarantee aspect**: While not a full principal guarantee, the regulated framework and State commitment to the interest subsidy reduce perceived risk for lenders.
- **Eligible works**: Energy efficiency measures such as insulation, heating upgrades, renewable energy installations, ventilation systems, and other improvements contributing to energy performance.
- **Access**: Available through accredited banks upon proof of eligible works, often bundled with grant applications.

4. Which risks does it address?

- **Risk 1 – Cashflow and payment default**: By removing interest costs and extending repayment terms, monthly payments are reduced, lowering default probability. For collective loans, this stabilises the project's financing and avoids disruptions if one member struggles to pay.
- **Risk 2 – Heterogeneous creditworthiness**: The co-owner association borrows as a legal entity, meaning individual owners' weaker credit scores do not block the group's access to funding.

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- **Risk 3 – Exit and transfer**: French co-ownership law enables costs to be transferred to new owners through service charge mechanisms, ensuring repayment continuity after a sale.

5. Limitations and challenges

- **Partial guarantee**: The State does not fully cover principal repayment, so banks remain exposed to some default risk.
- **Administrative complexity**: Compliance with eligibility criteria and technical audits can slow uptake, particularly for large co-ownerships.
- **Dependence on other incentives**: Without combining Eco-PTZ with grants, the remaining cost may still be prohibitive for lower-income households.

6. Lessons for collective retrofit buy-in

- **Collective borrowing structures** (like **co-owner associations**) are essential for enabling multi-owner retrofits under one financing agreement.
- **State-backed guarantees** can make banks more willing to finance groups of owners, even when individual credit profiles vary significantly.
- **Zero-interest financing** increases affordability and can broaden participation, but it must be paired with **simplified administration** and targeted outreach to fully unlock its potential.
- **Transferability of obligations** through property law protects financing continuity when dwellings change hands.
- **Bundling with grants** further enhances affordability and uptake, particularly for deep renovations.
- A similar approach could be adapted for a warranty fund, where the guarantee covers both temporary defaults and transitional periods when ownership changes, ensuring the continuity of collective repayment.

7. References

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- Opéra Énergie – FGRE financing allocations: https://opera-energie.com/fonds-garantie-renovation-energetique-fgre/

C. Case Study #3: Bulgaria – Energy Efficiency and Renewable Sources Fund (EERSF)

1. What is it? Mechanism overview

The **Energy Efficiency and Renewable Sources Fund (EERSF)** is a **public–private financial facility** established in 2004 under the Bulgarian **Energy Efficiency Act**, with the primary aim of promoting and financing energy efficiency and renewable energy projects. It operates as a **lending institution**, a **credit guarantee facility**, and a **technical assistance provider**, supporting a wide range of project promoters, from municipalities to private homeowners, with a strong focus on **multi-family residential buildings** managed through homeowner associations.

Its guarantee component is particularly relevant to **collective retrofit buy-in**: EERSF can provide **partial credit guarantees** (typically covering 50–80% of the loan) to lenders financing

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homeowner associations, thereby reducing the risk of lending to groups where some members may have limited repayment capacity.

2. Why was it created? Objectives, impacts and benefits

Objectives:

- Overcome the **credit barrier** for energy efficiency projects in Bulgaria, especially in the residential sector where collective action is required.
- Provide a **market-friendly guarantee facility** to reduce the perceived risk for commercial banks in financing collective projects.
- Support the implementation of Bulgaria's **National Energy Efficiency Action Plan** and EU Renovation Wave objectives.

Impacts and benefits:

- **Catalysing private finance**: By covering part of the lender's potential loss, the Fund mobilises commercial bank lending into sectors they would otherwise avoid.
- **Market development**: Encourages the financial sector to engage in energy efficiency lending, creating a precedent for future investments.
- **Capacity building**: Technical assistance helps homeowner associations prepare viable, bankable retrofit projects, reducing delays and improving project quality.

3. How does it work? Enablers, structure and funding

Enablers:

- Created through legislation, giving it a clear mandate and governance structure.
- Operates with **professional management** combining public oversight and private-sector financial expertise.
- Builds on strong relationships with local banks and municipalities.

Structure and funding:

- **Guarantees**: EERSF offers partial credit guarantees to banks, typically covering 50–80% of the loan.

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- **Loan products**: Direct lending is possible, but the focus is on leveraging guarantees to unlock commercial bank finance.

- **Funding sources**: Initial capitalisation of ~€13 million from the Global Environment Facility (via the World Bank), Government of Austria, Bulgarian Government, and contributions from private Bulgarian companies. Loan repayments and guarantee fees sustain the revolving nature of the fund.

- **Eligible beneficiaries**: Municipalities, private legal entities, and **homeowner associations** implementing energy efficiency or renewable energy projects.

- **Eligible works**: Insulation, heating system modernisation, renewable energy installations, lighting upgrades, and other measures improving energy performance.

4. Which risks does it address?

- **Risk 1 – Cashflow and payment default**: Guarantees cover a significant share of lender losses if the borrower defaults, ensuring group projects can continue even if some members cannot pay.

- **Risk 2 – Heterogeneous creditworthiness**: By underwriting part of the loan, EERSF enables banks to finance homeowner associations with mixed-income membership.

- **Risk 4 – Administrative and compliance**: Technical assistance provided by the Fund helps associations navigate complex requirements, avoiding delays that could stall financing.

5. Limitations and challenges

- **Capital constraints**: With finite guarantee capacity, the Fund must prioritise projects, potentially leaving some associations without coverage.

- **Awareness and uptake**: Some homeowner associations are unaware of the Fund or lack the organisational capacity to apply, limiting reach.

- **Market dependence**: While guarantees encourage bank participation, lenders may still be reluctant in lower-value or high-debt neighbourhoods without additional incentives.

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6. Lessons for collective retrofit buy-in

- **Partial credit guarantees** can be highly effective in bringing hesitant lenders into the collective retrofit market.
- **Bundling technical assistance with financial guarantees** helps address both the organisational and financial risks in multi-owner projects.
- **Public–private governance models** can combine accountability with professional financial management, ensuring operational credibility.
- While not property-linked, the guarantee mechanism could be adapted to **explicitly cover collective payment default risk**, which is key for warranty fund design.

7. References

- EERSF Official Site: http://www.bgeef.com
- World Bank – EERSF Project Profile: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/
- UNECE – Best Practice on Energy Efficiency Financing: https://unece.org/sites/default/files/2021-06/Bulgaria.pdf

D. Case Study #4: Ireland – Home Energy Upgrade Loan Scheme (HEULS)

1. What is it? Mechanism overview

The **Home Energy Upgrade Loan Scheme (HEULS)** is a **low-cost, unsecured loan programme** launched in April 2024 to help homeowners finance energy performance upgrades.

It is delivered by the **Strategic Banking Corporation of Ireland (SBCI)** in partnership with the **European Investment Bank (EIB)** and the **European Investment Fund (EIF)**, with the support of the Irish Government and the Sustainable Energy Authority of Ireland (SEAI).

Loans are available for **between €5,000 and €75,000 per property**, repayable over **up to 10 years**, with **interest rates from around 3% APR** — significantly below standard personal loan rates.

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The key innovation is that loans are **unsecured** (no property collateral required) and backed by an **EIF/EIB guarantee**, allowing broader borrower eligibility, including those with weaker credit profiles.

2. Why was it created? Objectives, impacts and benefits

Objectives:

- Remove financing barriers for households undertaking **deep retrofits** or multiple energy upgrade measures.
- Support the delivery of Ireland's **National Retrofit Plan** and Climate Action Plan targets.
- Encourage integration of **loans with grant support** from SEAI via the "One Stop Shop" retrofit service model.

Impacts and benefits:

- **Affordability**: Interest rates around 3% APR reduce total repayment costs, improving cashflow for borrowers.
- **Inclusivity**: The EIF/EIB guarantee allows lenders to serve a wider pool of applicants, including those with non-standard income or in rural areas.
- **Convenience**: Funding can be drawn down before works start, enabling projects to proceed without homeowners needing to pre-finance expenses.
- **Alignment with grants**: Works must be eligible for SEAI support, ensuring high energy performance outcomes.

3. How does it work? Enablers, structure and funding

Enablers:

- **Partnership model**: SBCI manages the lending facility, with commercial banks and credit unions issuing loans to consumers.
- **Guarantee facility**: EIF/EIB guarantee reduces lender risk, making unsecured loans viable.

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- **One Stop Shop integration**: Grants and loans are coordinated so homeowners deal with a single point of contact for works, financing, and compliance.

Structure and funding:

- **Loan size**: €5,000–€75,000 per home; up to €225,000 per borrower (three properties).
- **Term**: Up to 10 years; fixed rates around 3% APR.
- **Guarantee**: Provided by EIF/EIB to partner lenders, enabling favourable interest rates and unsecured terms.
- **Eligibility**: Works must deliver at least a 20% improvement in Building Energy Rating (BER) and 75% of loan funds must be spent on eligible upgrade measures.
- **Funding sources**: Irish Government, EU InvestEU guarantee facility, and lender capital.

4. Which risks does it address?

- **Risk 1 – Cashflow and payment default**: Low interest rates, unsecured terms, and pre-works drawdown reduce the risk of a homeowner failing to make contributions on time.
- **Risk 2 – Heterogeneous creditworthiness**: The EIF/EIB guarantee widens lender acceptance criteria, allowing participation of mixed-income or higher-risk borrowers within collective projects.
- **Risk 4 – Administrative and compliance**: Integration with SEAI's One Stop Shops ensures grant eligibility and compliance checks are managed centrally, reducing delays that could affect project cashflow.

5. Limitations and challenges

- **No property-linked repayment**: Loans remain tied to individuals, not the property; if an owner sells mid-project, repayment obligations do not automatically transfer.
- **Not a full guarantee**: Lenders still carry some default risk, particularly for high-value or multiple-property loans.

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- **Uptake**: Despite a €500 million funding capacity, early uptake has been lower than expected, with under 400 loans issued in the first year, indicating the need for greater awareness and process simplification.

6. Lessons for collective retrofit buy-in

- **Early drawdown** capability is critical in collective works, ensuring contractors can start without waiting for all households to finalise financing.
- **Credit enhancement** via EIF/EIB guarantee allows participation by a broader demographic, helping to maintain full group membership in collective retrofits.
- **Integrated delivery** with grant administration reduces friction and ensures alignment with technical standards.
- While currently designed for individual homeowners, the model could be **adapted to collective borrowing** if legislation allowed loans to be tied to a property or a co-owner association, mitigating exit risk.

7. References

- SEAI – Home Energy Upgrade Loan Scheme: https://www.seai.ie/grants/home-energy-grants/home-energy-upgrade-loan/
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E. Case Study #5: Latvia – Riga Revolving Fund for Residential Energy Renovation

1. What is it? Mechanism overview

The **Riga Revolving Fund** is a municipal financing instrument established by the **Riga Energy Agency (REA)** to support large-scale energy renovations in multi-apartment

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buildings.

It combines **soft loans** with a **revolving repayment structure**: repayments from completed projects flow back into the Fund to finance new ones, and introduces an innovative **property-linked repayment system** tied to utility bills rather than to the individual borrower.

This structure directly addresses one of the key vulnerabilities in collective retrofit projects: **what happens if an owner sells their dwelling mid-project or defaults on payments**. By linking repayments to the property, not the person, the financial obligation automatically transfers to the new owner.

2. Why was it created? Objectives, impacts and benefits

Objectives:

- Accelerate renovation of Riga's extensive stock of post-war multi-apartment buildings, many with **energy consumption exceeding 177 kWh/m²/year**.
- Remove financing barriers for homeowner associations that might otherwise struggle to obtain commercial loans.
- Reduce transaction and organisational barriers by providing **free technical expertise** alongside financing.

Impacts and benefits:

- **Continuity of repayment**: Property-linked debt ensures that sales or ownership changes do not disrupt the financing plan.
- **Energy savings**: Typical projects achieve **~40% reduction in heat energy consumption**, improving thermal comfort and lowering bills.
- **Market stimulation**: By providing soft loans and assuming some risks normally borne by banks, the Fund incentivises greater participation in the retrofit market.
- **Organisational support**: The City of Riga provides free technical audits, project preparation, and facilitation to homeowner associations.

3. How does it work? Enablers, structure and funding

Enablers:

- Municipal policy mandate for energy efficiency and sustainable housing.

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- Legal provisions allowing debt obligations to be tied to the property and recovered via the municipal utility billing system.

- Direct involvement of the Riga Energy Agency in technical support and loan administration.

Structure and funding:

- **Loan terms**: Soft loans with monthly repayments designed to be **lower than the expected energy savings**, ensuring net positive cashflow for households.

- **Repayment mechanism**: Payments are added to the utility bill managed by the municipality; in case of property sale, the obligation automatically transfers to the new owner.

- **Eligible beneficiaries**: Homeowner associations of priority multi-apartment buildings meeting specific energy consumption and debt criteria (e.g. average annual debts on utility bills below 10%).

- **Funding sources**: Initial capital from the City of Riga, supplemented by national programmes and EU funds; repayments replenish the Fund.

4. Which risks does it address?

- **Risk 1 – Cashflow and payment default**: By structuring monthly repayments to be lower than expected energy savings, affordability is maximised and default risk is reduced.

- **Risk 3 – Exit and transfer**: Property-linked repayment ensures that financing obligations survive ownership changes, avoiding the need for early repayment or legal disputes.

- **Risk 2 – Heterogeneous creditworthiness** *(indirectly)*: Collective borrowing by the homeowner association, combined with the property-linked obligation, allows participation of owners who might otherwise face individual credit constraints.

5. Limitations and challenges

- **Scale-up potential**: Initial target was 10 buildings in year one, growing to 20 annually, but scaling beyond that may require additional capital.

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- **Eligibility restrictions**: The requirement for low existing debt levels excludes some of the most financially vulnerable buildings.

- **Reliance on municipal capacity**: The model depends on strong administrative and technical resources within the city government.

6. Lessons for collective retrofit buy-in

- **Property-linked finance** is a powerful tool for ensuring repayment continuity and mitigating exit risk in collective retrofits.

- **Integration of technical assistance with financing** reduces project preparation delays and increases uptake.

- **Affordability design**, ensuring that loan repayments are lower than projected energy savings, supports repayment discipline and homeowner confidence.

- **Municipal leadership** can play a critical role in both financing and facilitating collective action.

7. References

- Energy Cities – Best Practice Profile: https://energy-cities.eu/best-practice/energy-renovation-of-residential-buildings-through-soft-loans-and-third-party-financing/

- Riga Energy Agency – Programme details (archival)

- Covenant of Mayors – Case studies on municipal financing instruments

F. Case Study #6: France – Picardie Pass Rénovation

1. What is it? Mechanism overview

The **Picardie Pass Rénovation** was a pioneering **third-party financing scheme** developed by the **Regional Public Service Company for Energy Efficiency in Picardie (SPEE)**, operating from 2013 to 2018.

It targeted **homeowners and co-owned buildings** (copropriétés) across the Picardie region, offering a **property-linked repayment model** in which the financing of renovation works was attached to the dwelling rather than the individual.

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The scheme allowed a public intermediary, SPEE, to finance, coordinate, and deliver retrofit projects, with homeowners repaying the cost through an additional property-based charge. This model ensured repayment continuity even if the property changed hands, directly addressing the **exit risk** in collective retrofits.

2. Why was it created? Objectives, impacts and benefits

Objectives:

- Unlock large-scale, deep energy retrofits in a region with ageing, inefficient housing stock.
- Remove the upfront cost barrier by enabling homeowners to repay gradually, linked to the property rather than personal debt.
- Ensure consistent technical quality through centralised project management.

Impacts and benefits:

- **High performance**: Renovations aimed for **40–75% energy savings** per building, often reaching low-energy standards.
- **Confidence and simplicity**: The public operator acted as a **single point of contact** for finance, technical design, contractor management, and quality control.
- **Continuity in repayment**: Property-linked repayment protected the financial plan in cases of sale or change in occupancy.
- **Scale potential**: While the programme ended in 2018 due to institutional changes, its model influenced subsequent public financing initiatives in France and at EU level.

3. How does it work? Enablers, structure and funding

Enablers:

- Legal authority for public entities to act as **third-party investors** in private housing energy renovations.
- Regional government support and alignment with national energy efficiency goals.
- Combination of financial engineering and in-house technical expertise.

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Structure and funding:

- **Project preparation**: SPEE conducted energy audits, developed works specifications, and tendered for contractors.
- **Financing**: SPEE covered upfront costs for the works, sourced from a revolving fund capitalised by the region, European Investment Bank (EIB) loans, and EU funding (e.g. ELENA).
- **Repayment**: Homeowners repaid via a property-based charge, collected alongside local taxes or service fees; in case of sale, the repayment obligation transferred to the new owner.
- **Eligible beneficiaries**: Owner-occupiers, landlords, and co-ownership associations.
- **Eligible works**: Deep renovation packages including insulation, heating system replacement, renewable energy systems, and ventilation.

4. Which risks does it address?

- **Risk 1 – Cashflow and payment default**: Centralised financing removes the need for each household to secure and manage its own loan, reducing the risk of late or missed payments.
- **Risk 3 – Exit and transfer**: Property-linked repayment ensures financial continuity if the home is sold.
- **Risk 4 – Administrative and compliance**: The public intermediary manages all grant applications, technical studies, and compliance steps, eliminating these burdens for homeowners.

5. Limitations and challenges

- **Institutional dependency**: The programme was heavily dependent on the regional public operator; political or funding changes risked its continuity (and ultimately ended the programme).
- **Capital requirements**: The upfront financing required substantial revolving capital, which limited the scale without additional investment.

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- **Repayment period perception**: Some households resisted the long repayment horizons (up to 25 years), despite monthly payments being lower than energy savings.

6. Lessons for collective retrofit buy-in

- **Property-linked repayment** is an effective safeguard against exit risk, enabling group works to proceed without fear of owner turnover.
- **Public intermediary models** can reduce complexity for homeowners and secure higher-quality outcomes through centralised oversight.
- **Integration of finance, technical design, and works delivery** increases homeowner trust and uptake.
- Such schemes require **long-term political and financial stability** to sustain operations and expand reach.

7. References

1. Région Hauts-de-France – Picardie Pass Rénovation legacy: https://www.hautsdefrance.fr/pass-renovation-picardie/
2. Energy Cities – Third-party financing case studies: https://energy-cities.eu
3. European Investment Bank – ELENA-supported projects archive

G. Case Study #7: France – Habicoop Cooperative Housing Model

1. What is it? Mechanism overview

Habicoop is a French network and support organisation for **housing cooperatives**, a form of collective ownership that blends elements of private property, shared governance, and solidarity-based financing.

In a Habicoop cooperative, the legal entity, the cooperative, owns the building, while members hold **shares linked to their right of occupancy**. Because the property is collectively owned, financing for renovations or construction is taken out by the cooperative as a whole, not by individual households.

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This structure inherently manages one of the core vulnerabilities in collective retrofit projects: **the risk that one household's inability to pay could jeopardise the whole group's financing**. In a cooperative, the financial responsibility is mutualised, and internal governance mechanisms allow the group to redistribute burdens if a member experiences financial hardship.

2. Why was it created? Objectives, impacts and benefits

Objectives:

- Provide an affordable and socially sustainable alternative to traditional homeownership or rental.
- Secure long-term affordability by removing housing from speculative markets.
- Facilitate democratic, collective decision-making on all aspects of housing management, including major renovations.

Impacts and benefits:

- **Stability**: Collective ownership prevents fragmented decision-making, enabling building-wide retrofits without the veto risks common in co-ownerships.
- **Solidarity-based risk sharing**: Payment shocks (e.g. illness, job loss) can be managed internally through reserves or temporary redistribution of costs.
- **Alignment of interests**: All members are invested in the long-term maintenance and energy performance of the property.
- **Lower financial exclusion**: Because the cooperative is the borrower, individuals with weaker credit profiles can still access quality housing and benefit from renovations.

3. How does it work? Enablers, structure and funding

Enablers:

- Legal recognition of the **société coopérative d'habitants** (cooperative housing company) under French law, established in 2014.
- Support structures provided by Habicoop (national) and regional associations, offering legal templates, governance training, and financing advice.

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Structure and funding:

- **Borrowing**: The cooperative takes a collective mortgage or renovation loan, repaid from members' monthly contributions.
- **Risk management**: Cooperatives often maintain a **solidarity reserve fund** to cover temporary payment gaps from members.
- **Exit management**: When a member leaves, their share is returned at its original value (indexed to inflation), preventing speculative gains and ensuring affordability for the incoming member.
- **Funding sources**: Member equity (share purchase), cooperative loans from ethical banks (e.g. La Nef, Crédit Coopératif), public subsidies for social housing components, and, in some cases, grants for energy efficiency improvements.

4. Which risks does it address?

- **Risk 1 – Cashflow and payment default**: Internal reserve funds and collective liability allow the group to cover a member's non-payment without jeopardising the lender relationship.
- **Risk 2 – Heterogeneous creditworthiness**: As the cooperative is the borrower, individuals' credit ratings are less critical to loan approval.
- **Risk 3 – Exit and transfer**: Fixed-value share redemption ensures smooth transition between members without financial disruption to the cooperative.
- **Risk 4 – Administrative and compliance**: Centralised governance within the cooperative ensures coordinated decision-making and compliance with funding requirements.

5. Limitations and challenges

- **Capital access**: Cooperatives may face difficulties securing large-scale renovation funding without public guarantees, as ethical banks have lending limits.
- **Governance demands**: Requires strong internal governance and active participation from members.

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- **Scale**: While growing, cooperative housing remains a niche segment in France, limiting the immediate applicability for large-scale retrofit programmes.

6. Lessons for collective retrofit buy-in

- **Collective legal ownership** creates inherent payment security for lenders and removes the weakest-link problem in creditworthiness.
- **Solidarity reserve funds** are a practical tool for mutualised risk coverage in small groups — a feature that could be adapted into a broader warranty fund model.
- **Fixed-value share transfers** prevent speculative pressure and maintain affordability while ensuring smooth membership turnover.
- The model demonstrates how **internal governance and financial pooling** can substitute, in part, for external guarantees.

7. References

- Habicoop National – Legal framework and cooperative housing model: https://www.habicoop.fr
- Fédération Nationale des Sociétés Coopératives d'Habitants – Guides and resources
- Ministry of Ecological Transition – Cooperative housing legal recognition

H. Case Study #8: Italy – Milan Transition Fund 2026

1. What is it? Mechanism overview

The **Milan Transition Fund 2026** is a **blended finance instrument** developed by the City of Milan in partnership with European and private financial actors to drive **deep, community-scale building retrofits**.

It combines **national tax incentives** (Italy's "Superbonus 110%"), **private investment capital**, and **public co-investment** to deliver large-scale urban regeneration with environmental, social, and economic co-benefits.

The Fund's governance model, jointly controlled by public and private entities, centralises **project design, procurement, financing, and delivery**. This structure enables the **aggregation of multiple private homeowners** into a single contracting and financing framework, reducing transaction costs and increasing bargaining power with suppliers.

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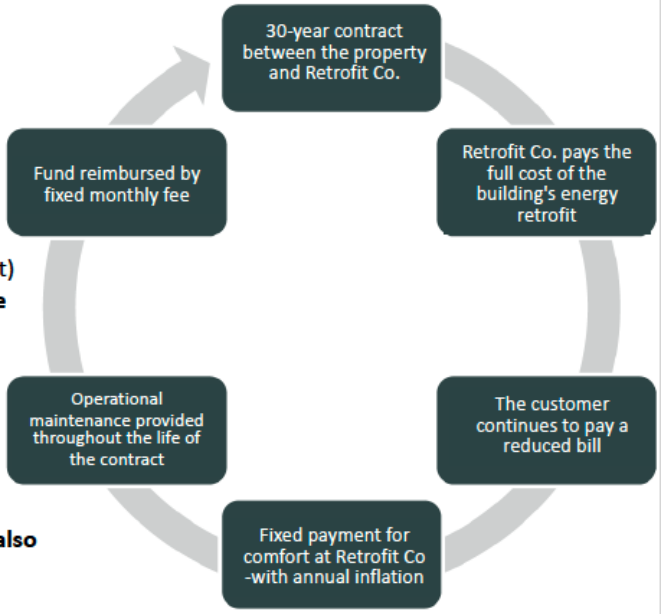
MAIN FEATURES AND SOLUTIONS

1. A **centralized entity** (e.g. Retrofit Co.) aligned with public goals that combines public and private capital to coordinate and execute **DeepRetrofit interventions and investments in local communities with a "green neighborhoods as a service" approach**.
2. **Absence of debt** on individuals/owners due to the **savings** resulting from **energy efficiency and maintenance costs** with a long term contract (30-year Comfort and Maintenance Contract) with the entity that allows to create a **credit line to support the return (amortization) of the investments developed thanks to the resources collected from the fund.**
3. **Centralized purchasing** with the objective of optimizing economies of scale and **balancing economic goals, decarbonization goals and social impacts** identified by the municipality
4. The entity provides the **maintenance of the developed assets also covering the execution and management risk** in the long term



Source: Milan Municipality

The concept was taken up by the Horizon Project CLIMB (CLimate-neutrality through Integrated Molecular model for urBan regeneration with sustainable finance) developed in support of the 100 Climate-Neutral and Smart Cities Mission, that aims at providing, among other activities, financial instruments to deliver the Climate City Contract for the City of Milan. The project started in 2025 and will end in November 2026.

2. Why was it created? Objectives, impacts and benefits

Objectives:

- Leverage the **Superbonus 110%** tax incentive to catalyse large-scale retrofits beyond a project-by-project approach.
- Aggregate **community demand** to unlock industrial-scale retrofit solutions, including off-site manufacturing and integrated delivery.
- Build a financing platform capable of attracting institutional and international investors to supplement public incentives.

Impacts and benefits:

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- **Economies of scale**: Bulk procurement and standardisation of works lower per-unit costs and delivery time.
- **Holistic outcomes**: Projects integrate decarbonisation, renewable energy, green infrastructure, and community space upgrades.
- **Investor confidence**: Blended capital structure and public participation reduce perceived risk for private investors.
- **Community engagement**: Bottom-up involvement of residents shapes retrofit priorities and enhances buy-in.

3. How does it work? Enablers, structure and funding

Enablers:

- National-level incentive (Superbonus 110%) covering more than the full cost of eligible energy efficiency works via tax credits.
- Strong municipal leadership and alignment with regional development goals.
- Partnerships with EIT Climate-KIC and other innovation platforms to co-design the financing and delivery model.

Structure and funding:

- **Capital structure**:
  - **Base layer**: Tax credits from the Superbonus programme, pooled by participating households.
  - **Additional layers**: Public co-investment (municipal funds) and private investment from institutional and impact investors.
- **Fund management**: Jointly governed public–private entity responsible for contracting works, managing cashflows, and monitoring outcomes.
- **Delivery model**: Demand aggregation enables contracting with suppliers for multiple buildings at once, often using prefabricated retrofit components.

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- **Eligibility**: Initially piloted in one Milanese district with 250 housing units, with a goal to scale to 10,000 units by 2023.

4. Which risks does it address?

- **Risk 1 – Cashflow and payment default**: By pooling financing and aligning it with tax credits, the Fund reduces the exposure of individual households to upfront or bridging finance risks.

- **Risk 2 – Heterogeneous creditworthiness**: The Fund, not the individual households, is the borrower/contracting entity, shielding the group from credit-related disruptions.

- **Risk 4 – Administrative and compliance**: Centralised management ensures all technical, fiscal, and regulatory requirements for the Superbonus and other funding streams are met.

- **Risk 5 – Cost overrun/gap**: Blended capital allows flexibility to cover eligible costs beyond tax credit scope, reducing risk of works being halted.

5. Limitations and challenges

- **Dependency on national incentives**: The Superbonus was time-limited and subject to changes in eligibility and reimbursement rules, creating uncertainty.

- **Complex governance**: Joint public–private management can slow decision-making.

- **Replicability**: The model's reliance on a high-value tax credit and a large municipal capacity may limit transferability without adaptation.

6. Lessons for collective retrofit buy-in

- **Pooling tax credits or other entitlements** into a common fund is a powerful enabler of collective works.

- **Public–private blended finance structures** can unlock scale and attract investment for large community retrofits.

- **Centralised contracting** removes the weakest-link problem by ensuring all households are included in the same delivery contract.

- **Demand aggregation** enables industrial-scale retrofit approaches, lowering cost and shortening project timelines.

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7. References

- EIT Climate-KIC – White Paper on Blended Finance for Building Renovation: https://www.eit.europa.eu/sites/default/files/white-paper-how-blended-finance-can-catalyse-building-renovation-eit-climate-kic-2021.pdf
- City of Milan – Transition Fund pilot documentation (2021–2023)
- Italian Government – Superbonus 110% programme overview

I. Case Study #9: Emerging Community Land Trusts and Cooperative Funds – Belgium, Netherlands, UK

1. What is it? Mechanism overview

Community Land Trusts (CLTs) and cooperative housing structures in Belgium, the Netherlands, and the UK are experimenting with **mutual guarantee reserves** and **solidarity-based payment systems** to protect against individual default within a collective ownership or retrofit context.

These mechanisms are not yet widespread in retrofit financing, but they offer a promising model for **mutualised risk pooling**: a collective reserve, funded by all members, that can temporarily cover a member's payment obligations if they are unable to pay due to income shocks or unforeseen circumstances.

The approach directly targets one of the central vulnerabilities in collective retrofit schemes, **payment default risk**, by preventing a single member's difficulties from destabilising the group's entire financial arrangement.

2. Why was it created? Objectives, impacts and benefits

Objectives:

- Provide long-term housing affordability through collective ownership models.
- Build financial resilience within the group by internalising risk management rather than relying solely on external lenders or state guarantees.
- Enable more inclusive participation by allowing households with varying income stability to join without undermining the group's creditworthiness.

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Impacts and benefits:

- **Inclusivity**: Low- to moderate-income households can participate in collective ownership or retrofit projects without creating financing barriers for the group.
- **Stability**: The mutual guarantee fund ensures continuity of loan repayments to lenders, protecting the group's reputation and avoiding penalties.
- **Autonomy**: The reserve is controlled by the group itself, often with democratic decision-making about its use.

3. How does it work? Enablers, structure and funding

Enablers:

- Strong governance structures inherent to CLTs and cooperatives.
- Legal frameworks in Belgium, the Netherlands, and the UK that recognise cooperative ownership and allow collective borrowing.

Structure and funding:

- Members contribute a small, regular amount to a **mutual guarantee reserve**.
- In case of payment difficulty by any member, the reserve temporarily covers their obligation to the collective loan.
- Some models combine the reserve with **solidarity insurance schemes**, where members agree in advance how repayment assistance will be repaid or forgiven.
- In certain UK CLTs, external partners (local councils, housing associations) may contribute seed funding to the reserve in the early years to build resilience.

Examples:

- **CLT Brussels** has explored reserve mechanisms to ensure stability in shared renovation loans.
- **Dutch wooncoöperaties** in Amsterdam and Rotterdam are working with municipal partners to integrate risk pooling into financing agreements.

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- **UK CLTs** in areas like Cornwall and Bristol have piloted small solidarity funds linked to shared mortgages.

4. Which risks does it address?

- **Risk 1 – Cashflow and payment default**: Mutual reserves ensure timely repayment to lenders even if a member temporarily defaults.
- **Risk 2 – Heterogeneous creditworthiness**: Lenders can accept a more diverse membership profile when a collective reserve is in place.
- **Risk 3 – Exit and transfer risk** *(partially)*: Cooperative legal structures often include provisions for smooth share transfers, maintaining repayment obligations.

5. Limitations and challenges

- **Scale**: Building a sufficient reserve takes time, making early years more vulnerable unless seed funding is provided.
- **Liquidity risk**: In cases of multiple simultaneous defaults, the reserve could be depleted quickly.
- **Transferability to retrofit**: While the model works well for collective mortgages, adaptation to one-off retrofit projects requires tailored contractual and governance arrangements.

6. Lessons for collective retrofit buy-in

- **Internal mutual guarantees** can complement or reduce the need for external warranty funds, particularly in stable, well-governed groups.
- **Democratic governance** increases buy-in and compliance with repayment obligations, as members have a stake in protecting the collective's solvency.
- **Seed funding from public authorities** can accelerate reserve building, enabling the group to take on projects sooner.
- Adapting this model for retrofit financing would require:
    - A legal structure that binds participants together financially.
    - Clear rules for reserve contributions and disbursements.

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- Integration with external guarantees for large-scale works.

7. References

- Community Land Trust Brussels – Financial governance models: https://cltb.be
- Wooncoöperatie Amsterdam – Municipal partnerships: https://wooncooperatie.amsterdam
- UK National CLT Network – Mutual aid and risk pooling: https://www.communitylandtrusts.org.uk

J. Case Study #10: Germany – KfW EnerPHit Programme

1. What is it? Mechanism overview

The **KfW EnerPHit Programme** is a national financing instrument that supports deep energy retrofits of existing buildings to **Passivhaus EnerPHit** or equivalent high-performance standards. Operated by the state-owned development bank **Kreditanstalt für Wiederaufbau (KfW)**, it combines **low-interest loans** with **performance-based repayment bonuses (grants)**, ensuring that quality and verified results are central to the financial model.

The programme is available to both **single-family** and **multi-family** buildings, including housing associations (*Wohnungseigentümergemeinschaften*), making it relevant for collective retrofit buy-in initiatives. By rewarding achieved performance, it reduces both the **financial risk** and the **energy savings shortfall risk** that can undermine repayment capacity and trust in large-scale retrofit projects.

2. Why was it created? Objectives, impacts and benefits

Objectives:

- Drive Germany's building stock towards **near-zero energy use**, in line with national climate targets.
- Close the "performance gap" by linking financial incentives to measured outcomes.
- Reduce the upfront cost barrier to deep retrofits and improve access to affordable financing.

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Impacts and benefits:

- **Affordability**: Long-term, low-interest loans make deep retrofits financially accessible for more owners.
- **Performance assurance**: Grants are conditional on achieving specific post-renovation energy performance, ensuring technical quality and avoiding underperformance.
- **Scalability**: The model supports both individual and collective borrowers, enabling entire buildings to be renovated under one financing agreement.
- **Market transformation**: Creates demand for high-quality construction practices and certified energy consultants.

3. How does it work? Enablers, structure and funding

Enablers:

- KfW's position as a state-owned development bank with long-standing experience in energy efficiency finance.
- A legal framework that enables housing associations to take collective loans for building-wide retrofits.
- Established accreditation systems for energy consultants and contractors.

Structure and funding:

- **Loan terms**: Low-interest loans (as low as 0.75% in recent years) with terms up to 30 years.
- **Grant component**: Repayment bonus of up to 40% of the loan principal if verified energy efficiency targets are achieved, assessed by an independent energy consultant.
- **Eligible works**: Full building envelope upgrades (insulation, triple glazing), high-efficiency heating and ventilation systems, and renewable energy integration.
- **Funding sources**: German federal budget (via the Ministry for Economic Affairs and Climate Action) and KfW's own capital from the bond market.

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4. Which risks does it address?

- **Risk 5 – Cost overrun / funding gap**: Grants offset a substantial part of the cost, giving owners more room to manage unexpected expenses without abandoning the project.

- **Risk 6 – Performance shortfall**: The grant is only disbursed if measured energy performance targets are achieved, reducing the likelihood of works that fail to deliver promised savings.

- **Risk 1 – Cashflow and payment default** *(indirectly)*: Long repayment periods and low interest rates keep monthly outgoings manageable, improving repayment stability.

5. Limitations and challenges

- **Complex eligibility**: Achieving EnerPHit or equivalent standards requires extensive works, skilled contractors, and certified design, which can be daunting for some owners.

- **Upfront costs**: Even with grants, owners must secure bridge financing or cover initial expenses before loan disbursement.

- **Collective decision-making**: In multi-owner buildings, reaching agreement on scope and financing can delay or block projects.

6. Lessons for collective retrofit buy-in

- **Performance-linked grants** align financial incentives with the actual outcomes that matter most for energy savings and comfort.

- **Combining loans and grants** addresses both short-term affordability and long-term repayment feasibility.

- **Targeting housing associations** ensures that multi-unit buildings can access the programme under one collective agreement rather than piecemeal.

- A similar model could be adapted for a **warranty fund**, where partial release of guarantees is tied to post-renovation performance verification — giving both lenders and owners confidence in the investment.

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- KfW – Energy-efficient refurbishment programmes: https://www.kfw.de/inlandsfoerderung/Privatpersonen/Bestandsimmobilien/
- Passivhaus Institut – EnerPHit Standard: https://passiv.de/en/
- German Federal Ministry for Economic Affairs and Climate Action – Building renovation policy.

IV. Policy recommendations for establishing warranty funds to support low-Income collective retrofits

Collective retrofit schemes, where groups of private homeowners, often in partnership with social housing organisations, join forces to plan and finance energy renovations, offer one of the most effective ways to deliver deep retrofits at scale. By aggregating demand, such groups can negotiate better prices, coordinate works more efficiently, and unlock more ambitious energy savings.

For low-income households, however, the financial risks of collective borrowing can be a decisive barrier to participation. The potential for a single participant's default to jeopardise the entire project, and the negotiated price advantage, makes lenders cautious and homeowners hesitant. This is particularly true where creditworthiness varies within the group, or where ownership turnover during the project could disrupt repayment flows.

A **warranty fund** designed to absorb or cover these risks can be a game-changer. Lessons from the ten case studies across Europe show that, when properly designed, such funds can stabilise collective financing, increase lender confidence, and make participation affordable for households who might otherwise be excluded.

A. From lessons to action

Analysis of the case studies points to **ten key design principles** that should guide the creation of warranty funds for collective retrofit. These principles are relevant at **EU, national, and local levels**, and can be adapted to the specific legislative, financial, and social context of each Member State.

1. Make collective participation legally and administratively possible

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In many countries, low-income homeowners cannot borrow collectively without complex legal workarounds. Enabling co-owner associations, apartment associations, cooperatives, or project-specific entities to act as the legal borrower is a foundational step. Without this, a warranty fund cannot function effectively. France's Éco-PTZ and Estonia's apartment association model show that where the law supports collective borrowing, both lenders and households benefit.

2. Use public guarantees to de-risk bank lending

Guarantees backed by national, regional, or local authorities can shift lender perceptions of collective loans from "high risk" to "manageable." Coverage in the range of 50–75% of loan amounts, as seen in Estonia's KredEx and France's FGRE, is enough to unlock lending without over-exposing public finances.

3. Blend guarantees with grants for affordability

Risk coverage alone is not enough for low-income groups; the loan amount itself must be manageable. Combining guarantees with grants covering 30–50% of renovation costs can reduce repayment burdens and help prevent default before it happens, as demonstrated by KredEx and KfW's EnerPHit programme.

4. Protect against the "weak link" problem

The design must explicitly cover situations where one member cannot pay, ensuring the rest of the group is not penalised or forced to renegotiate terms. This is crucial for preserving group trust and contractor confidence. The Severn Wye and FGRE models illustrate how guarantees can maintain lender commitments in such situations.

5. Lock obligations to the property, not the person

Linking repayment obligations to the property deed, and recovering payments through property taxes or utility bills, can protect the repayment flow when ownership changes during the project. Riga's revolving fund shows this can be done effectively, reducing exit risk.

6. Provide early-stage support for project formation

Low-income groups often need help even before financing is secured: feasibility studies, legal set-up, and preliminary contractor negotiations can be unaffordable without support. The Milan

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Transition Fund and Picardie Pass Rénovation show how early-stage assistance strengthens group cohesion and project viability.

7. Build internal safety nets

Groups that maintain their own reserve funds or solidarity agreements can bridge short-term payment gaps internally, reducing the need for public intervention. Habicoop and CLT models in Belgium and the UK offer practical templates.

8. Incentivise quality and savings performance

Guarantees and grants should be tied to verified energy savings or comfort improvements. This ensures that households, particularly those with limited means, see tangible benefits on their energy bills, as in KfW's performance-based grants.

9. Embed the warranty fund in a local one-stop-shop

A warranty fund alone cannot address the complexity of collective retrofit. Low-income groups benefit most when financial support is coupled with technical advice, administrative assistance, and contractor coordination. Picardie Pass Rénovation and Bulgaria's EERSF both combine these elements effectively.

10. Design for local sustainability

Revolving mechanisms, where repayments and modest participation fees replenish the fund, can ensure the warranty fund's long-term viability. The Riga and Severn Wye funds illustrate how sustainability can be built into the model from the start.

B. Why local and national leadership matters

While the EU can support such initiatives through programmes like InvestEU, ELENA, and LIFE, **implementation will succeed or fail at the national and local level**. National governments must establish the legal and financial frameworks, while local authorities are uniquely positioned to provide facilitation, trust-building, and community engagement.

The case studies show that the most successful schemes combine **national-level guarantees and legislative backing** with **local-level technical support and group coordination**. This dual approach ensures that low-income households are not just invited to participate, but are given the tools, protections, and confidence to do so.

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Policy recommendations table – Warranty funds for low-income collective retrofits

#	DESIGN PRINCIPLE	POLICY LEVERS (EU / NATIONAL / LOCAL)	CASE STUDY EXAMPLES
1	**Make collective participation legally possible**	**National**: Amend property/tenancy law to allow co-owner associations, cooperatives, or project-specific entities to borrow collectively. **Local**: Provide legal templates and facilitation for group formation.	France – Éco-PTZ collective loans via copropriété law; Estonia – apartment associations as legal borrowers.
2	**Use public guarantees to de-risk bank lending**	**EU**: Support via InvestEU or EIB guarantee facilities. **National**: Create state-backed guarantee funds for group loans. **Local**: Co-guarantee alongside national funds for local schemes.	Estonia – KredEx (75% guarantee); France – FGRE; Bulgaria – EERSF.
3	**Blend guarantees with grants for affordability**	**EU/National**: Pair guarantees with renovation grants (30–50% of eligible costs). **Local**: Top-up grants for low-income households.	KredEx – 30–50% grants + guarantee; KfW EnerPHit – loan + performance grant; Milan Transition Fund – blended finance.
4	**Protect against the "weak link" problem**	**National**: Guarantee covers payment default by any member of the group. **Local**: Local administration	Severn Wye Revolving Retrofit Guarantee Fund – covers lender exposure when borrowers default; French

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		steps in as temporary payer of last resort.	FGRE – collective loans protected against individual non-payment.
5	**Lock obligations to the property, not the person**	**National**: Amend lending laws to allow property-based repayment obligations. **Local**: Integrate with property tax or utility bills for recovery.	Riga Revolving Fund – repayment obligation attached to building, transferable to new owner.
6	**Provide early-stage support for project formation**	**EU**: Fund feasibility via ELENA or LIFE. **National/Local**: Grants for audits, legal setup, and technical design before contracting.	Milan Transition Fund – pre-financing and mentoring before property acquisition; Picardie Pass Rénovation – embedded technical support.
7	**Build internal safety nets**	**National/Local**: Encourage reserve funds or solidarity agreements within groups; offer seed funding to build them.	Habicoop (France) – internal solidarity for mortgage payments; CLTs in Belgium/UK – mutual reserves for arrears.
8	**Incentivise quality and savings performance**	**EU/National**: Make part of guarantee/grant conditional on verified post-renovation performance. **Local**: Fund local performance verification.	KfW EnerPHit – performance-based grant; KredEx – eligible works include energy audits and technical oversight.
9	**Embed the warranty fund in a local one-stop-shop**	**EU/National**: Require integration of finance with technical facilitation. **Local**: Operate or fund local facilitation hubs.	Picardie Pass Rénovation – full facilitation and finance; EERSF (Bulgaria) – technical and financial assistance combined.

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10	**Design for local sustainability**	**EU/National**: Require revolving mechanisms where feasible. **Local**: Dedicate a portion of loan repayments or local carbon tax revenue to replenishing the fund.	Riga Revolving Fund; Severn Wye – guarantee fund replenished by repayments.

C. Why act now?

The EU's Renovation Wave strategy calls for the annual renovation of 35 million buildings by 2030. Achieving this target requires more than technology and funding—it requires a financing model that low-income households can trust, and that lenders can support without fear of default.

Collective retrofits offer a unique opportunity to achieve this scale. By aggregating demand, groups of homeowners can:

- Secure **bulk procurement prices** that reduce costs by 10–20% compared to individual works.
- Coordinate deeper, more integrated renovations that deliver greater energy savings and comfort.
- Access professional facilitation and quality control that small-scale projects rarely afford.

Yet for low-income households, the risks remain disproportionately high. The loss of a single participant can cause negotiated prices to collapse, works to be delayed, or financing to be withdrawn altogether. These are not abstract risks—they are well documented in the collective housing retrofit sector and repeatedly cited by lenders and project managers as the main reason why group projects fail before works even begin.

A **warranty fund** can address these vulnerabilities head-on:

- **Protecting group financing** from individual payment default.

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- **Enabling inclusive participation**, so mixed-income groups can proceed without excluding the most financially vulnerable.

- **Increasing lender confidence**, unlocking lower interest rates and more flexible repayment terms.

- **Preserving bulk pricing**, even if one or more households face temporary hardship.

The case studies in this report show that such mechanisms are not speculative—they are already in use in several Member States, in both the public and cooperative housing sectors. The innovation lies in adapting them for **private homeowner groups**, particularly those that include low-income participants, and integrating them into existing renovation finance schemes.

Acting now has a multiplier effect:

- Every collective retrofit safeguarded by a warranty fund delivers **greater emissions reductions per euro spent**.

- It prevents households from **sliding deeper into energy poverty** due to unmanageable renovation debt.

- It builds **community-level trust** in the renovation process, encouraging replication and scaling.

The longer the EU and its Member States wait, the more opportunities for cost-effective, large-scale retrofits will be lost. Rising construction costs and interest rates mean that projects are already at risk of becoming unaffordable. A warranty fund is a **practical, proven, and immediately implementable solution** to unlock thousands of stalled or hesitant collective retrofit initiatives—especially those that can have the greatest social impact.

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CONCLUSION

Collective retrofit has the potential to deliver significant economic, environmental, and social benefits. It enables deeper retrofits, spreads fixed costs, and leverages economies of scale in ways that individual projects cannot match. Yet without mechanisms to manage financial risk within the group, these projects remain vulnerable to disruption, particularly in mixed-income contexts where some participants face greater exposure to economic shocks.

The ten case studies examined in this report demonstrate that risk-sharing mechanisms are both technically feasible and already in use, from state-backed guarantees in Estonia and France to mutualised reserve funds in cooperative housing models. While none of these examples is a perfect fit for every context, they collectively point to a clear set of design principles. These include enabling collective borrowing through appropriate legal structures, blending guarantees with grants to maintain affordability, linking repayment obligations to properties rather than individuals, and integrating financial tools with technical facilitation.

For national and local governments, warranty funds represent a relatively low-cost intervention with high leverage potential. By stabilising collective financing arrangements, they can unlock private investment at scale, protect negotiated contractor pricing, and make participation possible for households that might otherwise be excluded. For lenders, they offer a pathway to serve a broader client base with reduced default risk. For communities, they provide the reassurance needed to embark on ambitious retrofit programmes with confidence.

The evidence is clear. Well-designed warranty funds can be implemented now, using existing institutional and financial frameworks. Doing so will not only accelerate the rate and depth of retrofit but also ensure that the transition to an energy-efficient housing stock is equitable, inclusive, and resilient. In the context of the EU's climate and social objectives, this is not just a technical solution but a strategic necessity.

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