



Energy
Efficient
Mortgages
Initiative

Roadmap to EEM Market Development: The EEMI Ecosystem

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Contents

Contents	2
Executive Summary	3
1. Introduction.....	4
2. The Research	6
2.1 Consumer Research.....	6
2.2 Market Research.....	8
2.3 Value Chain Analysis.....	11
3. The EEMI Ecosystem.....	17
3.1 Pillar 1: The Simulator	17
3.2 Pillar 2: The Financing Options	22
3.3 Pillar 3 – The Suppliers	27
4. The Italian Case.....	29
5. Conclusion	31
Bibliography.....	32



Executive Summary

The decarbonisation of the EU's building stock requires innovative private financing solutions as a complement to public sector grants and subsidies to meet the unprecedented investment volumes, as well as a robust and comprehensive value chain to deliver the needed improvements at pace and as efficiently as possible.

Based on consumer research, market research and value chain analysis conducted in Scotland and the Province of Trento (EEMI market demonstrators), over the course of two and a half years, the Energy Efficient Mortgage Initiative has boiled the findings down into core elements which are being brought together in an EEMI 'ecosystem'. The EEMI Ecosystem is intended to guide consumers towards financial and technical solutions which support them in the energy renovation of their homes. In essence, by combining market innovation, digitalisation and green financing instruments across the whole value chain, the Ecosystem will optimise the end-to-end customer journey and experience, deploy market interventions and partnerships that support delivery and maximise benefits for consumers.

Additionally, the Ecosystem will provide significant support to financial institutions and the financial system more broadly in 'financing green' and 'greening finance' by:

- Delivering a continuous flow of material data for lending institutions, investors and SMEs on building energy performance (improved EPCs, primary energy demand), EU Taxonomy alignment and ESG counterparty assessment and ratings.
- Favouring the implementation of market best practices to secure gradual but continuous market transition towards and alignment with EU legislative requirements.

This Report provides a 'roadmap' to energy efficient mortgage market development and to the creation of a seamless customer renovation journey by way of a three-pillar structure, comprising a consumer simulator, access to financing options and a directory of accredited suppliers. Underpinning this three-pillar structure is an extensive body of research which is also described in this Report. Over the weeks, months and years ahead the EEMI will continue to develop, populate and refine this Ecosystem, and roll it out across European jurisdictions and beyond.

1. Introduction

The European Union (EU) has set itself ambitious climate change targets as a response to the commitments it and its Member States made on signing the Paris Agreement in 2015. Under the European climate law, EU Member States are required to reduce greenhouse gas emissions by at least 55% by 2030 and make the EU climate neutral by 2050.

The production and use of energy account for in excess of 75% of the EU's greenhouse gas emissions, making energy efficiency a key priority in meeting the EU's 2030 and 2050 targets. The scale of investment needed to meet the energy savings targets alone is estimated at more than €260 billion p.a.¹. Significantly, three quarters of this investment is accounted for by energy efficiency in buildings². Against a background of very low annual rates of renovation of the building stock across Member States, decarbonising the EU's building stock through renovation is at the heart of the EU Green Deal³, intended to deliver on the clean energy transition.

The decarbonisation of the EU's building stock requires innovative private financing solutions as a complement to public sector grants and subsidies to meet the unprecedented investment volumes, as well as a robust and comprehensive value chain to deliver the needed improvements at pace and as efficiently as possible.

At this time of change and opportunity, the Energy Efficient Mortgages Initiative (EEMI) has taken the lead in 'joining the dots' and in seamlessly integrating all market participants into a new value chain. Indeed, there has been a growing realisation that finance alone will not address the huge challenges facing us, but that a robust and integrated ecosystem to guide consumers towards financial and technical solutions which support them in the energy renovation of their homes holds the key to meeting the EU's targets in this area. Over the course of two and a half years, the EEMI has researched, analysed and consulted with stakeholders across the entire value chain, including lenders, investors, start-ups, SME, utilities and public authorities, in pursuit of the energy efficient mortgage market development and a seamless customer renovation journey to support the climate transition.

Building on the findings of the research and analysis mentioned above, the present Report summarises the findings that have helped identify the key pillars of this 'Ecosystem' and then describes each of these, which are currently under construction, in detail and as potential best practice for market participants in their efforts to develop energy efficient mortgage products and support their customers in the renovation of their homes.

It is worth noting here that the findings and outcomes described below do not represent an exhaustive account of the achievements under the EEMI. Rather, what is described below represents either core findings which have directly contributed to the design of the three-pillar Ecosystem or refers to outcomes which will support the smooth and seamless 'back office' functioning of the Ecosystem. There is however a wealth of additional resources which in their own way are also supportive of the Ecosystem, whether this be analysis of the way in which the credit risk mitigating effect of building energy performance could be integrated in the calculation of banks' capital requirements, GDPR compliance guidance linked to the disclosure of EEM data under the EEM

¹ https://ec.europa.eu/commission/presscorner/detail/en/ip_20_17

² https://ec.europa.eu/clima/system/files/2018-11/initiative_7_smart_en.pdf

³ https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en



Roadmap to EEM Market Development: The EEMI Ecosystem

label or an assessment of optimal public support mechanisms to complement and leverage on private finance, as examples. This additional body of research and analysis can be found in the EEMI Knowledge Hub.⁴

⁴ <https://energyefficientmortgages.eu/knowledge-hub/>

2. The Research

2.1 Consumer Research

The 2018 EEMI consumer research⁵ conducted in Germany, Italy, Portugal, Spain, Sweden and the UK, and later deepened and extended to Hungary, the Netherlands and Romania⁶ in 2022, has provided valuable insights into the appeal and relevance for consumers of: (1) specific product features and (2) customer journey characteristics.

It is the findings around the customer journey which have helped shape the overall design of the EEMI Ecosystem. Indeed, while the research around product features provides useful insights for banks in designing appropriate products, a commercial decision which is at the heart of individual banks' commercial strategies, the customer journey insights lend themselves to the design of broader, higher-level characteristics of the customer journey which can be integrated into deliver a blueprint for use and, if necessary, adaptation, across the EU and potentially beyond:

- Across markets consumers are more ready than ever for energy efficiency conversations, climate change is becoming a mounting concern and there is a sense of urgency. Benefits of energy efficiency measures are also becoming clearer in terms of financial and environmental impact.
- Intent/desire to make energy efficiency improvements is widespread, but willingness to act or compromise is low. There are high barriers since energy efficiency improvements are perceived as expensive.
- Across European markets, there is a need for flexibility and transparency in the development of EEM. There are significant differences between markets in terms of context and outlook, and within markets households are at different stages in their journey, pointing to the importance of a highly flexible proposition which responds to the diverse needs.
- Simplicity is a key requirement. Especially in eastern Europe, where there can be greater cynicism around the type of bureaucracy implied by things like EPC certification. The easier the process, and the more control homeowners can have, the greater the reassurance.
- There are clearly two acceptable routes to energy efficiency improvement installation: a fully managed project and a do-it-yourself project. Both had equal appeal to respondents and even with the added requirement for the customer to take out a performance guarantee under the second option, the results suggested that appeal was still likely to be high.
- There is scope for government/EU initiatives to aid in take up of green mortgage products – the impact of a clearly communicated initiative can be seen in Italy with the Superbonus scheme⁷, which combines with the benefits of the EEM to give consumers a wide-ranging, appealing proposition.
- There was good evidence that a partnership involving banks and energy companies working together to deliver the EEM would provide customer reassurance. The EEM could be marketed as a bank/energy company partnership from day one. However, other innovative partnerships between other market actors may also be effective in engaging consumers, although these were not tested in the studies.

⁵ <https://energyefficientmortgages.eu/wp-content/uploads/2021/07/Consumer-Research-DE-IT-SE-UK-2018.pdf> & <https://energyefficientmortgages.eu/wp-content/uploads/2021/07/EON-Green-Mortgages-Debrief-with-appendices-051218.pdf>

⁶ <https://energyefficientmortgages.eu/wp-content/uploads/2022/04/EeMMIP-2022-Complete-Report-Consumer-Insights-Green-Mortgage-Propositions-Feb-2022.pdf> & <https://energyefficientmortgages.eu/wp-content/uploads/2022/04/EeMMIP-2022-Appendix-Summary-Insights-per-country-Green-Mortgage-Propositions-Feb-2022.pdf>

⁷ <https://www.governo.it/it/superbonus>



Roadmap to EEM Market Development: The EEMI Ecosystem

It is these latter insights which have helped shape the design of the EEMI Ecosystem from a consumer perspective – more on this later.

2.2 Market Research

During the course of the EEMI, a key of focus has been on the identification of the fastest and most efficient way of rolling-out EEM products across EU jurisdictions from the perspective of the market, in other words, lending institutions. This has involved developing a deep understanding of the obstacles to the accelerated and widespread roll-out of EEM as well as of the potential solutions.

In-depth research, analysis and consultation with EEMI lending institutions and other relevant stakeholders provided very useful insights across the key elements in the energy efficient mortgage value chain, namely:

- Origination/retail
- Risk management
- Marketing
- Partnerships (development of synergies with other stakeholders)
- Funding & investor relations
- IT Solutions - data
- Development of technical expertise

The analysis and research across these elements, which is summarised in a separate Report in this series⁸, gave rise to the following insights which have helped shape the three pillars of the EEMI Ecosystem (the full set of insights, including obstacles and potential solutions, can be consulted in the relevant Report):

Origination/retail: In this area, lending institutions considered challenges and potential solutions in relation to the customer journey, energy efficiency criteria and energy efficiency monitoring. For the purposes of building the Ecosystem itself, exchanges with lending institutions provided the following valuable insights into the customer journey:

Lending institutions identified the following concerns:

1. The customer journey process is potentially slow and complicated.
2. There is administrative burden for both customers and banks in terms of energy audit and certification costs if not externalised.

The following were identified as key priorities to address these criticalities:

1. Firstly, the identification of a solution that includes existing products and schemes, securing flexibility within the framework.
2. Secondly and most importantly, the design of a simple, transparent and time-efficient process. This entails clearly defining and optimising, from a cost perspective, the process of capturing and integrating the Energy Performance Certificate in lending processes.

Further consultation with lending institutions pointed to the following potential solutions:

1. One-stop shops: As banks are primary point of information and decision point for the borrower, banks could play a role of information hub provided they have easy and transparent access to relevant information for EE financing in housing (i.e. complementary funding schemes, fiscal regimes in places, partnerships available, first cost/benefits analysis ...).

⁸ <https://energyefficientmortgages.eu/wp-content/uploads/2023/01/Research-into-market-appetite-for-Energy-Efficient-Mortgages.pdf>

2. Merge energy performance and valuation expertise: In order to streamline the process, saving both time and costs, it could make sense to merge the valuation reports and building energy performance assessment. This would entail integrating building energy performance criteria into valuation reports, through instructions to valuers.

For the sake of completeness, it is worth mentioning as an aside here that, on the subjects of energy efficiency criteria and energy efficiency monitoring, the EEMI also conducted valuable research to establish a methodology to link the 15% best in class EU Taxonomy requirement with primary energy demand⁹ in order to support lending institutions in securing Taxonomy compliance over time.

Risk management: One of the underlying premises of the EEMI is that building energy efficiency is negatively correlated to credit risk, i.e. the more energy efficient a building is, the lower the credit risk for the bank of the underlying mortgage financing. The potential risk mitigating effect of building energy performance is clearly relevant from a risk management perspective, as a result of its impact on probability of default and loss given default, two measures of riskiness. This correlation has been recognised as being central to the business case for lending institutions and has the potential to drive a virtuous circle of benefits for all market participants. It was against this background that the EEMI conducted extensive research into the correlation between building energy performance and credit risk.¹⁰

Discussions with lending institutions pointed to four elements which are critical to the risk management associated with energy efficient mortgages, namely those which are specifically relevant to the calculation of borrower default probability and loss given default, driven by the loan-to-value (LTV) of the loan:

- Creditworthiness Assessment
- Property Valuation
- Energy Performance Risks
- Capital Requirements and impact on Risk Weighted Assets

The particular challenges highlighted by lending institutions as associated with these elements typically focus on an inability to account for energy savings in risk parameters, uncertainties around energy performance and their impact on risk parameters and lack of data.

Potential solutions put forward by lending institutions consequently focussed on efforts to improve data availability, as well as recommendations around the integration of energy performance data in valuation processes and reports. Lending institutions also pointed to the potential value of an easy-to-use energy savings calculator at European level that can quantify the energy saved in monetary terms were particularly valuable. These indications were particularly relevant in inspiring the EEMI Ecosystem and in particular shaping the **first and second pillars**, the EEMI simulator and the EEM Label – more on these in the next section. They have of course also supported additional EEMI actions, which will necessarily support a smooth and effective Ecosystem focussed on supporting the management of information flows within banks' risk management

⁹ <https://energyefficientmortgages.eu/wp-content/uploads/2022/12/Percentage-distribution-of-primary-energy-Ep-values-in-the-Italian-national-building-stock-1.pdf>

¹⁰ <https://energyefficientmortgages.eu/wp-content/uploads/2021/07/BE-IT-NL-UK-Correlation-Analysis.pdf>, <https://energyefficientmortgages.eu/wp-content/uploads/2021/07/Italian-Correlation-Analysis.pdf> & <https://energyefficientmortgages.eu/wp-content/uploads/2021/07/Extended-Dutch-Correlation-Analysis.pdf>

processes through a variety of data templates¹¹, as well as guidance to the valuation profession on integrating building energy performance in property valuations¹², to name but a few.

Marketing: Making consumers aware of the availability of EEM and helping them to understand their potential was identified by lending institutions as the first step to stimulating market development. Extensive exchange between lending institutions in this area pointed to a large number of perceived challenges firstly in relation to consumer awareness, but also in relation to targeting, product profile, communication/product awareness and banks' reputation and branding. Given the nature of marketing activities as being closely associated with banks' commercial strategies, these insights are particularly relevant for individual lending institutions, however they also offered important guidance which partially shaped **pillar 2 of the Ecosystem** built around the EEM Label.

Funding & Investor Relations: The funding mechanisms behind the mortgage portfolio and the investors who invest in these debt securities will be key to the long-term success of a market in EEM. Discussions with lending institutions and reports from other stakeholders¹³ suggested that a lack of eligible assets to back green (covered) bonds represents an obstacle to the further development of the green bond market. Alongside this were concerns about a lack of data availability, standardisation and disclosure. The potential of an ecosystem to support the accelerated and sustained origination of EEM has the potential to progressively respond to the challenge of insufficient assets by actively encouraging the purchase of energy efficient properties or promoting energy efficient renovation of existing buildings. It was this fundamental link between the origination and funding sides of the mortgage business that provided further confirmation of the value of the EEMI ecosystem and in particular **pillar 1, the EEMI simulator, and pillar 2, the EEM Label**, which support standardised data collection and disclosure.

It & Data: Remaining on the theme of data, lending institutions have long pointed to the fundamental role of data in the deployment of a robust EEM product and sustained market development. Lending institutions variously highlighted different definitions of energy efficiency across and within EU countries, the lack of a standardised framework for data collection at mortgage origination and short sample histories when data are potentially available as challenging data availability, accessibility and usage in recent years. Lending institutions expressed concerns about the resources required to integrate ESG considerations into IT systems. As above, the potential for an ecosystem to supply and facilitate the collection and disclosure of EEM data provided important validation of plans in this direction and reinforce, once again, the value of **pillars 1 and 2**, as suggested in the previous section.

Partnerships: Once again, the findings of the customer research described above and the outcome of dialogue with lending institutions in the context of the EEMI align, this time on the value in an holistic approach to EEM founded on partnerships between relevant stakeholders, including lending institutions, energy companies and SMEs, for example, to provide an integrated product offering, which delivers a seamless and simple process for financing and carrying out building energy renovation, including necessary certifications, ensuring an optimal customer journey. A variety of different partnerships were identified by lending institutions as being supportive of market development:

- Government partnerships
- Partnerships with utility providers

¹¹ <https://energyefficientmortgages.eu/knowledge-hub: See EEMI Master Template & https://energyefficientmortgages.eu/wp-content/uploads/2021/07/EEMI-Master-Template-Explanatory-Documen.pdf>

¹² <https://energyefficientmortgages.eu/wp-content/uploads/2021/07/EEM-Property-Valuation-Guidelines.pdf>

¹³ <https://sustainabonds.com/gss-covered-growth-seen-easing-as-asset-constraints-bite/>

- Partnerships with energy experts

These insights speak directly to the objective of designing and deploying the EEMI Ecosystem bringing together a wide variety of relevant market stakeholders and have helped build the foundations of **pillar 3 of the Ecosystem** focussed on providing access to accredited suppliers.

Technical experts: With the holistic approach described above in mind, a carefully selected value chain of actors is central to supporting the roll out of EEM and seamless end-to-end customer renovation journey. Lending institutions pinpointed the inclusion of technical experts in the value chain as being crucial to the deployment of efficient and robust products and related infrastructures, particularly since the specific nature of building energy performance is not a competence of the banking industry. High costs related to multiple experts involved in the renovation process, as well as reliability of these technical experts were highlighted as key challenges to be addressed, and building energy passports facilitating desk-top due diligence, training and certification were highlighted as potential solutions. Once again, these insights provided invaluable guidance in designing **pillar 3 of the Ecosystem**.

2.3 Value Chain Analysis

Significantly, the research and analysis conducted under the EEMI over the last two and a half years has been supported by real testing through two market demonstrators led by the Scottish Government and the Autonomous Province of Trento in their respective jurisdictions. The purpose of these demonstrators was to provide the environments in which to align the incentive chains among all market participating actors, including amongst others, the following players: lending institutions, investors, regulators, energy assessors, utility companies, contractors, valuers, and consumers / borrowers. The overall objective was to present the perspective of national and regional authorities in accelerating the much-needed investment and financing in Energy Efficiency and heat decarbonisation measures, support other EU jurisdictions in the development of their own market frameworks and provide examples of how this might be done. Inevitably, these actions will not only underpin the successful operation of the EEMI ecosystem across jurisdictions but also offer useful and relevant guidance to shape it in the first place.

By way of a sequential approach, the Scottish Government and the Autonomous Province of Trento first set about identifying the key pillars¹⁴ of the whole value chain as experienced by a consumer during their customer journey in undertaking an energy efficiency renovation of their properties, and the key attributes (see figure 1 below) that each of these pillars require in order to secure successful market development. These elements are considered as being supportive of the creation of a broader market framework that allows financial investment via mortgages and other potential financial products to be efficiently and effectively delivered.

¹⁴ <https://energyefficientmortgages.eu/wp-content/uploads/2022/07/Technical-Report-on-the-ecosystem-mapping-and-its-analytic-representation.pdf>

Delivery mechanisms, Skills & Supply	<i>To provide support and actively promote the opportunities of the market in energy efficiency in buildings for companies in the jurisdictions, as well as ensuring that the quality of the work carried out by the supply chain is of a high standard and that installers are suitably qualified</i>
Branding, marketing & communication	<i>To build communications that motivate owners and occupiers to access the advice and support on offer, based on a strong brand for the Programme that inspires trust and raises awareness, as well as targeted messages for each sector that make the case for improving energy efficiency.</i>
Advice & Information	<i>To provide all households with access to good quality, independent advice and information on improving the energy efficiency of their property and reducing their fuel bills.</i>
Assessment	<i>To undertake an assessment and provide an action plan that records both the improvement targets and the measures that will be undertaken to meet them</i>
Finance	<i>To catalyse financing mechanisms, for example, grant and loan funding, fiscal advantages, across different tenure and sectors to support improvements to the local building stock.</i>
Quality Assurance & Consumer Protection	<i>To ensure robust consumer protection, focussed on high standards of quality, customer care, competence, skills and training, and health and safety.</i>
Monitoring & Evaluation	<i>To monitor and evaluate progress to ensure that aims and objectives are met. This monitoring and evaluation should allow for adaptation and flexibility where necessary.</i>

Figure 1: Key pillars of the energy renovation value chain & their attributes (Source: [EeMMIP](#)).

In the second step of the market demonstration, the Scottish Government and the Province of Trento investigated how these specific pillars are being applied and developed within their respective jurisdictions and identified “best practice” examples of energy efficiency market development, together with challenges that may exist¹⁵.

Tables 1 and 2 below provide a summary of key activities undertaken in the jurisdictions of Scotland and the Province of Trento that support each of the key seven pillars described to successfully develop and build a customer journey for decarbonisation and the retrofit of buildings.

Area Objective	Best Practice Examples in Scotland
Delivery mechanisms, skills and supply	Scotland uses a combination of both National (Government run) and locally supported (Local Authority supported) delivery mechanisms to support the domestic & SME sectors as well as those in fuel poverty.
Branding, Marketing and Communications	Scottish Government has developed a strong brand for its programmes that inspires trust and raises awareness. It learns from and builds upon successful

¹⁵ <https://energyefficientmortgages.eu/wp-content/uploads/2022/08/Designing-an-optimal-Energy-Efficient-Mortgage-value-chain-%E2%80%93-lessons-from-Scotland-and-the-Autonomous-Province-of-Trento.pdf>

	marketing campaigns and looks for opportunities to promote the programme and raise awareness of energy efficiency
Advice & Information	Advice is offered at both national and area-based levels, to the domestic and non-domestic sectors. Advice to homeowners can be accessed in a variety of ways, including online, via telephone and, if needed, face-to-face. Advice services are procured from third part organisations.
Assessment	There are concerns around the application, limitations and quality of EPC-based building assessments for purposes such as setting standards. A robust assessment of the issues raised around EPCs is needed to ensure these issues are investigated, responded to and, where appropriate, addressed through further review. A strategic examination of EPCs and their underlying calculation methodology is underway.
Finance	Financing presents a significant challenge to Scotland where £33bn is needed to decarbonise Scotland's buildings and direct Scottish Government support is limited £1.8bn over the next 4 years. Some financing mechanisms are provided at a UK government level, with local specific support in certain areas. Scotland has certain devolved powers that can support heat decarbonisation policy, but several areas are under UK Government control.
Quality Assurance & Consumer protection	Establishing trust in Energy Efficiency is considered key to ensure that products and services provided under any programme are of the highest quality. The Scottish Government intends to achieve this by putting in place robust quality assurance requirements at every stage of the delivery process from the marketing and communications to the assessment and installation. A short life working group has been established to address this area.
Monitoring & Evaluation	<p>Monitoring of progress is undertaken via periodic publication of Climate Change updates which occur every 4 years. Additionally, certain aspects of energy efficiency improvement are reflected in an annual review called the Scottish House Condition Survey.</p> <p>Scottish Government will be publishing a monitoring and evaluation framework which is ready for implementation monitoring and measurement of outcomes, capturing the impact that programmes have on people and communities.</p>

Table 1: Best Practices from Scotland across 7 pillars to develop and build a customer journey for decarbonisation and the retrofit of buildings

Area Objective	Best Practice Examples in Province of Trento
Delivery mechanisms, skills and supply	All the critical actors involved in the retrofitting process have been collaborating across the board, building new strategic relationships for energy efficiency deployment. Participants have focussed on the existing obstacles to energy efficiency delivery, such as stimulating the local production chain and enterprise networking, as well as proposing and coordinating information and training initiatives, amongst others
Branding, Marketing and Communications	The Province of Trento has seen the use of banks as being crucial to providing information on the initiatives available for energy efficiency improvements. They are seen as crucial actors to stimulate the energy efficiency market.

Advice & Information	The province of Trento's main advice and information service for decarbonisation improvements is delivered by way of a dedicated website which provides details on both national and provincial financing options and funding channels that can be activated.
Assessment	Trento has implemented a Provincial Environmental Energy Plan ('PEAP') that considers various types of interventions to find the most cost optimal interventions and combinations that might be applied to the Province of Trento's buildings.
Finance	In Italy, and the Province of Trento, homeowners are entitled to a tax credit of up to 110% on the cost of upgrading their home, such as installing insulation systems, heat pumps and solar panels etc. Alongside this, there has been extensive development of green loans and other initiatives.
Quality Assurance & Consumer protection	In the areas of urban planning, regulatory plans and landscape protection, the Province has developed defined KPIs. These have been defined to promote sustainable and durable development, incentivising robust redevelopment techniques, and limiting the use of new resources.
Monitoring & Evaluation	Since 2010 the Province has been recording the number of buildings that have been refurbished, which helps to keep track of progress in building energy efficiency. To facilitate energy efficiency analysis, the Province built an open-access EPC database. The dataset is public, and it gathers all the necessary information related to the geo-localisation of the building, physical characteristics, existing energy systems and related energy performance.

Table 2: Best Practices from Province of Trento across 7 pillars to develop and build a customer journey for decarbonisation and the retrofit of buildings

An interesting finding from the analysis conducted is that there are similarities in the solutions adopted in Scotland and the Province of Trento for particular pillars of the customer journey. For example, the use of websites for the provision of consumer advice and other important information for supporting decarbonisation, alongside the development of green lending products. Conversely, there are jurisdictional differences which highlight the importance of different approaches where necessary to take account of specific local circumstance, for example, the use of fiscal measures in Italy (through use of the 100% Superbonus) whereas the scope for such measures is more limited in Scotland as a result of devolved powers limiting availability of what fiscal levers.

In the third and final step in the market demonstration, the Scottish Government and the Province of Trento identified some of the specific challenges faced in their respective jurisdictions and the current and future actions that are being considered and undertaken to address these challenges¹⁶:

Area Objective	Remaining challenges & planned actions in Scotland
Delivery mechanisms, skills and supply	Scotland aims to establish a new dedicated National Public Energy Agency by 2025, to lead the transformational change required to decarbonise Scotland's housing stock.

¹⁶ <https://energyefficientmortgages.eu/wp-content/uploads/2023/01/Current-and-Future-developments-of-the-market-framework-for-accelerating-growth-of-energy-efficiency-%E2%80%93-learnings-from-Scotland-and-Trento.pdf>

Branding, Marketing and Communications	Scottish Government is working to develop a bespoke public engagement strategy for heat in buildings following a particular framework for engagement. This encompasses and builds on the objectives and guiding principles of the Public Engagement Strategy for Climate Change
Advice & Information	Current programmes of advice and support are to be maintained, built upon and awareness raised through publicity campaigns across all media formats. The National Public Energy agency will be a key vehicle for providing future advice and information.
Assessment	Proposals for a new metric of energy efficiency to be applied, based on the amount of energy used by a dwelling, coined the “Energy Use Rating”. This new metric would sit alongside the current Energy Efficiency Rating, which is planned to be renamed to an Energy Cost Rating to reflect that it is based on running cost.
Finance	Establishment of a Green Heat Finance Taskforce to build on existing evidence to set out the alternative sources of funding and financing for heat decarbonisation
Quality Assurance & Consumer protection	Scottish Government to develop a Quality Mark for the energy efficiency installation market. Participants in the programme will have to show that they meet a specific list of requirements
Monitoring & Evaluation	Monitoring and evaluation of progress for meeting these national decarbonisation targets are underpinned by statutory reporting requirements set out in the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019

Table 3: Remaining challenges & planned future actions in Scotland to develop and build a customer journey for decarbonisation and the retrofit of buildings

Area Objective	Remaining challenges & planned actions in Province of Trento
Delivery mechanisms, skills and supply	An inter-institutional collaboration agreement between the Autonomous Province of Trento and the Trentino Cooperation Federation has been approved, referring to the role of cooperatives as an effective model to align with the latest developments in the relevant European regulatory frameworks.
Branding, Marketing and Communications	A strategic communication policy has been established with 3 key pillars, that aims to “Promote education, training and information in order to involve the local community in the transition to clean energy”.
Advice & Information	<p>The PAT has a website, Infoenergia, aimed at providing citizens with information on finance for energy upgrading, sustainable mobility and energy production.</p> <p>The website will continue to be used in the future to provide citizens with all the information on new initiatives and incentives.</p>
Assessment	Data monitoring is planned every two years, so that the results of the various actions taken can be assessed, and any additions to the technical content and targets will be drawn up where necessary.
Finance	The contribution of multiple levers for financing energy efficiency are being considered, including through a combination of direct grants and financial

	instruments, addressing the risks associated with emerging technologies and innovative business models. A number of schemes are being considered involving economic-financial and also non-economic instruments.
Quality Assurance & Consumer protection	As part of the implementation of the strategic policies of the PEAP and the actions identified, a new version of the Italian Sustainable Building Regulation is expected to enter into force from 1 October 2022, which covers all actions that involve a change in the energy performance of a building.
Monitoring & Evaluation	In order to increase the availability of data on the energy performance of buildings, a mandatory EPC for all major second-level renovations (all those covering at least 25% of the “gross dispersing surface”) has been included in the updated Italian Sustainable Building Regulation. This alignment of provincial regulations with state regulations, will make it possible to greatly expand the energy certificate database.

Table 4: Remaining challenges & planned future actions in Province of Trento to develop and build a customer journey for decarbonisation and the retrofit of buildings

3. The EEMI Ecosystem

Drawing on all of the research and analysis described above, the EEMI Bauhaus consists of three pillars: an energy renovation simulator for consumers, access to financing options and finally a directory of accredited suppliers to carry out the work. At the current time, the Ecosystem is being piloted in Italy with a view to testing and refining its key characteristics and in a second step rolling it out in other European jurisdictions, and potentially beyond.

EEMI Ecosystem platform

The Energy Efficient Mortgages Initiative 'Ecosystem' will help you to optimise the **energy renovation of your home** with the smartest upgrade and financing solutions and experts installers for the job!

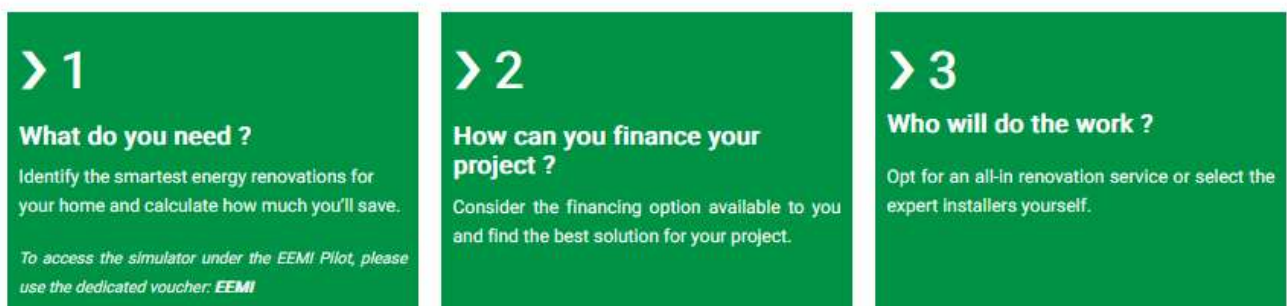


Figure 2: Ecosystem Three Pillar Structure (Source: [EEMI Website](https://www.eemi.eu/))

3.1 Pillar 1: The Simulator

As indicated in the paragraph above, Pillar 1 of the EEMI Ecosystem is intended to consist of an energy renovation simulator which, first and foremost, supports consumers in understanding their energy efficiency renovation needs. Importantly, however, and as we will show below, the simulator will also support financial institutions in their loan decision making and risk management processes.

At the time of writing, pillar 1 of the Ecosystem is being piloted using the CRIF Green Building Energy Efficiency Simulator (Green BEES):

- 1) The first step of the simulation (marked using the number one on the screenshots below, is simple data input by the consumer as follows:
 - ✓ Address of the property which allows for geolocalisation using google maps (Figure 3).
 - ✓ A minimum, intuitive set of information on the property, including the characteristics of the building itself (Figure 4), the current heating and cooling systems (Figure 5) and the consumer's objectives either in terms of budget or target energy class (Figure 6). On the basis of information on the heating and cooling systems, the simulator estimates current energy consumption and EPC class.

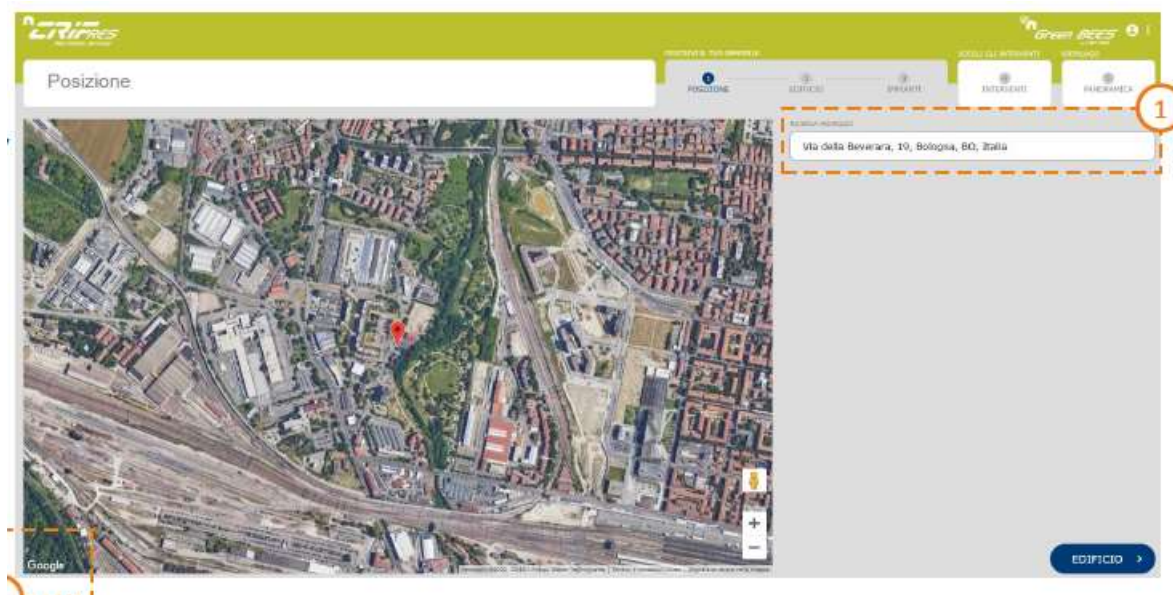


Figure 3: Screenshot of GreenBEES geolocalisation page (Source: CRIF)

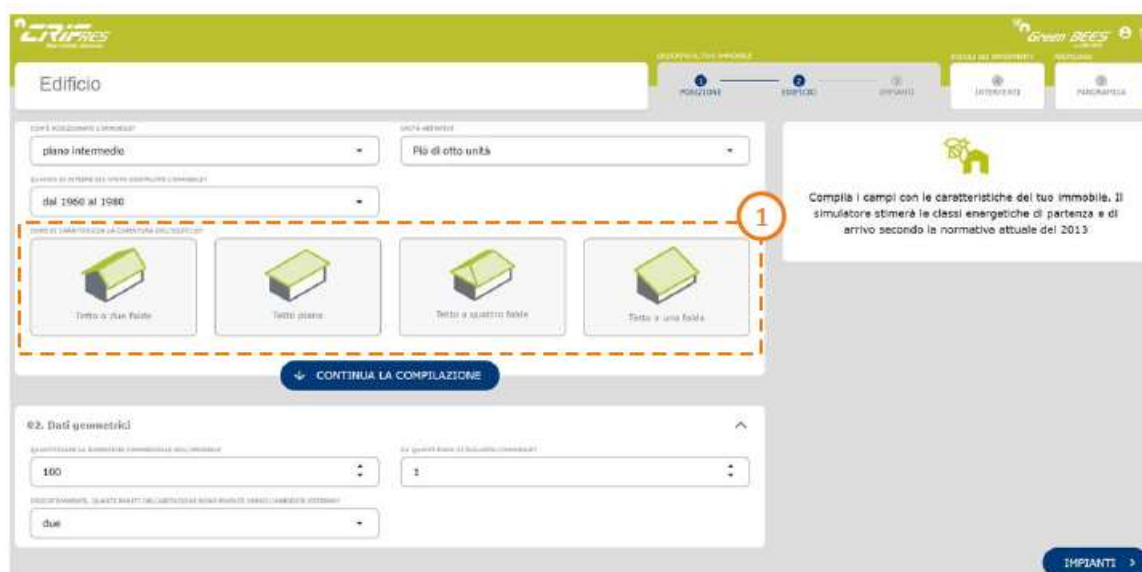
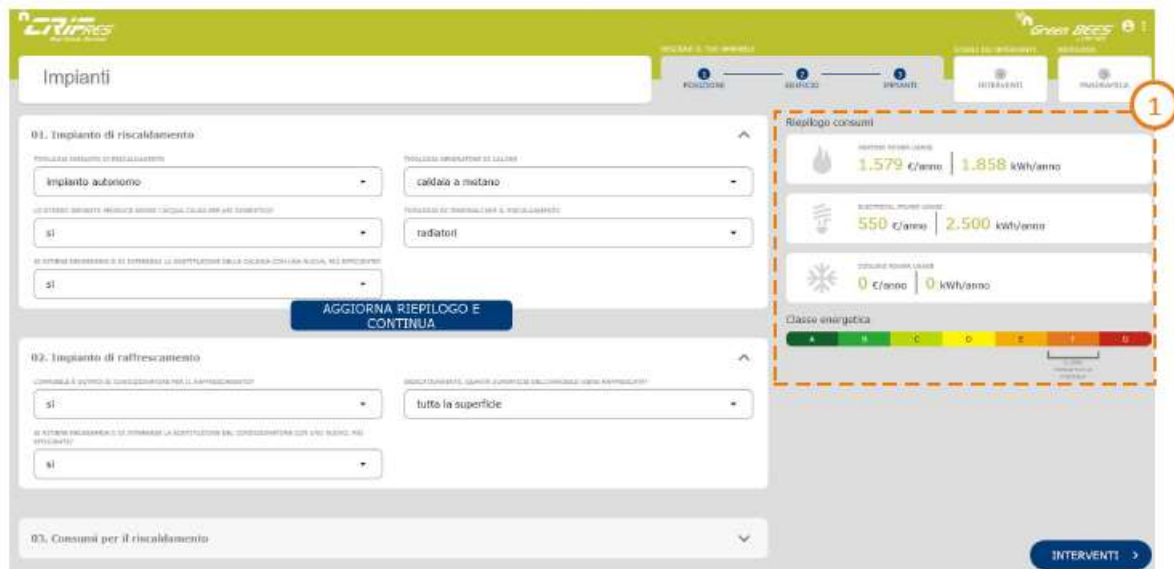
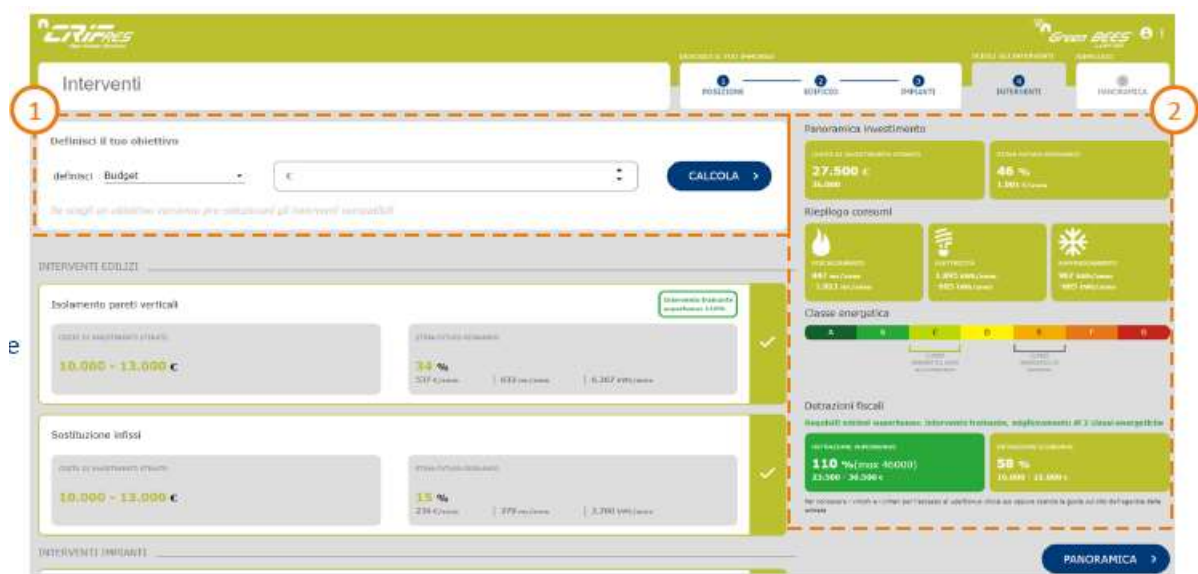


Figure 4: Screenshot of GreenBEES property characteristics page (Source: CRIF)



The screenshot shows the 'Impianti' (Systems) page of the GreenBEES tool. It is divided into three main sections: 01. Impianto di riscaldamento (Heating system), 02. Impianto di raffreddamento (Cooling system), and 03. Consumi per il riscaldamento (Heating consumption). Section 01 includes dropdowns for 'Impianto autonomo', 'caldaia a metano', 'radiatori', and 'AGGIORNA RIEPILOGO E CONTINUA'. Section 02 includes dropdowns for 'si', 'tutta la superficie', and 'AGGIORNA RIEPILOGO E CONTINUA'. Section 03 includes a dropdown for 'Consumi per il riscaldamento'. On the right, there is a 'Riepilogo consumi' (Consumption summary) section with a table of energy consumption values and a 'Classificazione energetica' (Energy classification) bar. A red circle with the number 1 is placed over the 'Riepilogo consumi' section.

Figure 5: Screenshot of GreenBEES heating and cooling systems' page (Source: CRIF)



The screenshot shows the 'Interventi' (Interventions) page of the GreenBEES tool. It is divided into two main sections: 'Definisci il tuo obiettivo' (Define your objective) and 'Interventi consigliati' (Recommended interventions). The 'Definisci il tuo obiettivo' section includes a 'Budget' dropdown and a 'CALCOLA' button. The 'Interventi consigliati' section lists two interventions: 'Isolamento pareti verticali' and 'Sostituzione infissi'. Each intervention shows a cost range, a percentage saving, and a potential energy saving. On the right, there is a 'Panoramica investimenti' (Investment overview) section with a table of investment values and a 'Riepilogo consumi' (Consumption summary) section. A red circle with the number 1 is placed over the 'Definisci il tuo obiettivo' section, and a red circle with the number 2 is placed over the 'Panoramica investimenti' section.

Figure 6: Screenshot of GreenBEES consumer objective & potential green refurbishment page (Source: CRIF)

- 2) The second step in the simulation is the provision of an estimation, based on the inputted data, of potential green renovation measures and the energy and financial savings they could deliver, the ex-post EPC class and the fiscal deductions available to the consumer (Figure 6).
- 3) The simulation can be downloaded in a PDF document or emailed to an email address (Figure 7).



Figure 7: Screenshot of GreenBEES simulation summary (Source: CRIF)

Figure 8 below shows examples of simulations for an apartment and a detached house in Italy:





Figure 8: Screenshot of GreenBEES simulations (Source: CRIF)

The significance of this simulator is that it responds to a number of the findings described earlier in this Report in relation to consumer and market needs, and value chain analysis:

- 1) The simulator is consumer-friendly and intuitive and delivers relevant and valuable information that can 'demystify' the energy renovation process e.g. estimated EPC category and potential renovation measures to consider, and potentially provide reassurance around costs and savings.
 - ✓ This responds to consumer research findings that simplicity is a key requirement, particularly against a background in some jurisdictions of cynicism around bureaucracy implied by EPC certification for example
 - ✓ By providing information on fiscal deductions, it furthermore responds to the consumer research finding that government/EU initiatives could aid in the uptake of EEM, and that there is a perception that energy renovation involves high costs, presenting an obstacle to consumers engaging in such projects.
 - ✓ Ultimately, it also delivers a tailored customer renovation profile which is subsequently replicated throughout the other two pillars, driving the seamless customer journey and experience.
- 2) The simulator delivers relevant information in pdf format which can be provided by the consumer to lending institutions as part of an EEM mortgage application process. This information can in turn support lending decisions and risk management processes, and therefore responds to solutions highlighted in the market research. This is an important output since, together with Pillar 2 and the EEM Label, it addresses ongoing concerns around lack of data.
- 3) Finally, it responds to the feedback from the market demonstrators/value chain analysis around information and advice to consumers on potential energy efficiency renovations and fiscal deductions (or potentially other government support mechanisms).

3.2 Pillar 2: The Financing Options

Pillar 2 of the Ecosystem provides access to financing options by way of the [Energy Efficient Mortgage Label website](#). To recall, the EEM Label is intended as a quality and transparency benchmark and access point for EEM targeted at market participants, including lending institutions, consumers, investors and public authorities. Over and above a robust organisational and governance structure, the EEM Label consists of a series of core features which each respond to findings highlighted in the consumer and market research, and the value chain analysis described earlier in this Report:

EEM Label Convention

First and foremost, the EEM Label is underpinned by the EEM Label Convention which enshrines the definition of an EEM and essentially therefore the EEM Label eligibility criteria:

EEMs are intended to finance the purchase/construction and/or renovation of both residential (single family & multi-family) and commercial buildings where there is evidence of: (1) energy performance which meets or exceeds relevant market best practice standards in line with current EU legislative requirements and/or (2) an improvement in energy performance of at least 30%.

This evidence should be provided by way of a recent EPC rating or score, complemented by an estimation of the value of the property according to the standards required under existing EU legislation. It should specifically detail the existing energy efficiency measures in line with the [EEM Valuation & Energy Efficiency Checklist](#).

Lending institutions are committed to providing regular information enabling investors to analyse the Energy Efficient Mortgage products, following the Harmonised Disclosure Template.

EEM Labelled Products

The EEM Label website provides access to a list of EEM labelled products. At the time of writing, 34 institutions across 12 Member States have labelled 34 EEM products (see figure 9 below). These products can be filtered by country in order for consumers to be able to select product offering in their own jurisdictions, should they wish to. In due course, the intention is to provide a 'Get an Offer' button next to each of the labelled products which will direct the consumer to the relevant section of a lending institution's website. It is important to note that in addition to labelling EEM, the EEM Label provides the possibility for lending institutions to also label unsecured consumer loans (non-mortgage), as market feedback has indicated that there is often consumer preference for unsecured lending to finance a building renovation. At the time of writing, 3 'complementary' products have been labelled, but there is an expectation that more will follow.

Roadmap to EEM Market Development: The EEMI Ecosystem

























Alpha Housing Green Offer	Alpha Bank Romania	 Romania	0€*	0	0.0%	Yes	No	
Credito Condominio EE	Banco BPM S.p.A.	 Italy	0€	0	0.0%	Yes	No	
DMPM Mortgage	Dutch Mortgage Portfolio Management B.V.	 Netherlands	1.329€	5.103	10.0%	Yes	No	
Energy Efficient Mortgage Loan	Obvion NV	 Netherlands	0€	0	0.0%	Yes	No	
FLAVIA DELCORTO	Banco Nazionale del Lavoro	 Italy	0€	0	0.0%	Yes	No	
Green Mortgage	SveaBank AB (publ)	 Sweden	0€*	0	0.0%	Yes	Yes	
Green mortgage loan	Takarék Mortgage Bank Co. plc.	 Hungary	74.479€*	0.000	20.0%	Yes	Yes	
Green Residential Mortgage	PKO Bank Hipoteczny Spółka Akcyjna	 Poland	5.794€*	25.095	30.0%	Yes	No	
Hypotecas verde CRM	Caja Rural de Navarra, S.C.C.	 Spain	704€	5.890	14.0%	Yes	Yes	
Impact hypotheek	Ingage Group	 Netherlands	38€	89	100.0%	Yes	No	
Loan for Green Buildings	Berlin Hyp AG	 Germany	7250€	400	24.0%	Yes	Yes	
Loan for Green Buildings	Jyske Raskredit A/S	 Denmark	94.820€*	10.673	25.0%	Yes	Yes	
Mienst Hypotheek	Ingage Group	 Netherlands	888€	2.888	20.0%	Yes	No	
Muxo Crédit Agricole	Crédit Agricole Italia S.p.A.	 Italy	6.308€	62.179	30.0%	Yes	No	

Figure 9 – Excerpt from list of EEM Labelled Products (Source: [EEM Label website](#))

Product Feature Grid

With a view to responding to the needs of and reinforcing the value of the EEM Label for consumers, a Product Feature Grid has been introduced on the EEMI website with the aim of presenting information on the labelled products in a streamlined, standardised and ultimately consumer-friendly form. Consumers are able to identify specific features of the product, including special loan conditions and whether the bank offers access to an integrated product and service package, as well as key eligibility criteria of the product:

Product Name	Green mortgage loan	Hipotecos verde CRN	Loan for Green Buildings	Loan for Green Buildings	Merivus Hypothekien
Lending Institution	Takarik Mortgage Bank Co. plc.	Caja Rural de Navarra, S.C.C.	Berlin Hyp AG	Jyske Realkredit A/S	Ingos Group
Product Type	Commercial Real Estate, Residential Real Estate	Commercial Real Estate, Residential Real Estate	Commercial Real Estate, Residential Real Estate	Commercial Real Estate, Residential Real Estate	Residential Real Estate
External Product Link					Open
Country					
Year start	2021	2021	2016	2021	2016
Product Features			Yes		
Special loan conditions ¹					
Access to ecosystem and service providers ²					
Target market	<ul style="list-style-type: none"> New building Existing building Building renovation 	<ul style="list-style-type: none"> New building Existing building Building renovation Construction 	<ul style="list-style-type: none"> Existing building Building renovation Construction New building 	<ul style="list-style-type: none"> New building Existing building Building renovation Apartment renovation 	<ul style="list-style-type: none"> Existing building New building
EPC/Energy requirements ³	<ul style="list-style-type: none"> A/B A 	<ul style="list-style-type: none"> A B C D 		<ul style="list-style-type: none"> A B 	<ul style="list-style-type: none"> A
Key eligibility criteria	<ul style="list-style-type: none"> RED<=100 kWh/m2a top15% Minimum 30% Energy performance improvement A/AA or better EPCs 	<ul style="list-style-type: none"> Minimum 30% Energy performance improvement A B C and D EPCs 		<ul style="list-style-type: none"> Minimum 30% Energy performance improvement Buildings with EPC A and B Buildings build after 2008 	<ul style="list-style-type: none"> Minimum 30% Energy performance improvement

Figure 10: EEM Label Product Feature Grid (Source: [EEM Label website](#))

Harmonised Disclosure Template

A core feature of the EEM Label is the Harmonised Disclosure Template (HDT)¹⁷, which is an excel-based form that lending institutions which have been granted the EEM Label use to disclose information on their energy efficient mortgage products, with the primary aim of facilitating and therefore improving access to relevant, consistent and comparable data on energy efficient mortgages within and between jurisdictions for investors, regulators and other market participants for due diligence purposes. The structure of the HDT as of February 2023 is as follows:

- All Worksheets:** Update the year of the HDT template next to the title of each
- Worksheets: “A1. EEM General Mortgage Assets”, “B1. EEM Sust. Mortgage Assets”:** Update wording in Sections 1.A and 1.B from “1.A Residential Cover Pools” and “1.B Commercial Cover Pools” to respectively “1.A Residential Loans” and “1.B Commercial Loans”.
- Worksheets: “A1. EEM General Mortgage Assets”, “B1. EEM Sust. Mortgage Assets”:** Sections 17 and 27 updated the Dwelling Age Structure Section with extra lines in order to have both a clearer picture of the housing age breakdown in most recent years and to have extra flexibility in the future.
- Worksheets: “A1. EEM General Mortgage Assets”, “B1. EEM Sust. Mortgage Assets”:** Sections 20 and 29 unblocked a cell which was up for completion but in the previous version was blocked
- Worksheet: “B1. EEM Sust Mortgage Assets”:** In Section 1.3 mortgage funding information a new entry of “unsecured bonds” was added. This addition lead also to insert an extra line in Worksheet “C. Harmonised Glossary” with a dedicated space in the HDT where to better define the various types of loan funding structure.

¹⁷ <https://www.energy-efficient-mortgage-label.org/hdt>

f) **NEW Worksheet: “D1. Optional EEM Taxonomy C”:** New tab aims at providing two sets of information around taxonomy compliant mortgages. Section 1 the degree for compliance with Taxonomy with respect to the EEM Labelled mortgages, whereas in Section 2 information on the amount of Taxonomy compliant loans, their new lending and repayment dynamics and their financing structure.

Currently, 16 lending institutions have uploaded an HDT for 21 labelled products. The completed HDTs can be accessed via the EEM Label website using the [Label Data Statistics Tab](#).

It is worth highlighting as an aside here other efforts under the EEMI to support data collection, processing and disclosure, namely through the design of an EEM Master Template¹⁸, as the ‘back office’ twin of the HDT for the internal gathering and processing of energy efficient mortgage data. The objective of the Master Template is to: (1) help lending institutions ‘tag’ existing EEM in their loan books, (2) support the origination of new energy efficient mortgages and facilitate progressive ‘greening’ of loan books and (3) deliver empirical evidence for analysis and potential disclosure to prudential authorities (impact on LTV and PD ratios), helping to secure an appropriate prudential treatment and potentially reduce regulatory costs.

Significantly, Pillar 2 of the Ecosystem, comprising the EEM Label and its key features, like pillar 1, responds to the findings of the consumer and market research and the value chain analysis described earlier, and serves a variety of purposes for key groups of market participants in the following ways:

For consumers:

- It provides straightforward access, underpinned by transparency and a quality ‘stamp’, to a range of potential financing options for consumers, which can be filtered according to jurisdiction, and which comply with a clear and robust EEM convention and eligibility criteria.
- The EEM Product Feature Grid, accessible through the EEM Label website, provides more detailed information on each of these financing options. In this way, Pillar 2 also responds to consumer calls for simplicity in this area.

For public authorities:

- The EEMI reinforces public authorities’ efforts, as highlighted in the market demonstrators/value chain analysis, to provide information on financing options to support the customer renovation journey, as well to catalyse financing mechanisms more generally.

For lending institutions:

- The EEMI supports lending institutions’ marketing efforts through provision of a quality benchmark which can be used to support awareness-raising, as highlighted by lending institutions in the market research as a key consideration EEM market development.
- It supports a streamlined data flow focussed on key energy efficiency and ESG parameters through the Master Template, HDT and HRT which can support lending institutions in:
 1. Understanding and demonstrating the “greenness” of their labelled products and therefore their mortgage/loan portfolios for the purposes of regulatory reporting, calculation of regulatory capital

¹⁸ <https://energyefficientmortgages.eu/knowledge-hub>: See EEMI Master Template

and alignment with supervisory expectation around the management of climate and environmental risk.

2. Achieving a gradual implementation of the EU Taxonomy in the mortgage sector (1/3 of bank portfolios), facilitating a fundamental shift of bank strategies and triggering a green wave in the mortgage market which counts for around 45% of EU GDP.
- In this way, Pillar 2 responds to indications from lending institutions regarding the importance of standardisation, data availability and disclosure.

For investors:

- The EEMI provides investors with a robust European benchmark and best practices in relation to data disclosure in support of their due diligence.
- In this way, it recognises the importance of green bond markets in supporting EEM market development, supports overall efforts through the Ecosystem to increase eligible assets to back green bonds and is furthermore a relevant response to the calls in this area also for standardisation, data availability and disclosure.

3.3 Pillar 3 – The Suppliers

Last but not least, Pillar 3 of the Ecosystem is dedicated to providing access to a directory of accredited suppliers and two types of project management for the renovation works: a ‘one-stop’ shop approach with maximum support for the consumer or a less centralised approach according to which the consumer has flexibility in their choice of supplier:

1. **The local manager** guides the consumer through the platform and provides support in the choice of supplier for his/her project. This is the ‘one-stop shop’ experience.
2. **Direct choice of supplier** according to location, types of services & **internal rating system** to provide higher degree of flexibility to consumer.

Both local managers and suppliers can be contacted via an interactive platform as depicted in Figure 11 below.

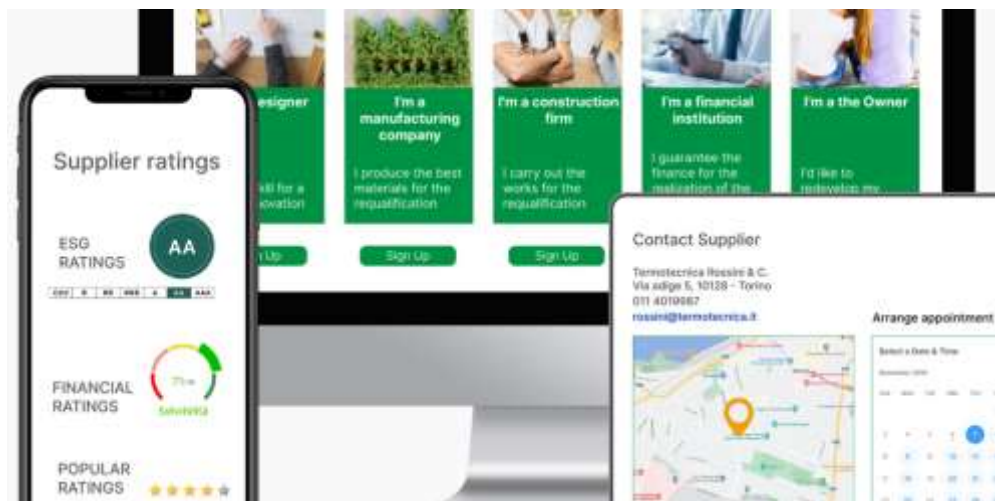


Figure 11: Screenshot of Pillar 3 mock-up (source: [EEMI website](https://www.eemi.it))

Another important and relevant feature of Pillar 3 is a three-part rating system for the supplier, consisting of an ESG rating/scoring, a financial rating/scoring and a popular rating. The ESG rating is currently the subject of a separate EU-funded Project linked to the EEMI, known as TranspArEENS¹⁹, while the financial rating will be provided by a specialised rating company and the popular rating by the companies’ former or current customers. Together these three scoring and/or ratings are intended to secure the presence on the platform of reputable and reliable suppliers to ensure the efficiency and effectiveness of the renovation works.

In this way, Pillar 3 for its part, also responds to customer and market needs as identified through the consumer and market research, as well as priorities highlighted by the market demonstrators/value chain analysis in the following ways:

- The dual approach to the project management, i.e. the one-stop shop approach or the less centralised approach, responds directly to the findings of the consumer research that indicate both a fully managed

¹⁹ The EU-funded TranspArEENS project aims to enhance standardised disclosure of EE and ESG information at firm level, to foster access to long term financing (e.g. via securitization) and better risk assessment, while reducing the risk of greenwashing. See: <https://pric.unive.it/projects/transpareens/home>

service and a ‘manage the project yourself’ approach are seen as acceptable from a consumer perspective and have equal appeal.

- Through the provision of a one-stop shop option to consumers, Pillar 3 responds to calls from lending institutions for a simplified customer journey, in which one-stop shops were highlighted as a potential way forward.
- It moreover promotes and secures the involvement of qualified technical experts in the value chain and, through the three-pronged rating/scoring mechanism offers accreditation which ensures that these expert suppliers are reliable, responding to the feedback from lending institutions in this area and shoring up the integrity of the value chain.
- The three-pronged rating/scoring mechanism also serves to enhance and make visible the EE-ESG profile of expert suppliers, potentially facilitating their investibility and therefore their access to bank lending. This particular spillover links back to the efforts under TranspArEENs, mentioned above.
- In a similar vein, Pillar 3 responds to the emphasis placed by public authorities on quality assurance and, by actively creating a directory of expert suppliers, it actively seeks to promote the further development of a skilled workforce, again supporting public authorities’ priorities, this time in the area of delivery mechanisms, skills and supply.

Over the coming weeks and months, the ambition is to turn Pillar 3 into a genuine ‘marketplace’, where not only consumers and SMEs can interact, but all other relevant market participants providing and requiring a service or product in support of the improvement and financing of the EU’s building stock.

4. The Italian Case

The Italian market has, to a large extent, been a pioneer in relation to the early testing and implementation of the Ecosystem, with partnerships being developed between banks, companies specialising in credit & business systems, utilities and regional authorities, to name but a few, with a view to achieving the necessary organisation and integration of providers, products and processes.

Significantly, at the time of writing, 4 Italian banks have integrated the GreenBEES consumer simulator presented in this Report into their websites, and one is currently in the process of doing so. 12 Italian banks have furthermore signed up to the EEM Label and are labelling both mortgage and unsecured consumer loan products and 8 of these are disclosing data on the underlying loan portfolios through the HDT.

Directory Table Filter results: Italy ▼





































Label Logo	Company Name	Country	EEA Member	HDT
	Agos Ducato S.p.A.	 Italy	 Yes	
	Banca Nazionale del Lavoro	 Italy	 Yes	
	Banca Sella Holding SpA - Banca Sella SpA	 Italy	 Yes	More stats
	Banca BPM S.p.A.	 Italy	 Yes	More stats
	Cassa Rurale Alta Valsugana Soc.-Soc. Cooperativa	 Italy	 Yes	More stats
	CiviBank	 Italy	 Yes	More stats
	Crédit Agricole Italia S.p.A.	 Italy	 Yes	More stats
	GRUPPO CASSA CENTRALE	 Italy	 Yes	+
	Intesa Sanpaolo S.p.A.	 Italy	 Yes	More stats
	Südtiroler Sparkasse AG	 Italy	 Yes	More stats
	UniCredit spa	 Italy	 Yes	
	Volkbank	 Italy	 Yes	More stats

Figure 12: Excerpt from EEM Label website showing Italian EEM Labelled lending institutions

Work is also actively underway regarding the third pillar of the Ecosystem and the potential to identify and connect with an accredited list of suppliers in the country to complete the ‘value chain’. Indeed, several banks are taking the first steps to connect with SMEs active in the retrofitting sector via a genuine market ecosystem to optimise synergies.

Indeed, a leading Italian consultancy company is trialling an approach with some of the largest Italian banks based on three main elements: Method, Guarantee, Finance. The Method is about gathering and checking



Roadmap to EEM Market Development: The EEMI Ecosystem

renovation data. The Consultancy in question has 5 platforms that help manage construction sites efficiently and according to ESG principles. The Method not only reduces risks by overseeing the whole process carefully but also allows for the provision of performance guarantees. These guarantees ensure that the projects meet ESG standards, supporting innovative and sustainable financial solutions.

For more information on these efforts, please contact the Italian EEM Hub representative, Daniela Antonini (daniela.antonini@bancobpm.it)



5. Conclusion

Over a period of two and half years, the Energy Efficient Mortgages Initiative (EEMI) has delivered a wealth of consumer and market research, value chain analysis and many other valuable outputs which have led to the identification and construction of a three-pillar EEMI Ecosystem as the most efficient and effective way of supporting energy efficient mortgage market development and a seamless end-to-end customer journey, whilst delivering additional positive spill-overs in relation to skills and supply, and all of this in support of the climate transition. It is also relevant to highlight here that, as a result of its integrated three-pillar approach, combined with data disclosure and an ESG rating system, the EEMI Ecosystem has built-in mitigants against green-washing.

The priority for the weeks, months and years ahead is to further develop, populate and refine this Ecosystem, and roll it out across European jurisdictions and beyond. This is just the beginning.

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Energy Efficient Mortgages Initiative

Roadmap to EEM market development: EEM Ecosystem

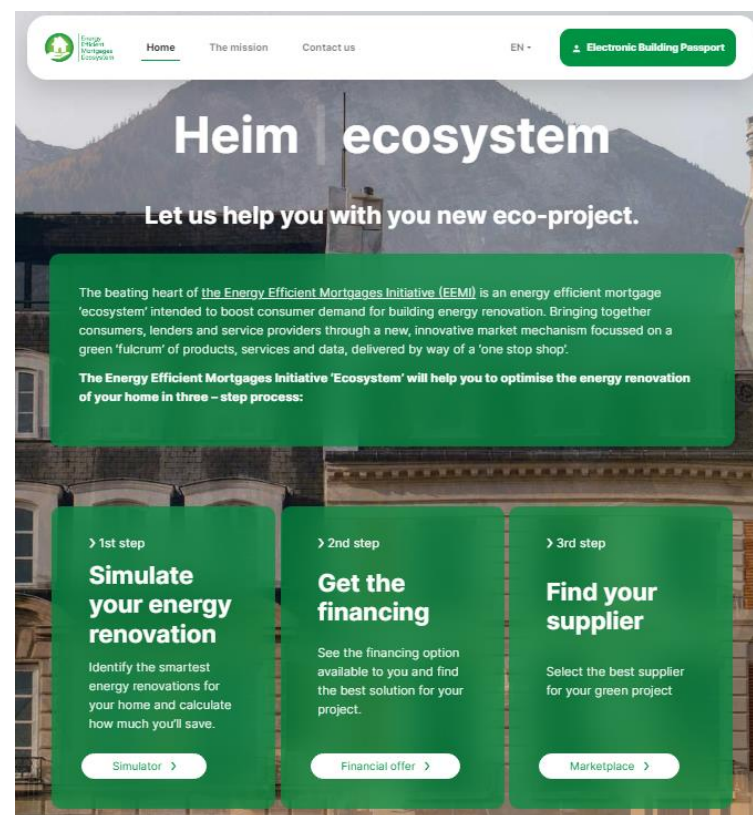
The EEM Ecosystem

Primary objective: Seamless & optimised end-to-end customer renovation journey supported by 3-pillar structure to support EU Renovation Wave:

- Pillar 1: A customer simulator
- Pillar 2: Access to financing options through EEM Label
- Pillar 3: Supplier marketplace

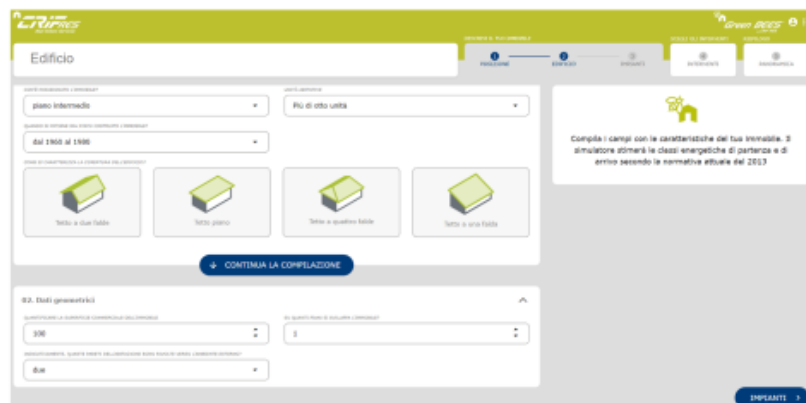
Positive spillovers:

- Support to financial institutions & financial system in 'financing green' & 'greening finance' by:
 - ✓ Delivering continuous flow of data for financial market participant on building energy performance, EU Taxonomy alignment & ESG counterparty assessment and ratings.
 - ✓ Implementation of market best practices to secure gradual but continuous market transition towards & alignment with EU legislative requirements
- Complement to public authorities' efforts to achieve building renovation targets in support of climate transition
- Stimulus for jobs, innovation and growth



Pillar 1 - The simulator

Calculate your **saving** with the CRIF Simulator
Building details



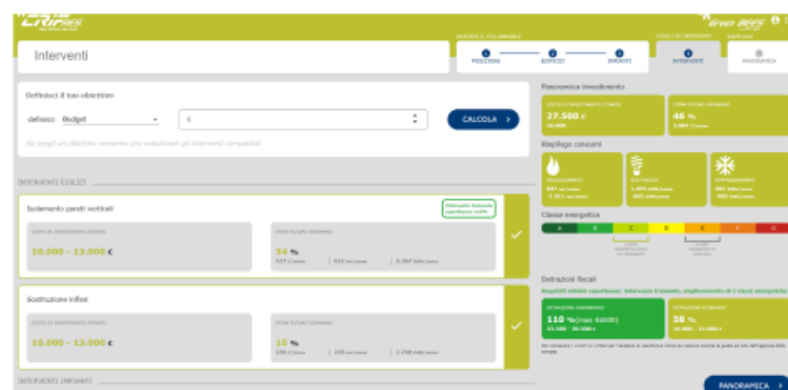
Objectives:

- To support consumers in understanding their energy efficiency renovation needs, associated costs & savings, impact on property value & availability of complementary public funds
- To support banks in their loan decision making & risk management processes

Key deliverables:

- Consumer-friendly, intuitive & delivers relevant & valuable guidance that can 'demystify' & simplify the energy renovation process
- Relevant information in pdf format which can be provided by consumers to banks as part of EEM application process => helps address challenge of lack of data

Calculate your **saving** with the CRIF Simulator
Interventions



Pillar 2 – EEM Label



Objectives: To serve as a quality and transparency benchmark for EEM targeted at market participants, including banks, consumers, investors & public authorities

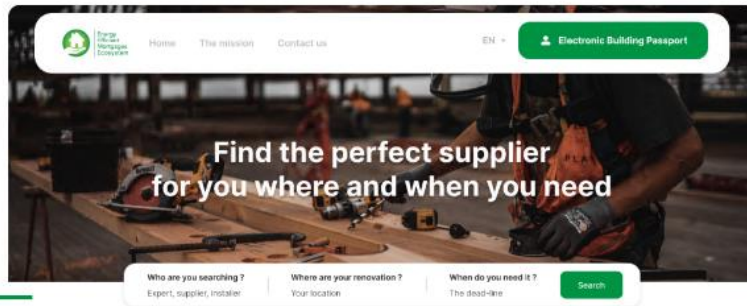
Key deliverables:

- Straightforward access, underpinned by transparency and quality ‘stamp’, to potential EE financing options for consumers, supported by ‘Product Grid’
- Supports banks’ marketing efforts as well as streamlined data flow focussed on key EE & ESG parameters through HDT & HRT, helping banks in:
 - ✓ demonstrating “greenness” of mortgage/loan portfolios for regulatory reporting, calculation of regulatory capital & alignment with supervisory expectations
 - ✓ Achieving gradual implementation of the EU Taxonomy in mortgage sector
- Supports investor due diligence & development of green (covered) bond market

Alpha Housing Green Offer	Alpha Bank Romania		Romania	0€*	0	0,0%	Yes	No	
Credito Condominio EE	Banco BPM S.p.A.		Italy	0€	0	0,0%	Yes	No	
DMPM Mortgages	Dutch Mortgage Portfolio Management BV		Netherlands	1.329€	5.103	16,0%	Yes	No	
Energy Efficient Mortgage Loan	Obvion NV		Netherlands	0€	0	0,0%	Yes	No	
FLAVIA DELL'ORTO	Banca Nazionale del Lavoro		Italy	0€	0	0,0%	Yes	No	
Green Mortgage	Swedbank AB (publ)		Sweden	0€*	0	0,0%	Yes	Yes	
Green mortgage loan	Takarék Mortgage Bank Co. plc.		Hungary	74.479€*	6.666	20,0%	Yes	Yes	
Green Residential Mortgage	PKO Bank Hipoteczny Spółka Akcyjna		Poland	5.794€*	25.095	30,0%	Yes	No	
Hipoteca verde CRN	Caja Rural de Navarra, S.C.C.		Spain	764€	5.666	14,0%	Yes	Yes	
Impact hypotheek	Ingage Group		Netherlands	36€	99	100,0%	Yes	No	
Loan for Green Buildings	Berlin Hyp AG		Germany	7.250€	416	24,0%	Yes	Yes	
Loan for Green Buildings	Jyske Realkredit A/S		Denmark	94.920€*	16.673	28,0%	Yes	Yes	
Merius Hypotheek	Ingage Group		Netherlands	889€	2.988	26,0%	Yes	No	
Mutuo Crédit Agricole	Crédit Agricole Italia S.p.A.		Italy	6.309€	62.179	30,0%	Yes	No	

Product Name	Green mortgage loan	Hipoteca verde CRN	Loan for Green Buildings	Loan for Green Buildings	Merius Hypotheek
Lending Institution	Takarék Mortgage Bank Co. plc.	Caja Rural de Navarra, S.C.C.	Berlin Hyp AG	Jyske Realkredit A/S	Ingage Group
Product Type	Commercial Real Estate, Residential Real Estate	Commercial Real Estate, Residential Real Estate	Commercial Real Estate, Residential Real Estate	Commercial Real Estate, Residential Real Estate	Residential Real Estate
External Product Link					Open
Country					
Year start	2021	2021	2015	2021	2016
Product Features					
Special loan conditions ¹			Yes		
Access to ecosystem and service providers ²					
Target market	<ul style="list-style-type: none"> New building Existing building Building renovation 	<ul style="list-style-type: none"> New building Existing building Building renovation Construction 	<ul style="list-style-type: none"> Existing building Existing building Construction New building 	<ul style="list-style-type: none"> New building Existing building Building renovation Apartment renovation 	<ul style="list-style-type: none"> Existing building New building
EPC/Energy requirements ³	<ul style="list-style-type: none"> AA A 	<ul style="list-style-type: none"> A B C D 		<ul style="list-style-type: none"> A B 	<ul style="list-style-type: none"> A
Key eligibility criteria	<ul style="list-style-type: none"> PED<=100 Kwh/m2a top15% Minimum 30% Energy performance improvement A/AA or better EPCs 	<ul style="list-style-type: none"> Minimum 30% Energy performance improvement A B C and D EPCs 		<ul style="list-style-type: none"> Minimum 30% Energy performance improvement Buildings with EPC A and B Buildings build after 2009 	<ul style="list-style-type: none"> Minimum 30% Energy performance improvement

Pillar 3 -Marketplace



Search directly on the map



Simulate your energy renovation

Go to the simulator »

Get the financing

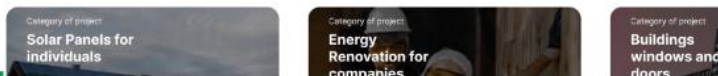
Go to financial offer »

Search by categories of project

See all categories (8)

You have a specific project ?
Browse here

Solar Panels Energy Renovation Windows and doors Heating Rooms



Objectives:

- Provides access to directory of accredited suppliers with choice of one-stop-shop or decentralised project management approach
- Delivers 3-part rating system for suppliers, consisting of ESG rating/scoring, financial rating/scoring & popular rating

Key deliverables:

- Supports delivery of simplified customer journey, with choice of project management approach for consumer
- Promotes and secures involvement of qualified technical experts in value chain and, through rating/scoring mechanism, offers accreditation which ensures expert suppliers are reliable
- Enhances suppliers' EE-ESG profile, potentially facilitating access to bank lending
- Overall actively seeks to promote further development of skilled workforce

The Italian Case

Italian market has been a pioneer in relation to early testing & implementation of Ecosystem:

- 4 Italian banks have integrated GreenBEES consumer simulator into their websites & 1 is currently in the process of doing so
- 12 Italian banks have signed up to EEM Label & are labelling mortgage & unsecured consumer loan products
- 8 of these are disclosing data on the underlying loan portfolios through the HDT
- Work is actively underway regarding pillar 3 of the Ecosystem & potential to identify & work with an accredited list of suppliers to complete the 'value chain'
- First steps are actively being taken to link banks and SMEs active in the retrofitting sector to optimise synergies

For more information, please contact Italian EEM Hub representative, Daniela Antonini (daniela.antonini@bancobpm.it)

Directory Table

Filter results : Italy ▼

Label Logo	↓ Company Name	Country	EEA Member	HDT
	Agos Ducato S.p.A.	 Italy	 Yes	
	Banca Nazionale del Lavoro	 Italy	 Yes	
	Banca Sella Holding SpA - Banca Sella SpA	 Italy	 Yes	More stats
	Banca BPM S.p.A.	 Italy	 Yes	More stats
	Cassa Rurale Alta Valsugana Bco-Soc. Cooperativa	 Italy	 Yes	More stats
	CiviBank	 Italy	 Yes	More stats
	Crédit Agricole Italia S.p.A.	 Italy	 Yes	More stats
	GRUPPO CASSA CENTRALE	 Italy	 Yes	+
	Intesa Sanpaolo S.p.A.	 Italy	 Yes	More stats
	Südtiroler Sparkasse AG	 Italy	 Yes	More stats
	UniCredit spa	 Italy	 Yes	
	Volksbank	 Italy	 Yes	More stats

Find out more about EEMI

Websites:

<https://energyefficientmortgages.eu/>

<https://www.energy-efficient-mortgage-label.org/>

Twitter:

https://twitter.com/emf_ecbc

LinkedIn

<https://be.linkedin.com/company/european-mortgage-federation>