



Introducing ENGAGE: A Solution for EU Taxonomy Compliance

12 July 2023



Co-funded by the
European Union





Today's Speakers



Dr. Christian Thun
CEO
European DataWarehouse



Fotis Kourmousis
Executive Board Member
Hellenic Financial Stability
Fund (HFSF)



Cátia de Almeida L. Alves
Sustainability & Corporate
Social Responsibility Director
Union de Créditos Inmobiliarios



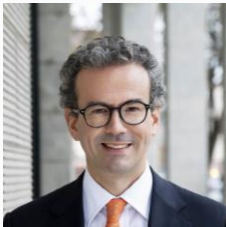
Daniel Goudsmit
Business Development
Hypoport



Hendrik-Jan Luikinga
CIO
Woonnu



Federico Sartore
Partner
Panetta and DEXAI



Marco Angheben
Head of Business Development
& Regulatory Affairs
European DataWarehouse



Michele Costola
Researcher
Ca' Foscari University



Lisa de Sousa Macedo
Head of Methodologies
ARC Ratings



Katie Prideaux
Sustainable Investment
Analytics Lead
London Stock Exchange Group



Agenda

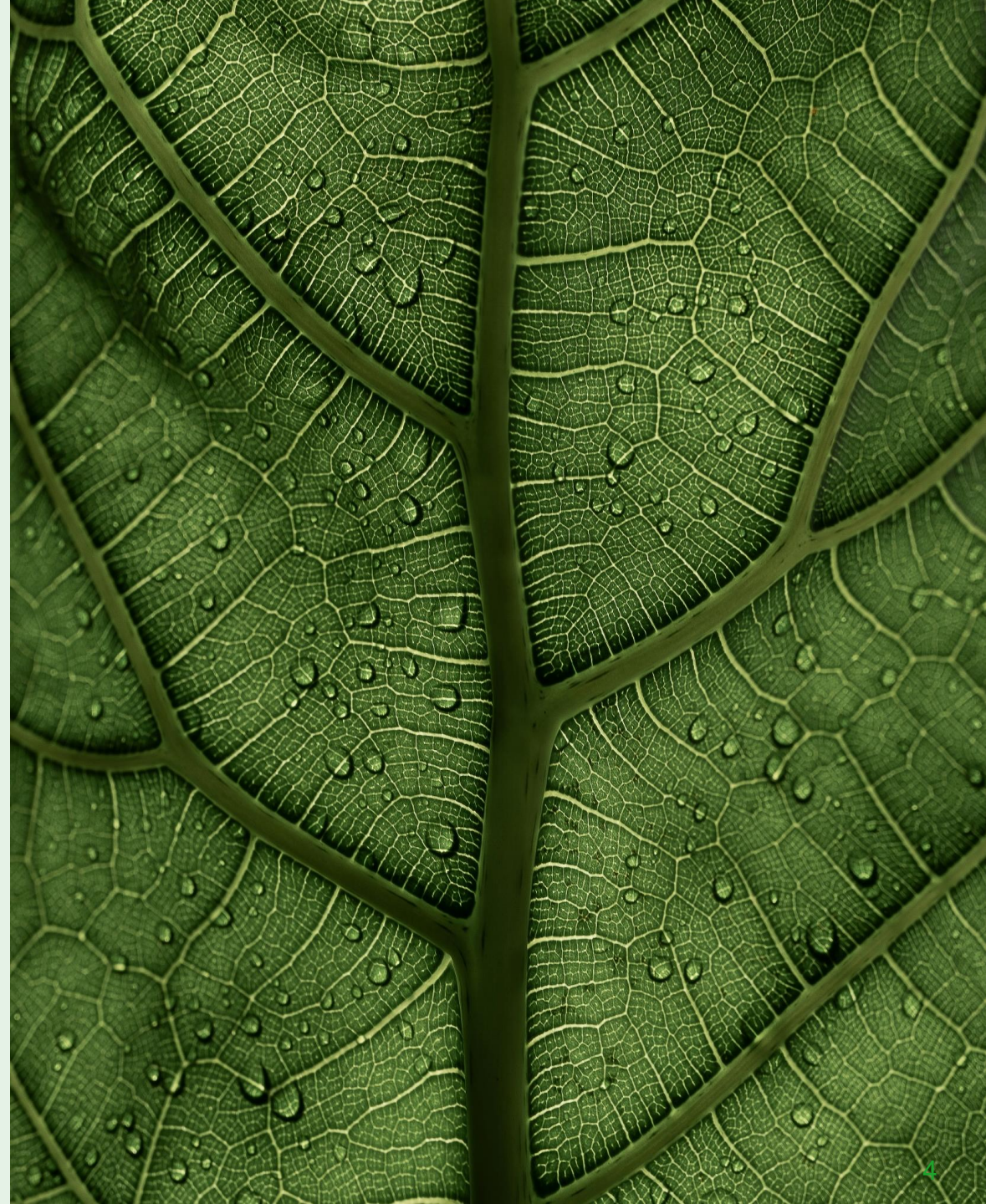
- 16:05 The Sustainable Finance Landscape - ESG Requirements for Investors:
- Fotis Kourmousis - Executive Board Member, Hellenic Financial Stability Fund (HFSF)
- 16:20 A Solution for EU Taxonomy Compliance
- Marco Angheben, European DataWarehouse
 - Daniel Goudsmit, Hypoport
 - Hendrik-Jan Luikinga, Woonnu
 - Cátia de Almeida L. Alves, Union de Créditos Inmobiliarios
 - Federico Sartore, Dexai Artificial Ethics
- 17:10 Exploring the Relevance of ESG Data: Practical Examples & Lessons Learned
- Moderator: Marco Angheben, European DataWarehouse
 - Michele Costola, Ca' Foscari University
 - Lisa de Sousa Macedo, ARC Rating
 - Katie Prideaux, London Stock Exchange Group
- 17:55 Closing Remarks





Welcome & Introduction

Dr. Christian Thun, European DataWarehouse





ENGAGE Description

- Name: Engage for ESG activation investments (ENGAGE)
- Co-funded by the European Union with a specific grant
- Duration: 1 November 2022 – 31 October 2025
- Six consortium partners across Europe



**EUROPEAN
DATAWAREHOUSE**

ESMA-designated Securitisation Repository and Eurosystem repository for ABS & pools of additional credit claims



IT company, developers of software solutions for the financial sector



Università
Ca'Foscari
Venezia

Pioneer university in sustainable finance programmes and research

UCI

Specialist entity in sustainable financing for mortgages and loans in the Spanish market. Leader of the Spanish pilot

woonnu

Innovative sustainable mortgage loan originator in the Dutch market. Leader of the Dutch pilot



Experts in ensuring compliance of new technologies with legal and ethical standards



The Sustainable Finance Landscape – ESG Requirements for Investors

Fotis Kourmousis, Hellenic Financial Stability Fund





Sustainable Finance
Sustainable Funding
Sustainable Growth



Mandatory Criteria for ESG in Financing, Subsidies, Loans

- Global crises: Financial, Pandemic, Corona, Energy, Inflationary
- World Conference on Climate Change (COP27, November 2022): Prioritising the use of renewable energy sources
- UNEP FI has issued:
 - ✓ Principles of Responsible Banking (PRB) → applied by more than 50% of the global banking system
 - ✓ Principles of Responsible Investments (PRI) → applied by more than 4 thousand Investment Funds with assets under management > \$ 100 trillion
- European policies / institutional framework:
 - ✓ European Regulation 2088/2019 Banks must publish ESG data → sustainable financing
 - ✓ Sustainable finance policy: new package and rules (June 2023) → for achieving the Green Deal objectives
 - ✓ Revision of the Energy Performance for Building Directive ongoing → Renovation Wave with reduction of CO2 emissions



EU sustainable finance framework

- Encourage private funding of transition projects and technologies
 - Propose new rules for ESG rating providers - increasing transparency

EU taxonomy: new criteria for economic activities

- sustainable use and protection of water and marine resources
- transition to circular economy
- pollution prevention and control
- protection and restoration of biodiversity and ecosystems
- improvement of the energy efficiency for buildings

EU Taxonomy user guide

- EU legal framework: providing guidance & practical examples for financing transition
- Various tools of EU framework: channel investments into transition & manage risks from climate change
- EU grants via the EIF to fight energy poverty



EU sustainable finance framework

- Encourage private funding of transition projects and technologies
- Propose new rules for ESG rating providers - increasing transparency

European grants for the Renovation Wave

- The EIB together with the EIF as well as national development agencies are subsidizing the renovation wave with dedicated grants across Europe

ESG ratings: important role in EU sustainable finance market, providing information

- Transparency of ESG ratings activities
- New organizations principles
- Clear rules on the prevention of conflicts of interest
- Integrity of their operations

New rules:

- investors will make better decisions regarding sustainable investments
- services to investors and companies in the EU, supervised by ESMA
- quality and reliability of the services protecting investors & ensuring market integrity



PANEL: A Solution for EU Taxonomy Compliance

Marco Angheben, European DataWarehouse

Daniel Goudsmit, Hypoport

Hendrik-Jan Luikinga, Woonnu

Cátia Alves, Union de Créditos Inmobiliarios

Federico Sartore, Dexai ArtificialEthics





Energy Efficiency for the EU Building Stock

In the EU's 27 countries there are...



445
million people



Buildings account for
40% of EU energy use
& 36% of GHG
emissions



247
million dwellings



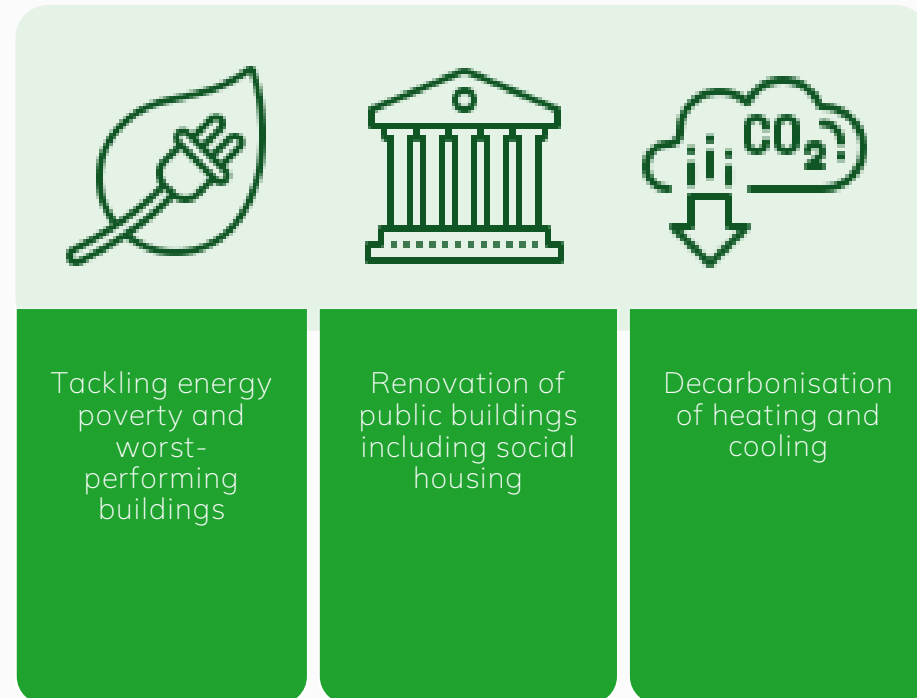
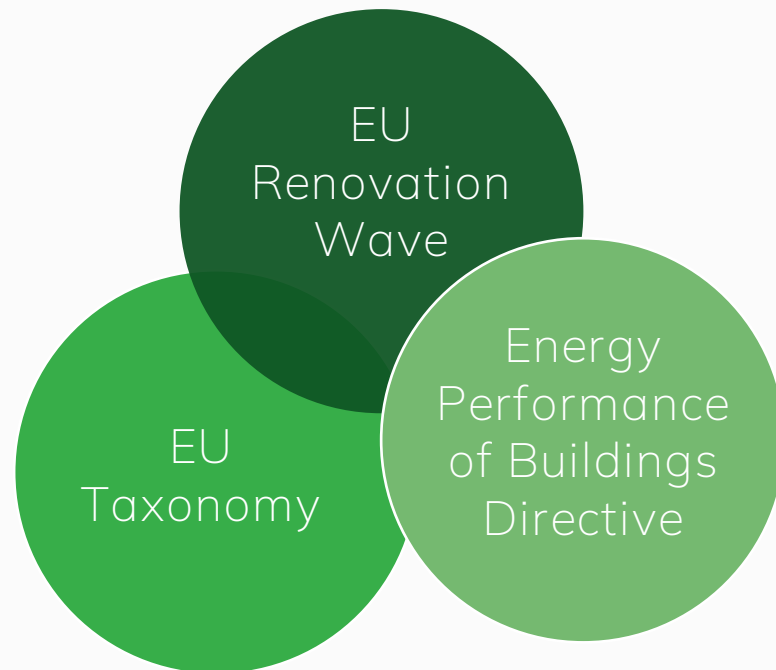
> 220 million of
which were built
before 2001



Source: European Commission

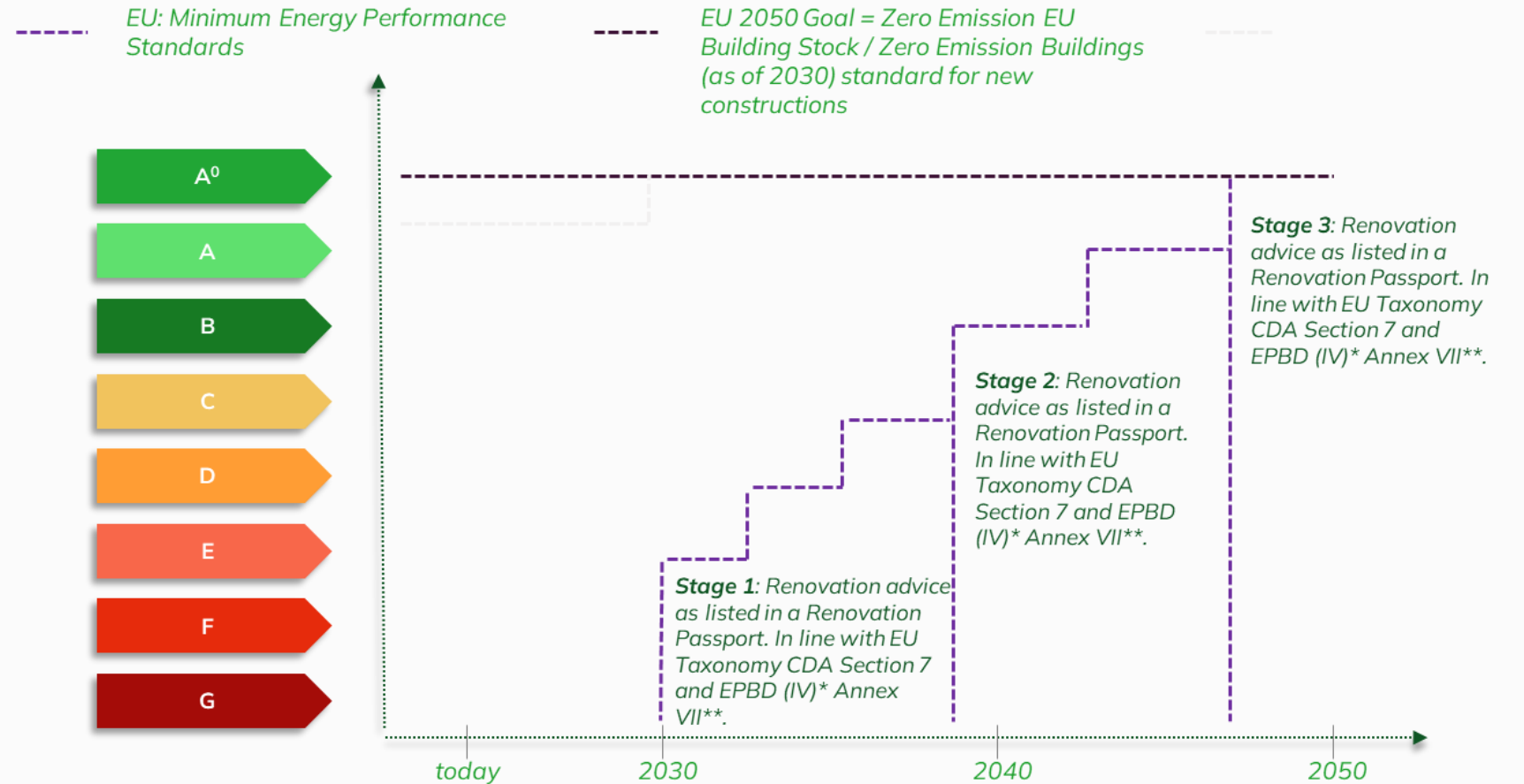


Energy Efficiency Regulations





Reaching the EU 2050 Zero Emission Building Stock Target



* Which aligns with MEPS (Article 9) and national building renovation plan (Article 3).

** Annex VII of EPBD IV: Comparative methodology framework to identify cost optimal levels of energy performance requirements for buildings and building elements.

*** EPC scale as proposed in EPBD IV council proposal



ENGAGE: A Comprehensive Solution

"We do not know what data is needed for EU Taxonomy Alignment"

"What data is needed to gain insights into the renovation potential?"

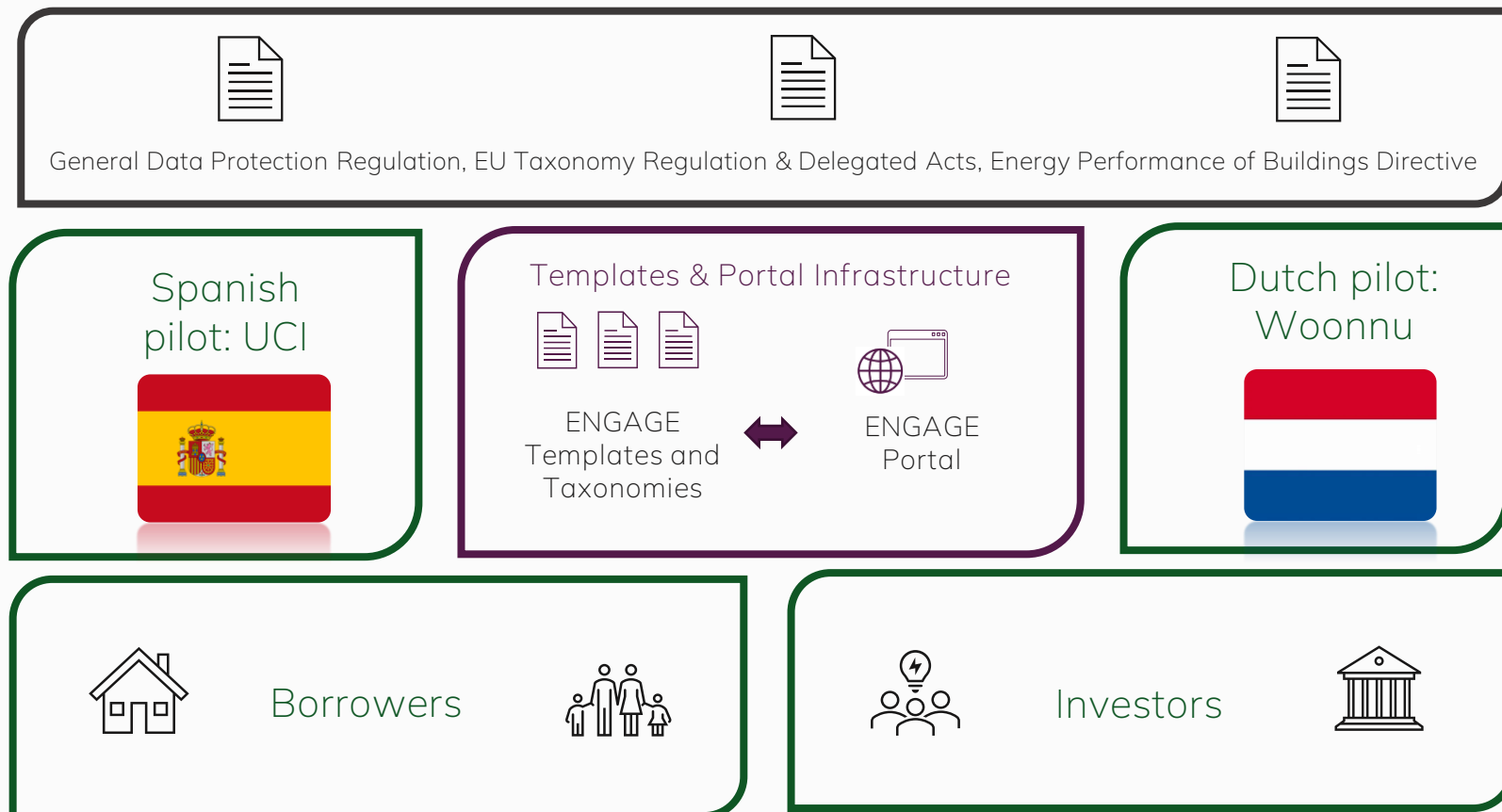
"How does this portfolio compare to other portfolios?"

"Which portfolio has the best renovation performance?"

"We have a mandate to fund EU Taxonomy aligned renovation investments but we have a challenge in identifying eligible investments"



ENGAGE: The High-Level Concept





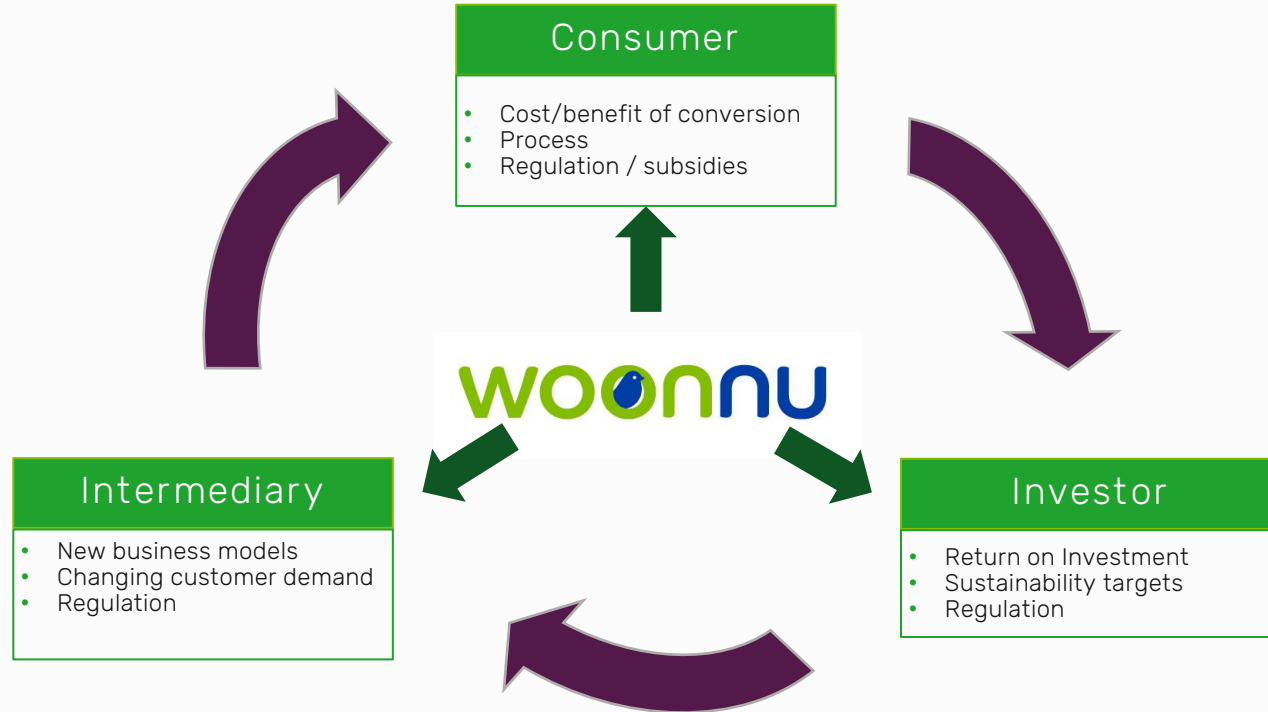
Piloting with Woonnu

- Innovative sustainable mortgage loan originator in the Dutch market
- Aims to contribute to the sustainability conversion of the Dutch property stock by:
 - i) offering consumers a mortgage loan that rewards improvements in the energy label of their property; and
 - ii) supporting clients in improving the energy efficiency of their property
- 100% subsidiary of NN Bank – an established mortgage originator in the Dutch market
- Hybrid mortgage lending platform that combines the strength of the NN Group balance sheet with that of third-party investors
- € 2.3bn mortgage loans originated since start, primarily with an EPC of A or better
- NN Bank services a mortgage portfolio of € 55.9 bn (December 2022), excluding Woonnu





Servicing 3 Core Client Groups





Woonnu Proposition: Tooling & Susteen

- With the Woonnu tool intermediaries and consumers can analyse the economics of potential energy efficiency improvements that can be made to a (target) property
- For different conversion measures, the Woonnu tool calculates the cost, the Return-on-Investment and Pay-back period, based on property value increase and mortgage cost savings
- If desired, this estimate can be confirmed in a conversion report after an on-site visit by our partner Susteen (sustainability advisor)



Centrale verwarming

Diverse type ketels en warmtepompen die de verwarming en warmwatervoorziening in je huis regelen.



Douche-WTW

Warmteterugwinning haalt warmte uit wegstromend douchewater, en gebruikt die om koud leidingwater te verwarmen.



Dakisolatie

Het dichten van overbodige openingen en het aanbrengen van een isolerende laag.



Muurisolatie

Isolerend materiaal aanbrengen in de spouw tussen de buiten- en binnenmuur van je woning.



Slaapkamerraam isolatie

HR++ glas en triple glas i.p.v. enkel of gewoon dubbel glas.



Vloerisolatie

Isolatie aan de onderzijde van de vloer via de kruipruimte.



Woonkamerraam isolatie

HR++ glas en triple glas i.p.v. enkel of gewoon dubbel glas.



Ventilatie

Ventilatiebalans WTW i.p.v. ...

Investering naar A-label:
€ 6.302,-

Rentevoordeel:
€ 32.622,-

Terugverdientijd:
1 maand

Waardestijging van de woning:
€ 11.173,-

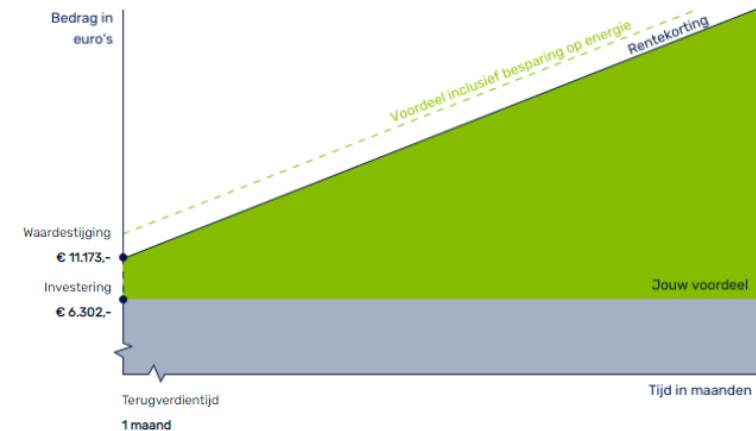
Besparing op energiekosten:
€ 77,- p/m

Verminderde CO2 uitstoot:
42%

Een indicatie wat het verduurzamen van jouw huis je op kan leveren

Deze grafiek geeft je een indicatie van de tijd die nodig is om je duurzame investering terug te verdienen. Daarnaast zie je hoeveel je kunt besparen op je hypotheeklasten door het rentevoordeel van Woonnu en een indicatie van de besparing op je energierekening.

Bekijk de tabbladen voor een gedetailleerde uitleg van elk item.





Woonnu Proposition: Unique in the Dutch Market

- Woonnu directly rewards consumers for realised label improvements
- The Woonnu mortgage loan pricing has an innovative element compared to traditional mortgages:
 - In addition to risk-class and interest rate fixed period, Woonnu mortgage pricing considers a third element: the energy label of the property
 - Depending on the property's energy label, a discount or mark-up is applied to the mortgage interest rate

Zero-on-meter (Nul-op-de-meter)	Discount 0.15%
Energy Label A	Discount 0.10%
Energy Label B	Discount 0.05%
Energy Label C	Base
Energy Label D-G	Mark-up 0.15%

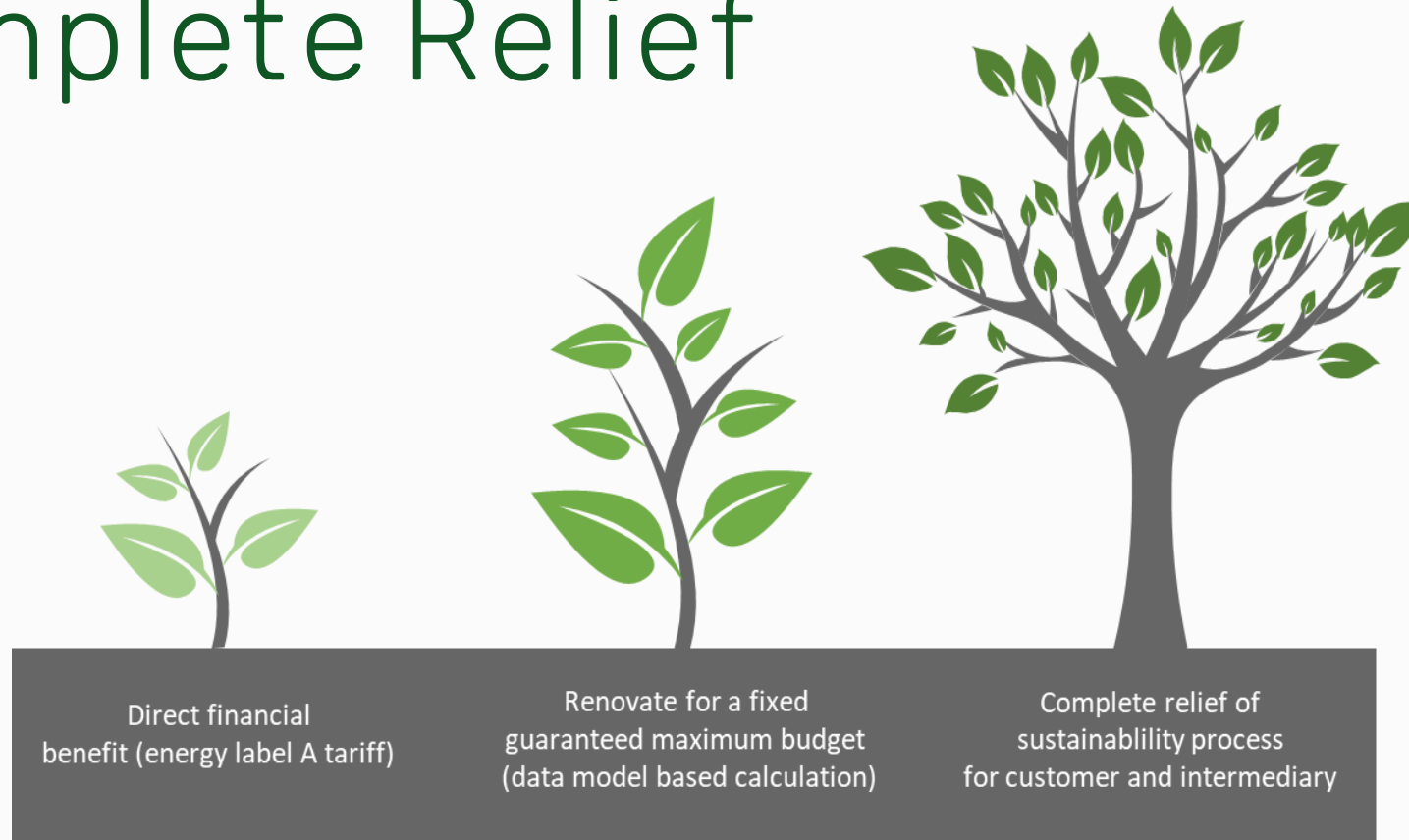


Woonnu Proposition: Innovative Pricing Scheme

- The Woonnu mortgage loan pricing has an innovative element compared to traditional mortgages:
 - An improvement in energy label is immediately translated into an improvement of the mortgage interest rate (upon demonstration of the improved label)
 - The discounted interest rate is applicable i) to the full loan amount (not just the amount needed for the sustainability conversion) are limited and ii) for the full (remaining) tenor of the mortgage loan (not just to interest reset)
- With this innovative pricing scheme Woonnu aims to truly incentivise consumers to realise the sustainability conversion: sizeable discounts directly translate into concrete and significant benefits for the mortgage borrower

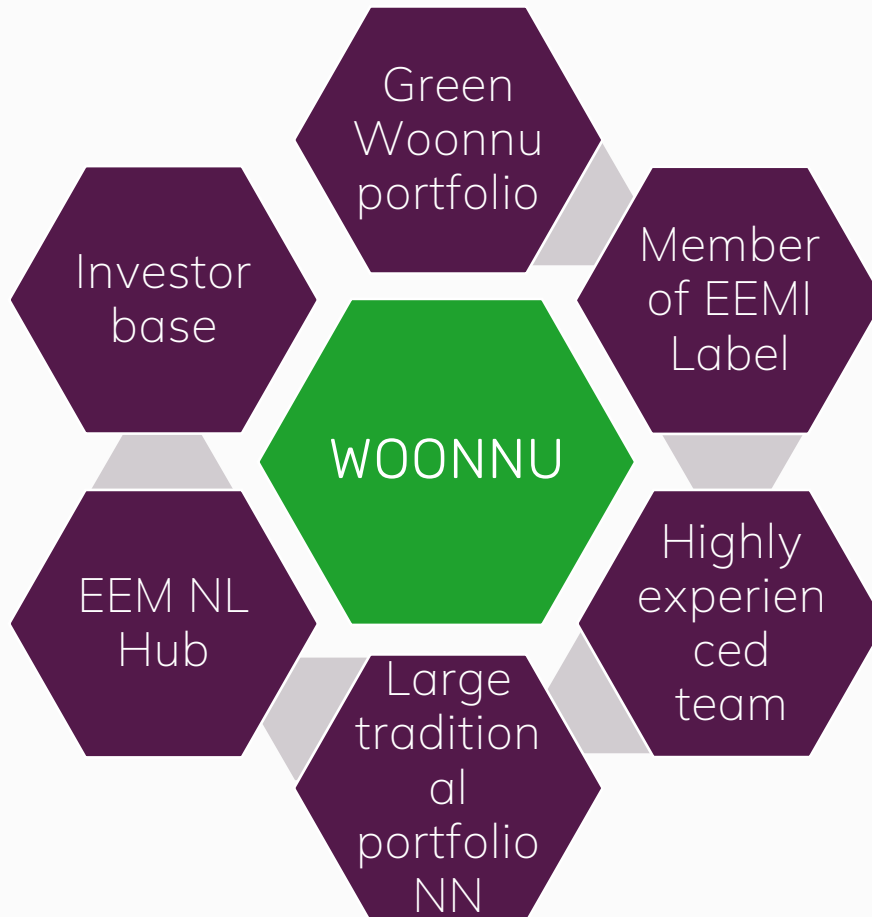


'One-Stop-Shop' Proposition – Complete Relief





Perfectly Positioned For ENGAGE





Dutch Pilot Phase

- During the pilot phase Woonnu will act as lead beneficiary of the pilot phase in the Netherlands
 - Woonnu will select a suitable pool of assets for the pilot
 - The pilot will run on several months of mortgage data (minimum 3)
 - Woonnu and recipient of the datasets will provide feedback on the process
 - Woonnu will provide information on the prospective ease of use of the solution



Piloting with UCI

- UCI are specialists in sustainable financing. Our purpose is to promote responsible home buying through loans and mortgages that put our clients and their vital projects at the centre
- We want to change the world through homes
- Our challenge is to achieve the decarbonisation of cities by 2050, thus contributing to the challenges of the SDGs (Sustainable Development Goals)
- Through the Green Mortgages & Loans project, we promote the purchase of energy-efficient homes and the rehabilitation of the housing stock
- Committed to Sustainability & The Society

UCI in figures 2022

10,236 M€
Outstanding Balance

839 M€
Consolidated Production

112 M€
Green Production

2,308
Real Estate Agencies

620
Employees

3.000
Beneficiaries from Volunteering

300
Volunteers



UCI's Strategy to Tackle Iberian Building Stock Decarbonization

WHY

- Decarbonization: for climate, health and jobs
- To enhance our strategy in the field of sustainability, improving coordination, and cross-cutting integration at European and national levels, especially in helping to achieve the 2030 Climate Target Plan of reducing greenhouse gas emissions to at least 55% below 1990 levels and contribute to the Paris Agreement, UCI has developed a Sustainable Energy Action Plan which intends to decarbonize our cities and provide health and jobs in our society

HOW

- Crucial for the ecological transition and responds to the obligation to accelerate the fight against climate change and improve our well-being in accordance with the agendas and calendars that have already been established by the European Commission, the Convention on Change. Climate (Paris Agreement) and the UN (Sustainable Development Goals)
- Developing instruments on society behalf to create awareness among the citizens and added value to all stakeholder's value chain

WHAT

- Special projects with focus on the energy efficiency rehabilitation of multi-apartment buildings carried out by homeowners associations, through the creation of a propitious ecosystem following the model of a one-stop-shop to activate the renovation of residential buildings appetite and tighten public & private collaboration



Spanish Housing Market Structure

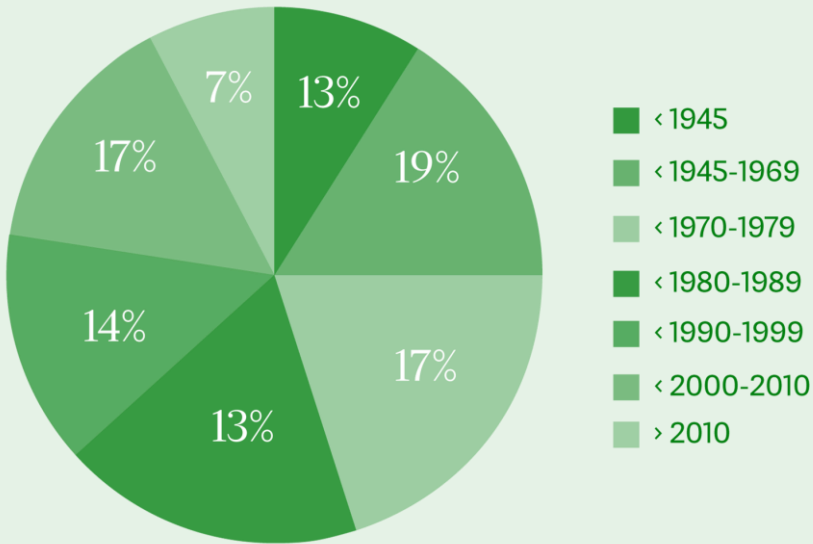
65% of the Spanish population live in flats
Only Latvia, whose average is 46%, surpasses Spain

- 18.7M Households across Spain
- 25,9M Dwellings in Spain
- 9,7M Buildings in Spain
- 90% Spanish building stock is energy inefficient

Source: INE

50% of the residential park is > 50 years old*

*Residential buildings per construction year (2014)



Source: IDAE 2019



UCI Key Decarbonization of Real Estate Stock Projects

Green Mortgages & Loans

2018. Membership of the Energy Efficient Mortgages initiative (EEMI) of the European Mortgage Federation (EMF)

In collaboration with EIB-Green Belém RMBS

2020. Structuring and launch of the first green securitisation fund 100M € (RMBS Belem 1). STS and Sustainalytics label

In collaboration with EIB-Prado VIII

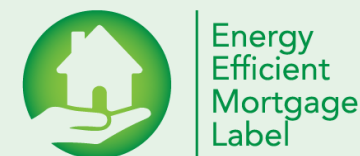
2021. The European Investment Bank (EIB) and Unión de Créditos Inmobiliarios (UCI), signed a new agreement Prado VIII 50M € to promote the renovation of existing buildings in Spain and Portugal

ELENA RER Project

The EIB and the European Commission provide UCI with €2.6m to mobilize €46.5m for energy efficient housing One Stop Shop for Residential Energy Rehabilitation supported by the European Commission

ENGAGE Project

Coordinated by European DataWarehouse (EDW) in collaboration with UCI and other entities, for which our company has received a grant of 128 k by the European Climate, Infrastructure and Environment Executive Agency (CINEA/EUROPEAN COMMISSION) under the LIFE programme



Sustainable Finance



Co-funded by the Horizon 2020 Programme of the European Union
European Local Energy Assistance - www.elena.org/en





Government Strategy – Building Stock Decarbonisation

- ERESEE 2020- Update of the Long Term Strategy for Energy Renovation in the Building Sector in Spain (ERESEE)
- Plan Nacional Integrado de Energía y Clima (PNIEC) 2021-2030
- Long term strategy for decarbonization (ELP) to achieve climate neutrality on 2050
- Plan de Recuperación, Transformación y Resiliencia (PRTR). Aid program for the comprehensive rehabilitation of residential buildings and homes



Growing Interest in the Rehabilitation of Residential Buildings

- Since 2012, refurbishment activity has exceeded the volume of business for new-build construction
- The rehabilitation activity represents an annual turnover of 45,386.5 M€, exceeding for the eighth consecutive year the turnover of new construction, which stood at 43,728.5 M€
- In 2019, rehabilitation represented 50.9% of the total building turnover, a much higher rate than it represented in 2007, when it barely accounted for 18.2%
- 83.2% of the buildings subject to renovation were for residential use



Homeowners* want more Sustainable Housing

85.4%

Willing to make an investment to improve the efficiency of their homes

50.2%

Would propose a sustainable rehabilitation in the next neighbourhood meeting

*72%

Respondants live in a Community of Owners

Most valued reforms

57.8%

Solar panels

46.1%

Outer insulation

36.1%

Improving accessibility

35.4%

More efficient heating system



Lack of Info on Available Aids & Subsidies

77.7%

Don't know the loans to neighbourhood communities

83.6%

Don't know what the NGEU are

Respondents wonder...

68.5%

Is it expensive to do renovation works?

30.4%

How long does it take to amortize the investment?

57.9%

How to convince all the neighbours?

15.7%

Will I notice the results at home?

Source: UCI survey of 2.000 Homeowners (2022)



UCI Proposition: Process

1 Energy Savings Calculator

Determine the energy savings (kWh) that the Homeowners will obtain with the renovation

2 Automatic generator of reports on energy efficiency improvement works

A catalogue of works to be carried out can be proposed to the Homeowners in which the improvement obtained in each of them is specified along with the cost

3 Subsidiator

Database of all existing subsidies, aids and grants in the field, promoting energy efficiency

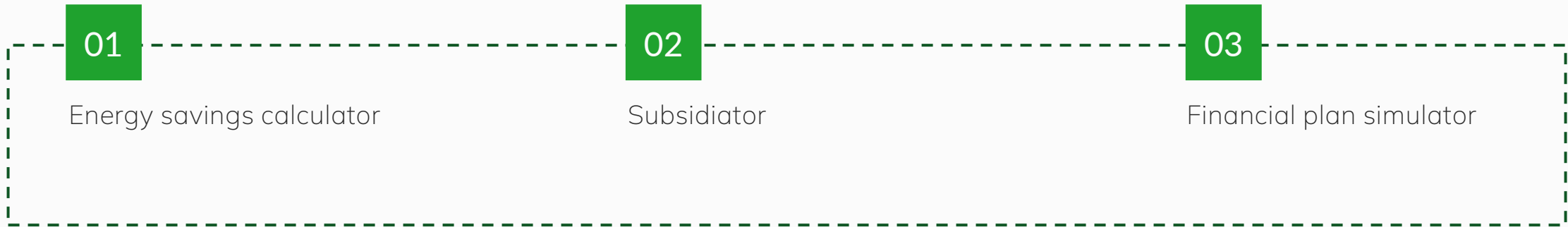
4 Financial plan simulator to pay for the renovation

Database of all existing subsidies, aids and grants in the field, promoting energy efficiency

5 Identify dataset for the ENGAGE portal (30%)



UCI Proposition: Tools





1. Energy Savings Calculator (Elektra Calculator)

Calculadora Elektra

¿Cuánto podrías ahorrar en tu casa con instalaciones más eficientes? ¿Necesitas una reforma energética en tu casa? Cuéntanos cómo es tu vivienda y nosotros nos encargamos del resto.

¿Cómo es tu vivienda?

☒ Piso ☐ Adosado ☐ Unifamiliar

Año de construcción: Entre 1981 y 2006
Número de vecinos: 1 a 5
Zona climática: Seleccionar
M2 útiles de la vivienda:

Exteriores

Fachada: Fachada estandar (en caso de no conocerla ...)
Tipo de ventanas: Seleccionar

Interiores

Tipo de suelo: Seleccionar
Aislamiento interior extra: ☐ Capa aislante en la parte interior de la vivienda

[Continuar](#)

Calentación

Tipo / Tecnología: Caldera individual
Materia prima: Gas natural
Antigüedad: Más de 10 años

Agua caliente sanitaria

Tecnología: Caldera individual
Materia prima: Gas natural
Antigüedad: Más de 10 años

Aire acondicionado

Tecnología: Tipo/Tecnología
Materia prima: Gas natural
Antigüedad: Más de 10 años

Renovables

Tecnología: No dispongo

Iluminación

En general tengo...: Selecciona
Y el resto...: Selecciona

Agua

☐ Cisterna doble pulsador ☐ Grifos de ahorro

Tarifificación

En caso de que suponga un ahorro...: ☐ Estaría dispuesto a cambiar de compañía de suministros de energía y/o a mejorar mi contrato a medida

[Anterior](#) [Ver resultado](#)

Vivienda Actual	G*
Gasto actual	3.132 €
CONSUMO	391.549 KWH
EMISIONES	88.519 KG CO2

Vivienda Eficiente
Gasto estimado
CONSUMO
EMISIONES

Si desea reducir el presupuesto de la reforma puedes configurar los siguientes elementos

Fachada: Si
Carpintería: Si
Climatización: Si
Renovables: Si
Iluminación: Si

Con una vivienda más eficiente ahorrarías hasta ...

1.845 € al año

Reforma estimada: 23.392 €

[SOLICITA MÁS INFORMACIÓN](#)

[Volver a realizar estudio](#)



2. Subsidiator

- A UCI tool that provides all the information about aids in three phases.

Encuentra SUBVENCIONES O AYUDAS PÚBLICAS para hacer de tu casa una vivienda más eficiente

¿Tengo derecho a una ayuda para rehabilitar mi vivienda?

¿EN QUÉ PROVINCIA?

¿QUÉ PRODUCTO?

buscar

Aplicar filtros

¿EN QUÉ PROVINCIA BUSCAR?

Madrid

¿CUANTO?

ACCIÓN

- ☒ T1 Envolvente térmica/fachada
- ☒ T2 Sistemas de climatización
- ☒ T3 Fotovoltaica/energías renovables
- ☒ T4 Accesibilidad
- ☒ T5 Producción Eléctrica y/o Térmica Compartidos
- ☒ T6 Accesibilidad

Subvenciones 2022 con destino a actuaciones de accesibilidad, conservación, eficiencia energética y salubridad de edificios existentes de uso residencial vivienda, "Plan Rehabilita Madrid 2022".

El fomento y promoción de la realización de actuaciones de accesibilidad, conservación, eficiencia energética y salubridad en edificaciones existentes con uso característico residencial vivienda.

Apertura el 24/06/2022 y cierre el 30/11/2022

INFORMACIÓN DE LA AYUDA

COMUNIDAD AUTÓNOMA:
Comunidad de Madrid
PRESUPUESTO:
53.000.000,00 €
TIPO DE SOLICITANTE:
Personas. Otras sin ánimo de lucro
ACCIÓN A LLEVAR A CABO:
Energía e Inversiones. Rehabilitación o acceso a la vivienda

PROVINCIA:
MADRID
TIPO DE AYUDA:
Subvenciones
ORGANO CONVOCANTE:
ÁREA DELEGADA DE VIVIENDA
LINK DE LA CONVOCATORIA:
PDE Oficial

9 resultados

SUBVENCIONES 2022 CON DESTINO A ACTUACIONES DE ACCESIBILIDAD, CONSERVACIÓN, EFICIENCIA ENERGÉTICA Y SALUBRIDAD DE EDIFICIOS EXISTENTES DE USO RESIDENCIAL VIVIENDA, "PLAN REHABILITA MADRID 2022".

ÁMBITO GEOGRÁFICO:
MADRID
PLAZO:
APERTURA EL 24/06/2022 Y CIERRE EL 30/11/2022
PRESUPUESTO:
53.000.000,00 €
CANTÍA MÁXIMA:
0,00 €
[MÁS INFORMACIÓN](#)

AYUDAS A LAS ACTUACIONES DE MEJORA DE LA EFICIENCIA ENERGÉTICA EN VIVIENDAS.

ÁMBITO GEOGRÁFICO:
COMUNIDAD DE MADRID
PLAZO:
APERTURA EL 01/06/2022 Y CIERRE EL 30/06/2023
PRESUPUESTO:
8.000.000,00 €
CANTÍA MÁXIMA:
3.000,00 €
[MÁS INFORMACIÓN](#)

AYUDAS A LAS ACTUACIONES DE REHABILITACIÓN A NIVEL DE EDIFICIO.

ÁMBITO GEOGRÁFICO:
COMUNIDAD DE MADRID
PLAZO:
APERTURA EL 01/06/2022 Y CIERRE EL 30/06/2023
PRESUPUESTO:
4.400.000,00 €
CANTÍA MÁXIMA:
0,00 €
[MÁS INFORMACIÓN](#)

¿TIENES UN PROYECTO?
CONSULTANOS PARA AYUDARTE CON SU FINANCIACIÓN.

Contactar



El presente documento se extiende al día indicado en su encabezado en respuesta a su solicitud de información, y no conlleva para la entidad la

Biblioteca Beneficente Mirta - Informe de resultadosHospeda Beneficada Mita - Informe de resultados



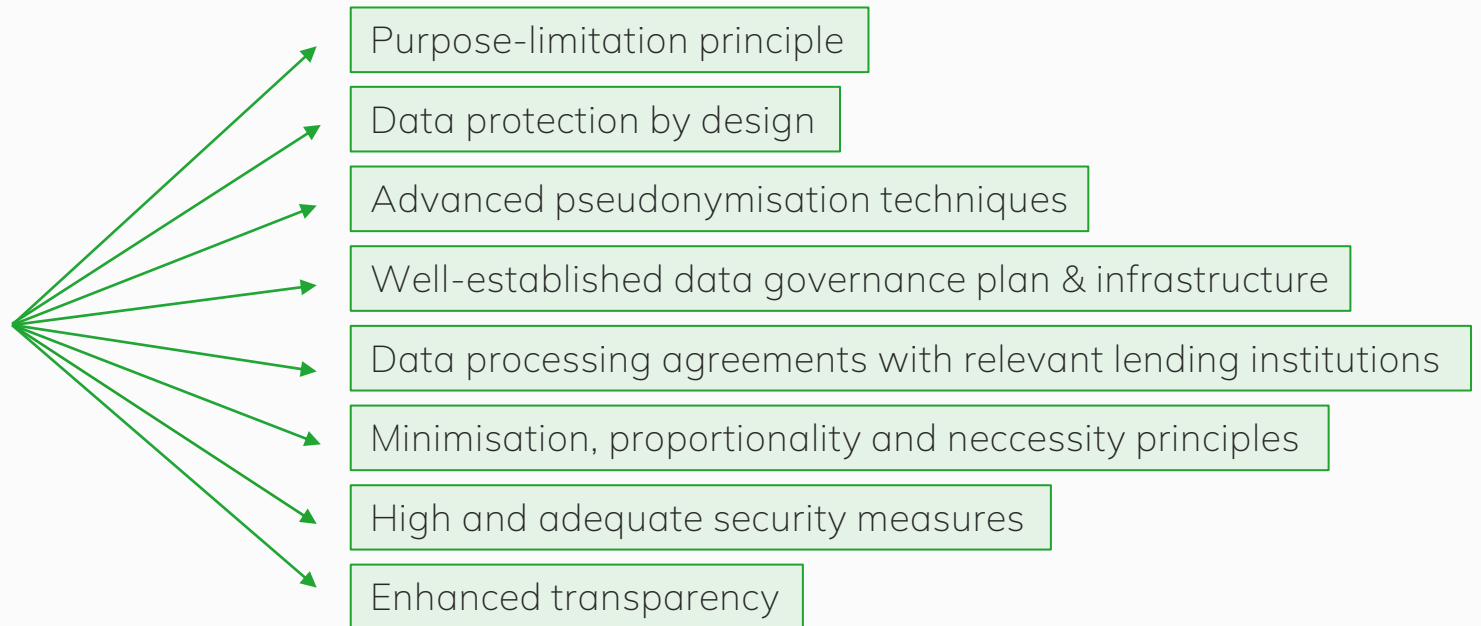
Spanish Pilot Phase

- Commercial process
- Digital one-stop-shop for boosting the green renovation on residential buildings
- Location: Madrid, Barcelona, Valencia y Sevilla
- KPI'S: investors for the retail side (clients): Building green renovation-186 (in 3 years) 18 approx..
250.000€/per building = 46.5M€ in total. It would affect 186 buildings considering 5 floors per building and 4 flats for each floor, it has been considered 3720 individual houses to be convinced of the renovation wave (18x5x4)



Privacy & Data Protection Aspects

- ENGAGE greatly relies on personal data to achieve its goals and extract its value. Therefore, it is fundamental to fully implement the rules and safeguards provided for by the Regulation (EU) 2016/679 (the “GDPR”).
- It achieves these goals with an established methodology and the support of renown experts in the field of compliant and innovative legal solutions.
- One of the challenges of ENGAGE is to fully preserve the protection of individuals’ rights AND achieve innovative goals.





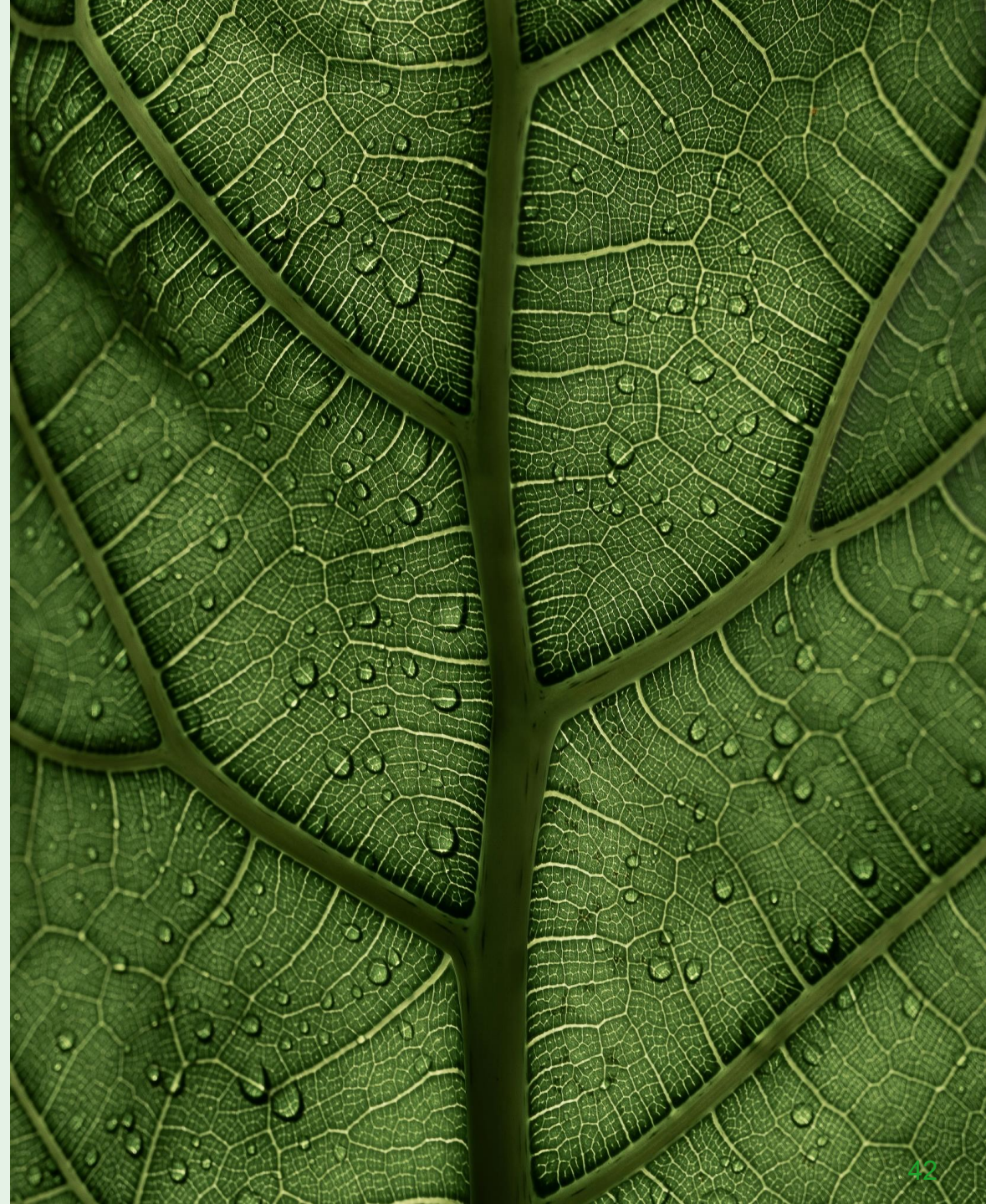
PANEL: Exploring the Relevance of ESG Data: Practical Examples & Lessons Learned

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Energy Efficiency & Mortgage Default

- The literature has started to investigate the relationship between the energy efficiency of residential buildings and the credit risk of home mortgages, and evidence of this relationship does exist.
- Findings show that attribute “energy efficiency” improves the risk models in predicting the probability of default (Billio et al., 2021; Billio et al., 2022; Guind and Korhonen, 2022).
- Three potential channels:
 - Personal Traits of the borrowers captured by the choice of an EE building(e.g., Environmental Awareness);
 - Improvements in building performance that help free up a borrower’s disposable income (lower utility bills);
 - The positive effect on the dwelling value and thus on the loan-to-value ratio.



Measuring the Probability of Default

- The probability of default for a borrower can be estimated using information that incorporates various factors, including borrower's information and other controls such as the geographical area, real estate data, and macroeconomic variables.
- Energy efficiency data has recently been included as well. For instance, if we consider the logistic regression

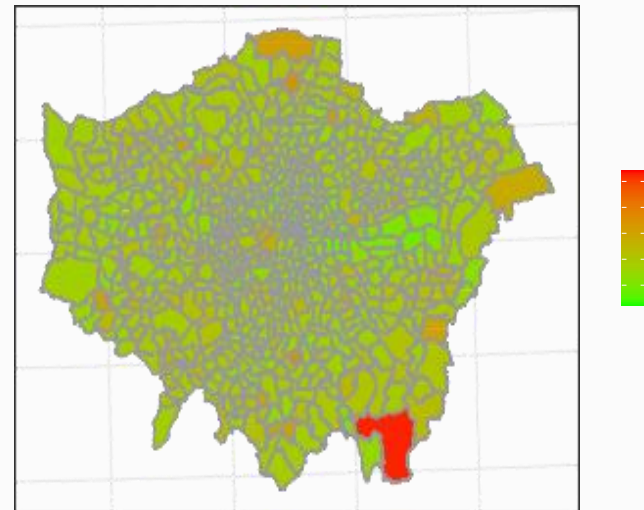
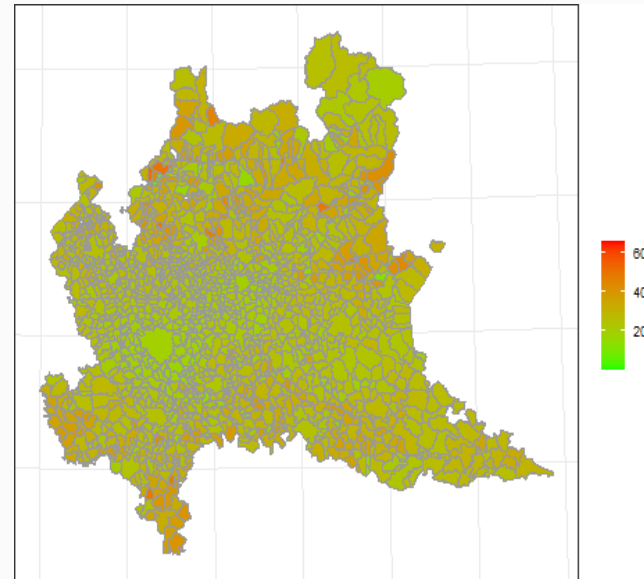
$$P(\text{Default}) = \text{logit}^{-1} (\beta_0 + \beta_{EE} \cdot EE + \beta_X \cdot X + \beta_Z \cdot Z)$$

- Where:
 - EE represents the energy efficiency data,
 - X represents the borrower's information,
 - Z represents other control variables, and
 - $\beta_0, \beta_{EE}, \beta_X, \beta_Z$ are the estimated coefficients.

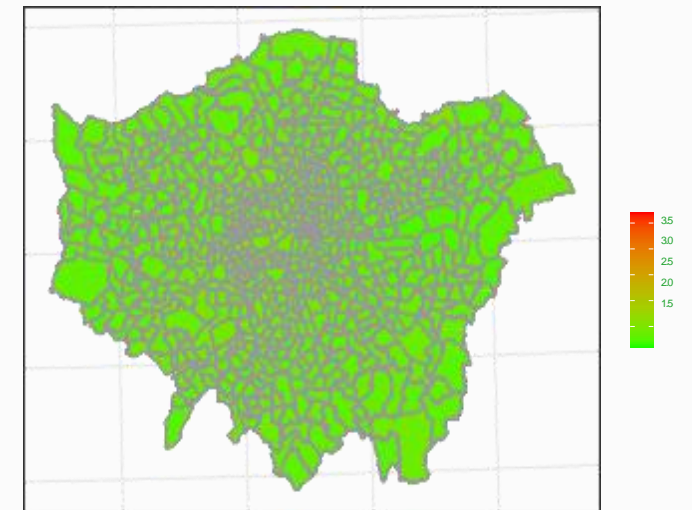
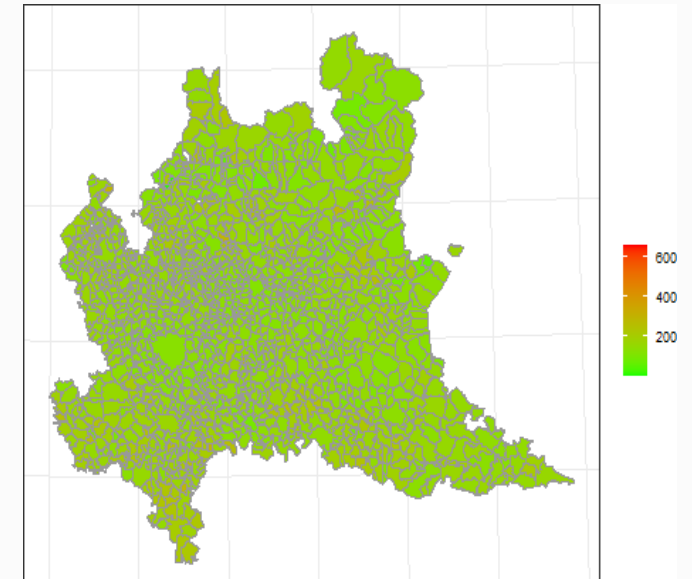


ENGAGE Scenario Analysis

Actual



Forecast based on ECP data





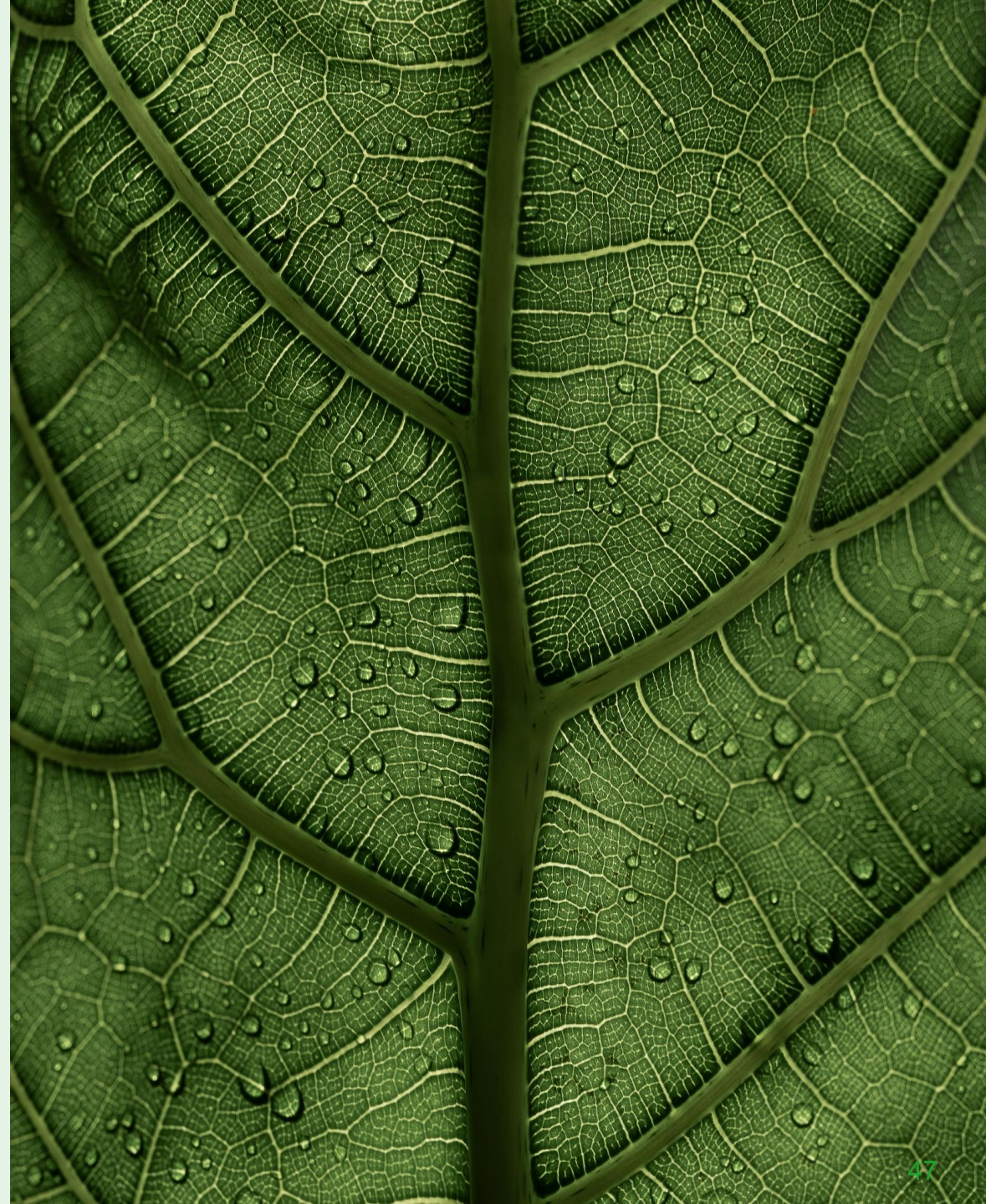
Conclusions

- The inclusion of energy efficiency information, such as the Energy Performance Certificate (EPC) , can provide valuable insights into the underlying risk associated with the properties.
- The EU Taxonomy presents an opportunity to enhance the credit risk measurement incorporating more detailed and granular data.
- Incorporating additional factors, such as specific energy-saving measures and building characteristics, can lead to a more comprehensive and accurate assessment of energy efficiency.
- Improved energy efficiency data will benefit the monitoring activity of the existing European building stock and will have significant implications for the financial sector, enabling better risk management and lending decisions.



Closing Remarks

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Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

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