

Incentives for low-income households to be integrated with privately financed GHGM programmes



Policy Brief

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Executive Summary

This policy brief intends to gather best practices and examples regarding "hybrid" green financing - an approach to green financing which enables public and private finance sources to be blended. It also includes financing solutions that may currently be entirely publicly or privately financed, but where the model has the potential to be replicated and adapted to hybrid financing. The brief builds on extensive desk research combined with a series of meetings with social and affordable housing municipal companies and a governmental programme dedicated to urban regeneration. A particular overview of the Portuguese case study was made and solutions with strong replication potential were identified.

Energy poverty is a multi-dimensional phenomenon, driven primarily by three underlying root causes, linked to high energy expenditure in proportion to a household's budget, low levels of income, and poor energy performance of buildings and appliances. This can be tackled through financial supporting programmes and incentives, using different solutions, with distinct models and acting mechanisms. This includes existing "traditional" financing products (such as loans and leases), "specialised" products (such as on-bill and on-tax financing), and other mechanisms (like subsidies).

The analysis of European and, more, Portuguese examples of funding schemes to mitigate energy poverty is useful to identify "hybrid" programmes able to be improved and/or replicated. Also, municipal housing companies, as entities close to vulnerable households and to families facing energy poverty situations, should be highlighted as primary channels to bring some of these schemes into action.

The European Commission also sets the tone, stating that member states are required to promote energy efficiency lending products (such as green mortgages and green loans) and ensure that these are offered widely by financial institutions and are visible and accessible to consumers. Furthermore, energy efficiency lending products should be made available to low-income households, and specific provisions should be taken as these households may not be able to afford loan payments at market rates.

Thus, despite the important role that support schemes such as grants and direct subsidies play in addressing energy poverty, loans have the potential to reach more households and tackle this issue also in line with the European Commission's recommendations. In this sense, the structure used by the Portuguese IFRRU 2020 scheme is a good example of public and private funding integration. In this case, the support is given in the form of a loan granted by banks, where the loan consists of public and private funds. Therefore, the sharing of risk between the public and private sector unlocks better financing conditions. Nevertheless, it should be considered that in a scenario of high interest rates, an exclusively loan-based product may not be sufficient. Consequently, with the aim of reinforcing its attractiveness, it will be important to consider the introduction of a combination of loan component with non-refundable support, either in the form of bonuses based on results, or in converting part of the loaned capital into non-refundable incentives.

Additionally, experiences such as the one presented by Domus Social EM (a municipal affordable housing company), where high-quality social housing construction was assured through a public-private partnership with a private real estate promoter, are also replicable. In this case, the municipality handed over its land property rights, and the promoter advanced all the necessary renovation investments, at its own expense. A new neighbourhood was built, comprising 70 apartments with A+ energy performance certificates (EPCs). The affordable rent apartments were prioritised, and delivered in about 18 months, at which point the construction of private buildings was initiated on the remaining land, making the investment profitable for the private promoter.

Moreover, when municipal budget is needed to complement national or EU funds this can also be done through public-private partnerships, via protocols with private companies, or through the integration of public and private funding. Overall, the involvement of private finance seems inevitable, and the challenge is to develop investment opportunities that are attractive to investors, but with win-win potential for investors, households, and planet alike.

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Glossary of terms and abbreviations used

Abbreviation / Term	Description
CEDB	Council of Europe Development Bank
ECO	Energy Company Obligation
EDEPI	European Domestic Energy Poverty Index
EED	Energy Efficiency Directive
EIB	European Investment Bank
ELENA	European Local Energy Assistance
ELPPE	Portuguese Long-Term Strategy for Combating Energy Poverty
EPAH	Energy Poverty Advisory Hub
EPBD	Energy Performance of Buildings Directive
ERFD	European Fund for Regional Development
ESA	Energy Service Agreements
ESCOs	Energy Service Companies
ESPC	Energy Savings Performance Contracts
EU	European Union
IFRRU	National Financial Instrument for Urban Renewal and Revitalization
INE	Portuguese National Statistics Institute
JRC	Joint Research Centre
NECPs	National Energy and Climate Plans
PPPs	Public-Private Partnerships
PSEE	Public Service for Energy Efficiency
PV	Photovoltaic
SCF	Social Climate Fund
SLL	Sustainability Linked Loans
SPTs	Sustainability Performance Targets

Abbreviation / Term	Description
RRF	Recovery and Resilience Facility

1 What is Energy Poverty?

Energy poverty occurs when a household must reduce its energy consumption to a degree that negatively impacts the inhabitants' health and wellbeing. It is mainly driven by three underlying root causes: (i) high proportion of household expenditure spent on energy; (ii) low income; and (iii) low energy performance of buildings and appliances (European Commission, 2023).

According to Eurostat data for 2022, high energy prices together with the cost-of-living crisis contributed to an increase in energy poverty, with an estimated 9.3% of Europeans (approximately 40 million persons) across all member states unable to keep their homes adequately warm in 2022, compared to 6.9% in 2021. It is also worth noting that, according to the same source, in 2022, 95.3 million people (21.6% of the European Union's population, or over one in five citizens) were at risk of poverty or social exclusion, i.e., lived in households experiencing at least one of the three poverty and social exclusion risks (risk of poverty, severe material, and social deprivation and/or living in a household with very low work intensity) [4].

The 2023 European Commission recommendation on Energy Poverty [9] stated that **energy poverty** is a multi-dimensional phenomenon, driven primarily by three underlying root causes, linked to **high energy expenditure in proportion to a household's budget, low levels of income, and low energy performance of buildings and appliances**. Also, the recently adopted revision of the Energy Efficiency Directive (EED) [8] includes for the first time an EU-wide definition of energy poverty, considering that **energy poverty** means a “household's lack of access to essential energy services, where such services provide basic levels and decent standards of living and health, including adequate heating, hot water, cooling, lighting, and energy to power appliances, in the relevant national context, existing national social policy and other relevant national policies, caused by a combination of factors, including at least non-affordability, insufficient disposable income, high energy expenditure and poor energy efficiency of homes”. Moreover, now that energy poverty is defined at the European Union's (EU) level, the EU's legal framework requires that energy poverty in member states is identified and tackled also within the national energy and climate plans (NECPs), providing a timeframe, and outlining the relevant policies.

In a simple manner, energy poverty can be understood as a “situation where a household cannot meet its domestic energy needs”. It is possible to assess the scale of energy poverty in the EU in several ways. The revised EED [8] proposes **four main indicators** to be considered by member states when assessing energy poverty: (i) inability to keep home adequately warm; (ii) arrears on utility bills; (iii) population living in a dwelling with a leaking roof, damp walls, floors or foundations, or rot in window frames or floor; and (iv) the at-risk-of-poverty rate. Nonetheless, a methodology for measuring energy poverty and a **set of indicators** were already published in the 2020 Commission recommendation on Energy Poverty [7]. This recommendation identified 13 key indicators based on available Eurostat data, other data availability, reliability, and robustness. The indicators cover the three energy poverty angles: low income, high share of energy in spending and low energy efficiency, particularly in housing. A dashboard with indicators used for national and European level measurement is also available on the [Commission website](#) [12], together with guidance for addressing the measurement of energy poverty at the local level. Additionally, for measuring energy poverty at the local level, the Covenant of Mayors for Climate and Energy in Europe, with the support of the [Energy Poverty Advisory Hub](#) (EPAH)¹ and the Joint Research Centre (JRC), proposed a set of 56 local energy poverty indicators for assessing and monitoring energy poverty [13]. Grouped into six macro-areas, these indicators can be used for the Covenant of Mayors reporting while the monitoring framework serves as an instrument for planning and implementation of energy poverty measures.

¹ The EPAH is the leading EU initiative aiming to eradicate energy poverty and accelerate the just energy transition of European local governments. EPAH's mission is to be «the central platform of energy poverty expertise in Europe for local authorities and all stakeholders interested in taking action to combat energy poverty in Europe by providing direct support, online trainings, and research results and by building a collaborative network of stakeholders interested in taking action to combat energy poverty in Europe».

Another example is the European Domestic Energy Poverty Index (EDEPI) [11], that ranks member states based on their progress made in alleviating domestic energy poverty, considering both summer and winter domestic energy poverty. Figure 1 provides the EDEPI scores and, as it can be observed, Portugal, Italy and Spain have low scores, namely because they must alleviate both summer and winter energy poverty. The latter can be addressed by insulating homes and improving energy efficiency of heating systems, while the former requires a combination of insulation, passive cooling solutions such as shading, orientation, form, layout, fenestration design, and efficient cooling/ventilation systems.

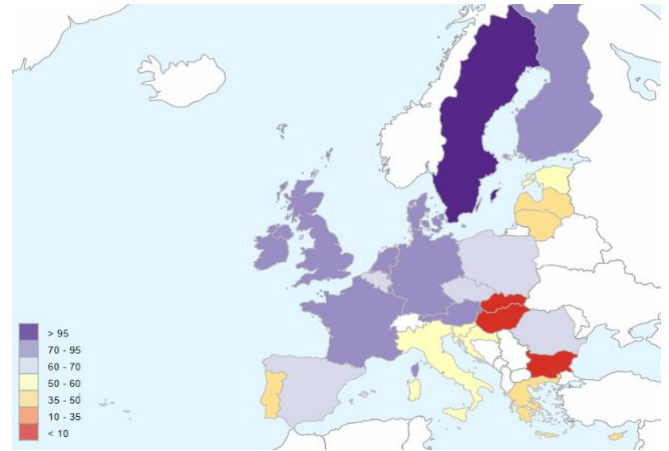


Figure 1: Domestic energy poverty index scores.
Source: EDEPI, 2023

2 Financing mechanisms to alleviate Energy Poverty

The supporting programs and incentives to tackle energy poverty may use different financing solutions, with distinct models and acting mechanisms. There are “traditional” financing products (as loans and leases), “specialized” products (such as on-bill and on-tax financing), and other mechanisms (such as subsidies), that can be enforced [6].

The **traditional financial mechanisms** can be divided into:

1. Loans:

- **Green loans** enable borrowers to use the proceeds to exclusively fund projects that make a substantial contribution to an environmental objective. To be called a green loan, a loan should be structured in alignment to green loan principles. Categories of eligibility include renewable energy, energy efficiency, climate change adaptation and green buildings that meet regional, national, or internationally recognized standards or certifications.
 - **Sustainability linked loans (SLL):** any type of loan instrument and/or contingent facility (e.g. bonding line, guarantee line, letter of credit) that incentivises the borrower’s achievement of ambitious, predetermined sustainability performance objectives. A borrower’s sustainability performance is measured using sustainability performance targets (SPTs), which include key performance indicators, external ratings and/or equivalent metrics that measure improvements in the borrower’s sustainability profile. Categories of eligibility include renewable energy, affordable housing, sustainable sourcing, and energy efficiency.
- 2. Leases:** arrangements in which a lessee (the user) pays a lessor (the owner) for the possession and use of an efficiency measure or measures, which include capital and operating leases.

On the other hand, the **specialized financial mechanisms** can be divided into:

- 1. On-bill financing:** borrowers pay back the cost of efficiency improvements on their utility bill. On-bill financing provides a secondary business revenue for utilities, and a reduced up-front cost approach for lower cost retrofits or for equipment replacement for consumers.
 - 2. On-tax financing:** participants pay back clean energy investments in a specific tax, e.g. property tax, through a special assessment (applied by their municipality or other tax collector). An on-tax system, particularly if associated with property tax and transferrable with property, would tackle several barriers to deep-retrofitting, such as reducing (or eliminating) up-front costs, and removing homeowner age from the equation (elderly homeowners can face difficulties accessing traditional loans, given their age).
- 3. Savings-backed arrangements:**
- **Energy savings performance contracts (ESPC):** offered by energy service companies (ESCOs) that guarantee a pre-determined level of energy savings for the customer and are paid from the associated energy savings. The improvements are usually owned by the customer and may be installed with little or no upfront cost if the ESPC is financed. Typically, ESPCs include design, arranging finance, installation, maintenance, and monitoring of savings, as well as assuming the risk that the project will save the guaranteed amount of energy. With these mechanisms homeowners do not need to take on a bank loan (which would add to their debt) but instead pay a monthly service fee to the ESCO consisting of an investment repayment and an energy bill. ESPCs are recognized as instruments that facilitate procurement of innovative solutions and associated investments by municipalities.
 - **Energy service agreements (ESA):** agreements between a customer and the ESA provider who provides financing for the project and delivers energy savings (i.e., megawatt hours) at a negotiated price (less than retail rates for energy services). In this pay-for-performance, off-balance sheet financing, the ESA provider typically owns the equipment for the duration of the contract.
- 4. Other climate/sustainability bonds**
- **Green bonds:** enable capital-raising and investment for new and existing projects with environmental benefits. They are fixed-income instruments that are specifically earmarked to raise money for climate and

environmental projects. These bonds are typically asset-linked and backed by the issuing entity's balance sheet, so they usually carry the same credit rating as their issuers' other debt obligations.

- **Sustainable bonds:** bonds where the proceeds will be exclusively applied to finance or re-finance a combination of both green and social projects.

The **other mechanisms** that can be put into practice are:

1. **Subsidies:** benefits given to an individual, business, or institution, usually by the government. Subsidies can be direct (such as cash payments) or indirect (such as tax breaks).
2. **Blended finance mechanisms:** involve the strategic use of development financing for the mobilisation of additional finance towards sustainable development, mostly in developing countries, addressing unfavourable risk-return profiles of investment. This approach attracts commercial capital towards projects that contribute to sustainable development, while providing financial returns to investors, helping to broaden the total amount of resources available to developing countries, complementing their own investments to fill their sustainable development goal financing gap, and support the implementation of the Paris Agreement. The instruments considered as blended finance are usually linked to larger scale investments.

2.1 Financing developments at EU level

In 2020, the European Commission already considered that the leveraging of private financing and investments was fundamental to achieving the union's climate and energy targets. To this end, the Commission concluded that public funds should be used as catalysts for private investments, where the grants models have proven insufficient. Thus, the combination of grants and financial instruments, aligned with the development of energy efficiency lending products, were perceived as drivers for energy efficiency financing.

Also, the Commission's **European Green Deal** stressed the need to tackle energy poverty and ensure a fair transition, through designing measures for households unable to afford key energy services, including financing renovation schemes and therefore reducing energy bills. In October 2020, as announced in the European Green Deal, the Commission presented its **Renovation Wave strategy**. This strategy contained an action plan with concrete regulatory, financing and enabling measures, with the objective of at least doubling the annual energy renovation rate of buildings by 2030, fostering deep renovations in more than 35 million inefficient buildings - tackling **energy poverty** and improving the worst-performing buildings - and creating up to 160,000 jobs in the construction sector. As there are many barriers, at different levels, the plan has been designed to break them down with policy instruments, funding, and technical assistance, including finance via the **Next Generation EU** and other European Union and private funds.

The Next Generation EU recovery instrument, adopted late 2020, was created to support Europe's economic recovery from the coronavirus pandemic and build a greener, more digital, and more resilient future. The centre of this instrument is the **Recovery and Resilience Facility (RRF)**, a temporary instrument that offers grants and loans to support reforms and investments in the Member States. RRF funds are currently being provided to member states in line with their national recovery and resilience plans. The European Commission is funding up to 30% of the Next Generation EU by issuing **Next Generation EU Green Bonds**, in a move that is expected to make the Commission the largest green bonds issuer in the world. The RRF is also crucial for implementing the **REPowerEU** plan – the Commission's response to the socio-economic hardships and global energy market disruption caused by Russia's invasion of Ukraine.

Russia's unprovoked and unjustified military aggression against Ukraine has massively disrupted the world's energy system, causing higher energy prices and heightened energy security concerns. Launched in May 2022, the **REPowerEU** plan aims to reduce dependence on fossil fuel imports and accelerate the green transition, helping the European Union to save energy, diversify supplies, and smartly combine investments and reforms.

As the high energy prices forced consumers to pay more for fuel, heating, and electricity, it was clear that this did not affect the European population in the same way, as vulnerable households were having more difficulty paying their energy bills, and consequently were more exposed to energy poverty situations. Focusing on energy poverty

mitigation, the **Social Climate Fund (SCF)** was established in May 2023, in line with the European Green Deal. The SCF aims to provide funding to member states to **support vulnerable households**, including those affected by energy poverty, and vulnerable micro-enterprises by supporting investments for increased energy efficiency. Member states may use the SCF to support structural measures and investments in energy efficiency and renovation of buildings, clean heating and cooling, and integration of renewable energy, as well as in zero- and low-emission mobility solutions.

Also, the 2023 **European Commission recommendation transposing article 30** (on national energy efficiency funds, financing, and technical support of the “EED recast”) [10] specifically states that member states are required to promote energy efficiency lending products (as **green mortgages and green loans**) and ensure that they are offered widely by financial institutions and are visible and accessible to consumers. Member states are also required to adopt measures to facilitate the implementation of **on-bill and on-tax financing schemes** and encourage the establishment of loan guarantee facilities for energy efficiency investments. Moreover, the dialogue with public and private financial institutions is incentivised, namely, to **mobilise private financing** for energy efficiency measures and energy renovation. Furthermore, energy efficiency lending products should be made available to **low-income households**, affected by energy poverty and/or living in social housing, putting in place the adequate risk mitigation instruments. In this sense, specific provisions to address low-income households should be taken, as low-income households may not be able to afford loan payments at market rates. Thus, further financial support needs to be provided, such as **guarantees or subsidised public loans**, that can be combined with other funding streams and technical assistance and can be part of social security benefits, or an alternative or complementary way of providing social energy tariffs.

Recently, in 2024, the proposed recast of the **Energy Performance of Buildings Directive (EPBD)** directly linked inefficient buildings to energy poverty and social problems. Vulnerable households are particularly exposed to increasing energy prices, spending a larger proportion of their budgets on energy products. By reducing excessive energy bills, building renovation can prevent or lift people out of energy poverty. This is an opportunity to improve the situation of vulnerable households, assuring a fair transition towards climate neutrality. Therefore, it was identified that financial incentives and other policy measures should target **vulnerable households as a priority**, including people affected by energy poverty and living in social housing. Also, member states must ensure that the conditions for **renovation financing schemes** are sufficient to achieve national energy poverty mitigation targets, and the successful inclusion of energy-poor consumers and vulnerable households. Moreover, the policy measures may include the establishment of an **energy performance renovation fund**, to act as leverage to **increase private and public investments** for projects which improve the energy performance of buildings. Also, member states should provide financing and support measures in conjunction with other instruments such as the RRF, SCF and cohesion policy funds, including the promotion and simplification of the use of public-private partnerships² (PPPs). Member states and financial authorities should develop supporting measures to **facilitate** the uptake of **renovation loans** and **energy efficiency mortgages**, as well as the development of **innovative lending products** dedicated to deep renovation financing. The Commission and the European Investment Bank (EIB) will ensure access to finance at favourable conditions, facilitating the deployment of financial instruments and innovative schemes, namely an **EU renovation loan**.

² Public-private partnerships can be defined as a collaboration between a public authority and private company to deliver a public service or objective, offer the potential to mobilise private financing and leverage the expertise of private companies.

3 Case studies focused on Energy Poverty mitigation

This section intends to give a brief overview of European level initiatives related with financing schemes aimed at energy poverty mitigation, as well as a summary of the main Portuguese renovation and assistance programs, complemented with real experiences and insights from social and affordable housing municipal companies.

3.1 European case studies

The EPAH collected some concrete examples at the European level of case studies focused on **financing schemes directly aimed at mitigating energy poverty**, such as the examples in **Erro! A origem da referência não foi encontrada.**, which address some of the financial mechanisms mentioned above. The named mechanisms comprise grants (direct, on-bill), and access to funding, including private, national, regional and EU funding.

	Short description	Funding	Location
Cosy Homes in Lancashire (CHiL)	This scheme offered an accessible and straightforward way to access grants from energy companies and other sources to fund new heating measures, insulation, and renewable technologies in domestic properties. ChiL aimed to be the “One-Stop Shop for Warmth” offering help and assistance to Lancashire households. The local authority acted as the contact and referral service supporting people in finding funding towards energy efficiency measures and through the process, which included direct contact with energy companies to deliver the efficiency measures.	Private and national funds by the Green Homes Grant, Energy Company Obligation (ECO)	Lancashire, United Kingdom (Regional scale)
Dampoort renovates!	This scheme targeted a group of people who have purchased housing because it was the cheaper option compared to renting. Their property was often poorly insulated and in bad condition. Ten houses were identified, and the owner was offered the opportunity to apply for a 30,000 EUR grant to make the property safer and more energy efficient . The grant must be repaid if the owner decides to sell or rent out the property.	Local funds by the OCMW Gent (social welfare office Gent)	Gent, Dampoort, Belgium (Local scale)
Residential Energy Efficiency for Low Income Households (REELIH)	The project was created to tackle the effects of climate change and energy poverty, while improving health and quality of life of low-income homeowners living in apartment buildings. It helped to establish and develop an investment market for retrofitting to secure the financial and political support of governments and to place increased focus on improving existing buildings by working with the local communities. REELIH worked with banks and local authorities, creating an opportunity for low-income households to access funding , and helped to attract subsidies from local governments.	International funds from the United States Agency for International Development	Armenia, Bosnia and Herzegovina, and North Macedonia (National scale)
Hauts-de-France Pass Rénovation	Hauts-de-France Pass Rénovation is a technical and financial instrument implemented in 12 territories or communities of the region and designed by the regional Public Service for Energy Efficiency (PSEE). Founded on an innovative economic model, the PSEE advances the amount allocated to renovation works . Beneficiaries repay this advance in whole or in part through financial savings generated on their energy bill . It provides turnkey technical support coupled with an all-inclusive financial solution. The Pass Rénovation grants owners an advance on works of an average of 43,000 EUR . Once the renovation is completed, the owner repays the remaining amount thanks to a monthly payment that is less than or equal to the post-renovation energy savings .	European Fund for Regional Development (ERFD), ELENA (European Local Energy Assistance), Picardie Regional Council	Hauts-de-France, France (Regional scale)

Table 1 – Inspiring cases from across Europe to tackle energy poverty [3]

3.2 National case study – Portugal

Portugal faces particular challenges, as it must simultaneously alleviate summer and winter energy poverty in a country that has high rates of households facing energy poverty. This presents challenges (and opportunities) that are common to most Southern Europe countries. The 2023 Portuguese National Statistics Institute (INE) Survey gathered data on living conditions and income³ and determined that, regarding thermal comfort, 20.8% of the population lived in households with no financial ability to heat their homes. In 2022, Portugal was already in the bottom five of the EU-27 countries, with 17.5% of the population facing energy poverty, more than double the European average (9.3%). This situation is even worse if added to the 38.3% of the population living in households who cannot keep their homes cool.

In 2024 Portugal published *Estratégia Nacional de Longo Prazo para o Combate à Pobreza Energética 2023-2050* (ELPPE) [1], the **portuguese long-term strategy for combating energy poverty from 2023 to 2050**. The main goal of ELPPE is to eradicate energy poverty in Portugal by 2050, protecting vulnerable consumers and actively integrating them into the energy and climate transition, namely by setting concrete targets for energy poverty reduction and creating an *Observatório Nacional da Pobreza Energética*, the energy poverty national observatory. Thus, in addition to public policy instruments in the energy field, other instruments from different areas of action were defined, to be seen in an integrated and articulated way, within the scope of combating energy poverty. In this sense, several concrete funding schemes and supporting programs were set up to actively mitigate energy poverty. Following this, municipal housing companies, as entities close to vulnerable households and families facing energy poverty situations, are privileged channels to bring some of these programs into the field.

3.2.1 Programs to mitigate Energy Poverty

The Portuguese government established programmes directly aimed at vulnerable households and energy poverty mitigation. The main ones are as follows:

[1º Direito](#), the **1st right programme** aims to support the **provision of housing solutions** for people who live in unworthy housing conditions and do not have the financial capacity to bear the cost of access to adequate housing. The programme is aimed at the renewal of buildings and leasing, focusing on integrated and participatory approaches that promote social and territorial inclusion, through cooperation between policies and sectoral bodies, central, regional, and local administrations, as well as public, private and cooperative sectors. To apply, families must submit a request for housing support directly to their **municipality** and should be enrolled in the municipality's local housing strategy. The budget for this programme comes from the national recovery and resilience plan, which foresees an investment of 1,211 million EUR, which will help to meet the needs of at least 26,000 families by 2026.

[Reabilitar para Arrendar - Habitação Acessível](#), the **renewal for lease – affordable housing programme** aims to **finance renewal operations** of part of a building, buildings, or undertakings whose dwellings, at the end of the operation, are intended for affordable rental or rental with rents below the limits applicable under the programme of affordable lease (*Programa de Arrendamento Apoiado*). This programme has the financial support of the EIB and the Council of Europe Development Bank. Any person, natural or legal, of a public or private nature, including condominium administrators, who promote, individually or jointly, an operation and demonstrate that they have rights and powers over the property (that allow them to contract and execute the works and loans under the program), is eligible to apply.

[Vale Eficiência](#), the **efficiency voucher** is a financial incentive targeted to economically vulnerable families who may be affected by energy poverty. in the form of efficiency vouchers worth 1300 EUR plus VAT. Eligible households can apply for up to three of these vouchers. This allows eligible households to **improve the energy performance** of their home either by carrying out interventions in the building envelope or by replacing or purchasing energy-efficient equipment and solutions. There are several “passive interventions” such as thermal insulation of roofs, walls, or floors or replacing doors and/or windows, that can be put into place. “Active interventions”, as well, can be taken, namely heating and/or cooling systems and/or domestic hot water installation (heat pumps, solar thermal systems,

³ [National Statistics Institute \(INE\) - Living Conditions and Income 2023](#)

boilers, and biomass heat exchangers) and/or energy production systems using renewable sources (e.g. solar photovoltaic (PV)). The beneficiary families are assisted in acquiring an energy efficient solution, including its installation. The funds for this initiative are from the national recovery and resilience plan, and the technical support is given by ADENE – the Portuguese national energy agency, with the support of local energy agencies and municipalities. The goal is to support 100,000 families between 2021 and 2025, investing 130 million EUR.

Moreover, there are other national programs which, despite not being directly aimed at vulnerable households, also offer relevant financial incentives for buildings renovation, conducive to energy poverty mitigation, namely:

[Programa de Apoio Edifícios +Sustentáveis](#), a currently closed **support programme for more sustainable buildings** that was a financial incentive targeted at **owners of residential buildings** (single family/apartments). The eligible measures in this programme include efficient windows, insulation, renewable heating and cooling equipment, PV systems, water efficiency and bioclimate architecture. General eligibility criteria comprise the improvement of the energy performance of the housing unit, the need to use registered suppliers in several of the official platforms, and specific criteria dependent on each measure. For instance, efficient windows need to have at least A+ energy class according to the national CLASSE+ labelling scheme. This programme has had several editions/calls with considerable success, with increasing budgets available. The reimbursement is 100% from public funding, at a rate of approximately 85%, depending on the measures. A total of 189.6 million EUR was invested by applicants, with 122 million EUR reimbursed by the program. It is estimated that the measures introduced has the potential to achieve annual energy cost savings of 38 million EUR. This type of funding is based on a **reimbursement procedure** which implies that all costs are paid upfront and reimbursed if the application is eligible (up to the programme's own budget). Only those capable of making their own investment with a slight risk and who can navigate the electronic application procedure can apply meaning this may be of limited value to vulnerable families. The high funding rate (85% for most measures), the fact that monitoring and inspection is based mainly on invoices and pictures before and after the project, and the pre-existence of other verification schemes (verified contractors and labelling systems) are enablers of the system.

[IFRRU 2020](#), the **national financial instrument for urban renewal and revitalization**, provides **loans under favourable conditions** compared to those existing on the market, aiming for the complete renewal of buildings, including energy efficiency improvement solutions. The buildings covered by this programme must be more than 30 years old and located in pre-defined urban regeneration areas. As the IFRRU 2020 focus is the renewal of buildings, all types of beneficiaries are admitted if they own the building that is to be rehabilitated. There are also no restrictions on the type of use to be given to the building. Since the main goal is the reduction of primary energy consumption and energy bills, all building renewal operations supported by IFRRU 2020 must introduce an improvement in the energy performance, and an integrated solution must be designed (i.e., one that includes the best combination of the various energy efficiency measures, and not just isolated measures). This will allow achieving the best relationship between the cost of the investment and the expected benefit. Therefore, it is necessary to carry out an energy certification (via an energy performance certificate) before and after the intervention, to assess the energy efficiency improvements. The IFRRU 2020 support is given in the form of a loan granted by banks (selected through a public tender, published in the Official Journal of the European Union), **consisting of public and private funds**. Thus, the risk shared between the public and private sector allows optimal finance terms to be offered. The funds allocated come from European funds, the state budget, the EIB, the Council of Europe Development Bank (CEB), and private banks' own funds. Since 2017, a total of 1,428 million EUR has been agreed, which corresponds to 220 fully renovated energy efficient multi-unit residential buildings and about 230 non-residential buildings.

3.2.2 Social & affordable housing municipal companies' experiences

Social and affordable housing municipal companies are mainly in charge of the promotion of social housing, the execution of and/or participation in urban renewal actions, as well as the management of all properties that the companies hold or whose management is granted to by other entities. Their mission therefore corresponds, in general, to the management of the municipality housing, including the allocation of accommodation, from a public service perspective and improving the quality of life of the population. In this sense, these entities are close to vulnerable households and families facing energy poverty situations.

A series of meetings were conducted with five municipal companies, to gain insights on programmes which have shown potential in alleviating energy poverty via hybrid green financing solutions. Overall, it can be said that Portugal's recovery and resilience plan has been the main financing stream for housing construction and/or renovation. However, the general feedback is that, despite the support being considered adequate to meet the current needs, the bureaucracy associated may be a barrier to accessing the funds. Moreover, **typically there is no close cooperation between banks/financial institutions and these municipal companies**. Therefore, the housing construction/renovation budget comes entirely from either municipal or EU/government budget (public financing).

Also, often municipalities promote supporting programmes that are specific to their needs, and that exist as a complement or in parallel to established national incentives and programmes. Concretely, Domus Social EM from the municipality of Porto established, through the municipality, a **public-private partnership** with a private real estate promoter to rehabilitate one of its neighbourhoods. This neighbourhood comprised about 100 affordable rental apartments, which had been constructed around the 1950s and had high physical and environmental degradation, needing deep renovation. The municipality handed over its land property rights, and the promoter advanced all the necessary renovation investments. The promoter also had to demolish the apartment blocks that could not be renovated, reallocating their inhabitants. After this, a new neighbourhood was built, comprising 70 apartments with A+ energy performance certificates. The construction of buildings for the private market was not initiated until after the affordable rental apartments were delivered, which took about 18 months. The private buildings were constructed on the remaining land and made the investment profitable for the private developer. This process was overseen and operationalized by Domus Social EM.

A summary of the main results of the meetings held can be found in Table 2 below.

	Mission	Financing programs currently enforce
<u>GEBALIS</u>	The mission of GEBALIS includes the promotion and management of social housing properties, as well as the management of other housing assets that the municipality allocates for renting under the conditions to be defined by the Lisbon municipality. GEBALIS is accountable for the management of 66 municipal public housing neighbourhoods (23 thousand dwellings with a resident population of around 64 thousand people), these responsibilities also include dwellings' repair and conservation activities.	<ul style="list-style-type: none"> • Recovery and resilience plan through <i>1º Direito</i>, a housing support program that aims to promote housing solutions for people who live in unsuitable housing conditions and do not have the financial capacity to bear the cost of adequate housing (Next generation EU budget) • Direct subsidies to housing rental aimed at vulnerable families (municipality budget)
<u>GAIURB</u>	GAIURB is responsible for the territorial and urban planning, as well urban renewal, housing, and social development, as well as promotion of local development within the municipality limits. GAIURB currently has 3 123 social housing units under its management, supporting 3 025 families.	<ul style="list-style-type: none"> • Recovery and resilience plan through <i>1º Direito</i>, a housing support program that aims to promote housing solutions for people who live in unworthy housing conditions and do not have financial capacity to bear the cost of an adequate housing (Next Generation EU budget) • Affordable rental programme aimed at households whose global annual income is equal to or greater than 10,640 EUR (if the tenants' income is lower than this amount, they should be grant-funded via another social housing programme), and where the dwelling presents conditions of indignity, living in precarious, unsanitary, and unsafe conditions, overcrowding or inadequacy (municipality budget) • Direct subsidies to housing rental aimed at vulnerable families. This programme is currently under revision to allow integration with established state rental supports (municipality budget).

	Mission	Financing programs currently enforce
<u>BRAGAHABIT</u>	BRAGAHABIT is dedicated to the renewal of urban buildings and management of social housing, aiming to minimize the social and economic difficulties of the most disadvantaged citizens. BRAGAHABIT is responsible for managing around 700 public housing units (less than 1% of housing in the municipality).	<ul style="list-style-type: none"> • Recovery and resilience plan through <i>1º Direito</i>, a housing support program that aims to promote housing solutions for people who live in unworthy housing conditions and do not have financial capacity to bear the cost of an adequate housing (Next Generation EU budget) • Direct subsidies to housing rental and acquisition aimed at vulnerable families (municipality budget) • The municipal programme for energy poverty mitigation – which runs complementary to the national “energy efficiency voucher”. This programme aims to support families who do not reside in social housing but are in situations of economic and financial fragility and potential energy poverty. It also contributes to the energy performance improvement of these homes, as well as their habitability conditions (municipality budget) • Other financial supports such as tax benefits for renovations, subject to an increase in the energy class of the energy performance certificate (municipality budget)
<u>MATOSINHOSHABIT</u>	MATOSINHOSHABIT’s mission is to perform social, financial and asset management of housing (and other) properties of Matosinhos municipality. MATOSINHOSHABIT manages a stock of 4,326 housing units, and is also accountable for maintenance and renovation of this stock.	<ul style="list-style-type: none"> • Recovery and resilience plan through <i>1º Direito</i>, a housing support program that aims to promote housing solutions for people who live in unworthy housing conditions and do not have financial capacity to bear the cost of an adequate housing (Next Generation EU budget) • Direct subsidies to housing rental aimed at vulnerable families,

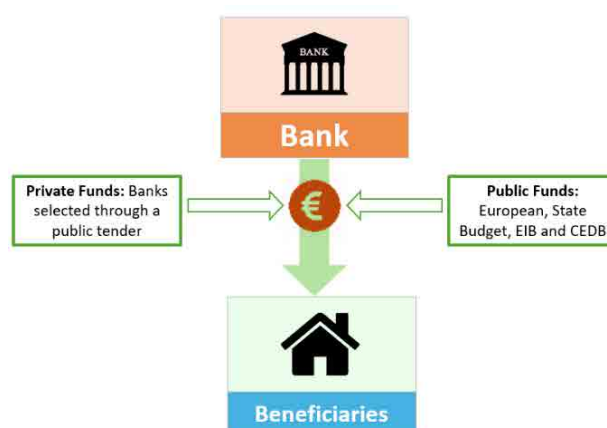
	Mission	Financing programs currently enforce
		<p>which currently supports around 800 families (municipality budget)</p> <ul style="list-style-type: none"> • Other financial supports as tax benefits, if there is an increase in the energy class of the energy performance certificate (municipality budget)
<u>DOMUS SOCIAL</u>	<p>DOMUS SOCIAL's mission is to improve Porto's city social housing, management of the municipal public housing stock, maintenance and conservation of all real estate assets, equipment, and municipal infrastructure, as well as the elaboration, development, and implementation of social housing projects. DOMUS SOCIAL, EM is responsible for around 50 neighbourhoods, with 13,000 houses, which accommodate about 30,000 residents (12% of the municipality's population).</p>	<ul style="list-style-type: none"> • Recovery and resilience plan through <i>1º Direito</i>, a housing support program that aims to promote housing solutions for people who live in unworthy housing conditions and do not have financial capacity to bear the cost of an adequate housing (Next Generation EU budget) • <i>Porto Solidário</i> municipal social emergency fund, a rental support program aimed at people or families with financial difficulties or who are in a housing emergency (municipality budget) • <i>Casa como Nova</i>, a self-maintenance programme which seeks to involve municipal tenants in efforts to maintain their homes (that are under concession), ensuring (through protocols signed with private companies) access to building materials at lower prices (around 75% less than the market price) (municipality budget)

Table 2 – Social and affordable housing municipal companies (interviews held between November 2023 and January 2024)

4 Replicable financing mechanisms to alleviate energy poverty

The European Commission's recommendations and forthcoming recast Energy Performance of Buildings Directive legislation already foresee the development of financial products such as green mortgages and green loans, while promoting the dialogue with public and private financial institutions to mobilise private financing for energy efficiency measures and energy renovation. Moreover, vulnerable households should be given priority through financial incentives, and given access to finance at favourable conditions. At the same time renovation funds can act as leverage for increasing private and public investments.

Despite the important role that grants, and direct subsidies play in addressing energy poverty, **loans** may have a longer reach. In this sense, the structure used by the Portuguese IFRRU 2020 scheme is a good example of **public and private funds integration**. In this case, the support is given in the form of a loan granted by banks, where the loan consists of public and private funds. Therefore, the sharing of risk between the public and private sector **unlocks better financing conditions**. Nevertheless, it should be considered that in a scenario of high interest rates, an exclusively loan-based product may not be sufficient. Consequently, with the aim of reinforcing its attractiveness, it will be important to consider the introduction of a **combination of a loan component with non-refundable supports**, either in the form of bonuses based on results, or converting part of the loaned capital into non-refundable incentives.



Additionally, the Domus Social EM experience is a good example of a PPP that has served low-income households well. The municipal land was monetised, and all the risks related to the financing, conception, design, temporary relocation, and construction of the new neighbourhood were fully taken by the developer. This way, all municipal tenants living in the area were able to remain in their homes, with new homes built to meet the housing need of more families. The renewal of this neighbourhood proved to be a successful urban solution, due to its unique contribution to the city's new development models. It integrated economic aspects, combining social and environmental concerns, also allowing the construction of **high-quality social housing** (the first neighbourhood in the country with all homes with an A+ energy rating), making the city more modern and sustainable.

Moreover, when municipal budgets are needed to complement national or EU funds (as the supporting mechanisms are not adequate), this can also be done through PPPs, via protocols with the private companies (namely, as in the “*Casa como Nova*” initiative), or through public and private funds integration. Overall, the involvement of private finance seems inevitable, and the challenge is to develop investment opportunities that are attractive to investors, but with win-win potential for investors, households, and planet alike.

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