Energy Efficient Mortgages Initiative

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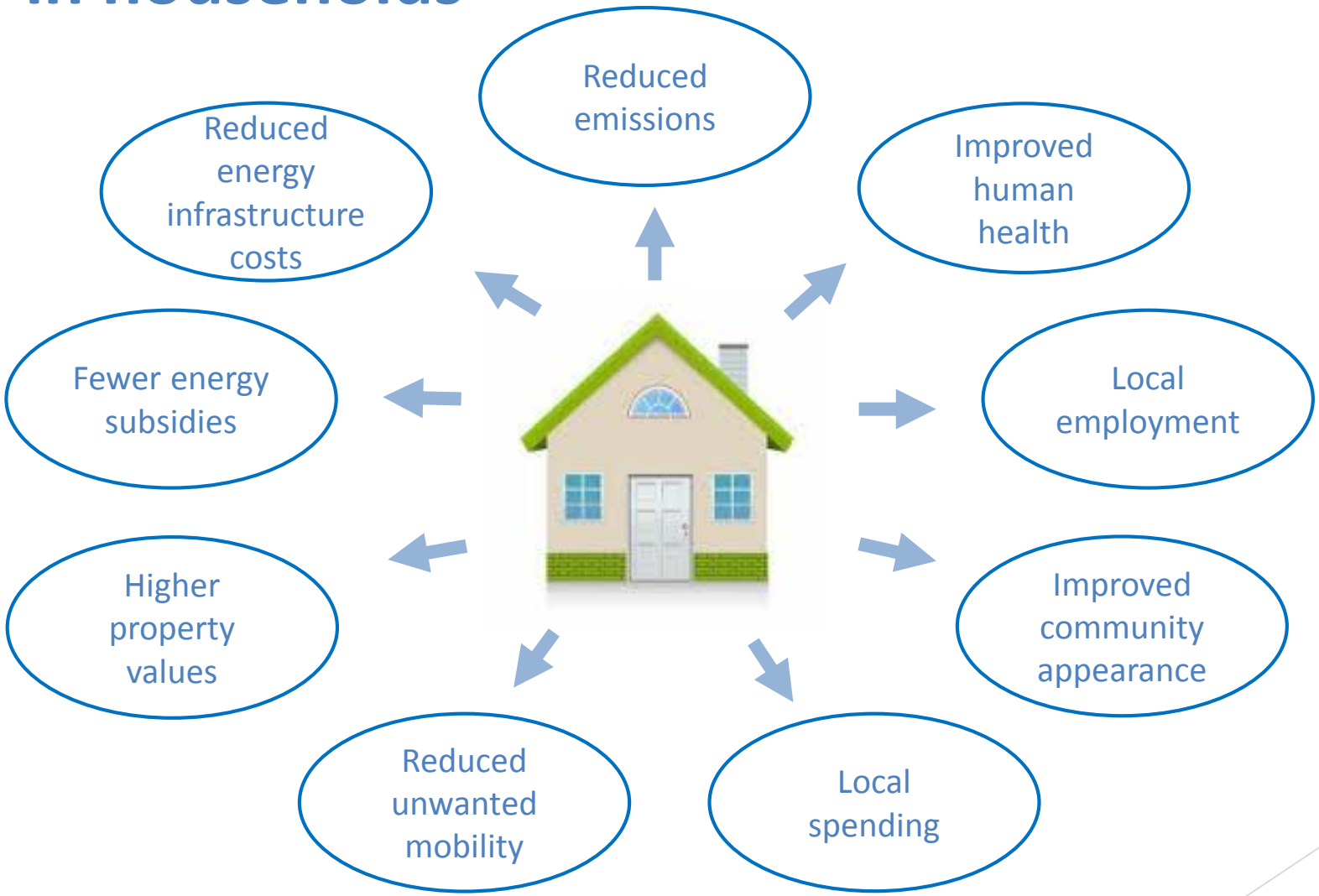
- ✓ Energy efficient Mortgages Action Plan (EeMAP)
- ✓ Energy efficient Data Portal & Protocol (EeDaPP)

Specific benefits from energy efficiency (EE) in households



How can banks play a game changing role in improving Energy Efficiency?

In the EU 28 there are…

510 million people

7498 MFIs and 188,109 branches

247 million dwellings

…of which

More than 350 million live under their own roof

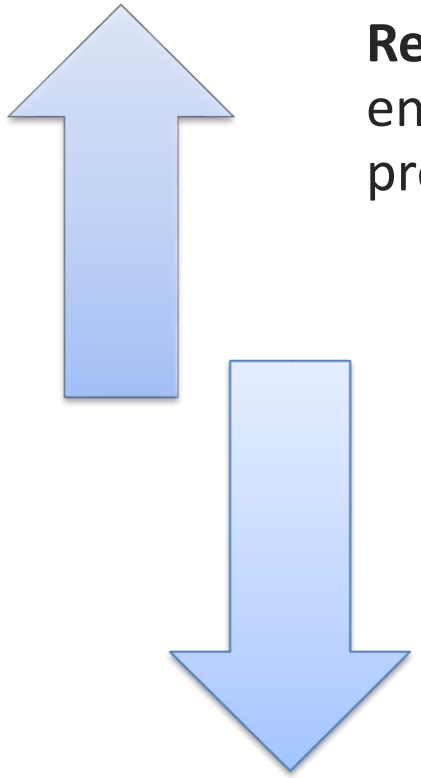
Private financing →

On average each branch serves around 2,700 people

more than 220 million dwellings were built before 2001

This initiative has huge potential!

Underlying risk parameters impacted by EE



Retrofitting impacts positively on property value ensuring **wealth conservation** & **loss mitigation** by preventing "brown discount"

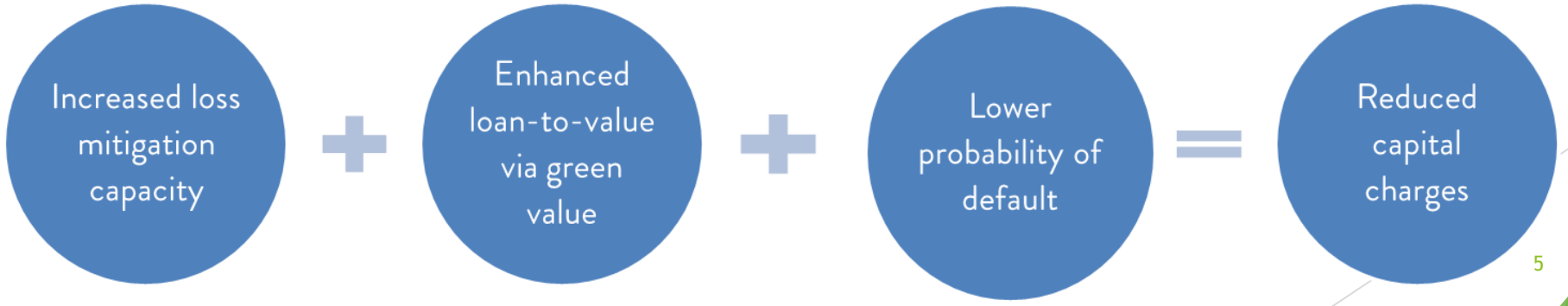
EE leads to a reduction in the impact of energy costs to income, reducing borrowers' **probability of default**

Objective & Underlying Business Case

The **ultimate objective** is a pan-European private bank financing mechanism, based on a standardised approach, to encourage energy efficient improvement by households of the EU's housing stock by way of financial incentives linked to the mortgage, and in this way support the EU in meeting its energy savings targets.

Independent from, but complementary to, public funds or tax incentives

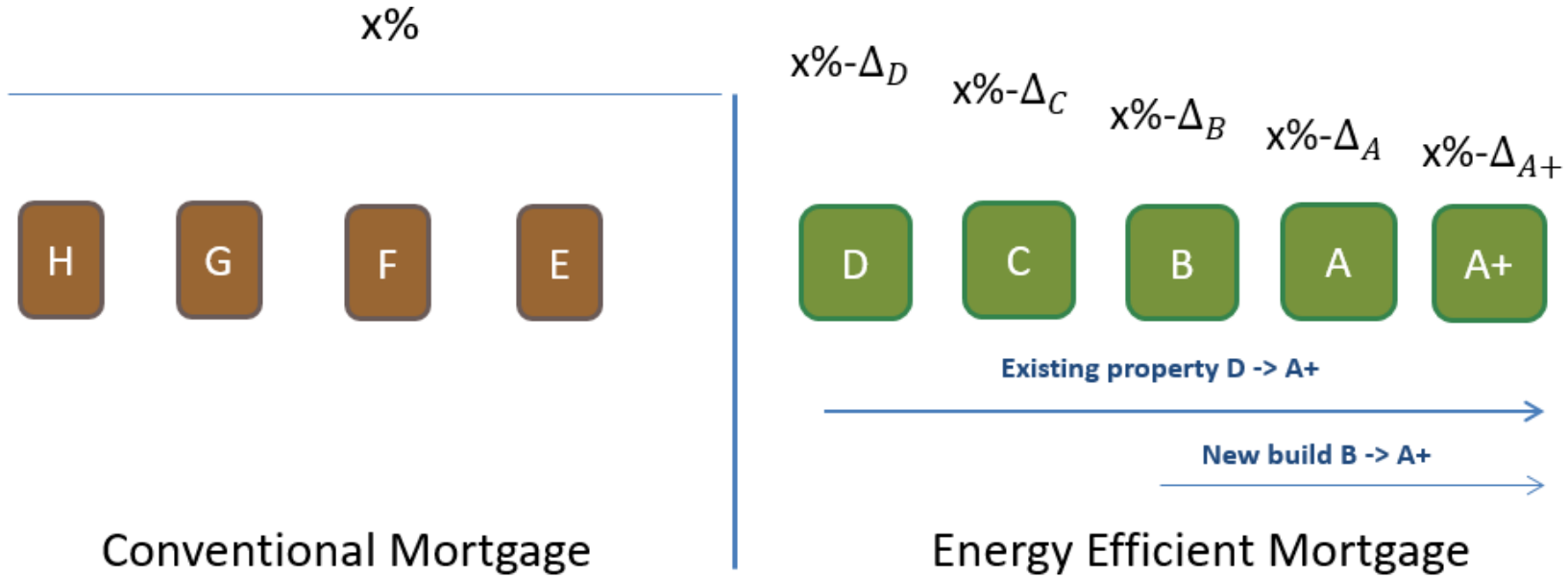
Underlying business case



Methodology - Financing mechanism

- Key challenge: **to incentivise energy efficient investment in existing dwellings**, which constitute bulk of EU housing stock

- Based on a **set of EE indicators**, lenders could offer:
  - *New Builds:* Discount in interest rate for new builds with energy rating A+/A or B;
  - *Existing property:* Discount in interest rate according to improvement in energy rating of property between D and A/A+



x%: mortgage interest rate

EE delta: $\Delta_{A+} > \Delta_A > \Delta_B > \Delta_C$

Bridging Renovation Gap - In Practice

EE Renovation

Before EE Renovation

After EE Renovation

Mortgage application

Energy efficiency advisor (EEA) to advise on:
1. Necessary EE renovation
2. Complementary funding sources (subsidies)

Mortgage granted & EE top-up provided directly to SME

SME carries out EE renovation, guaranteeing performance

Bank grants preferential interest rate on mortgage based on EE/smart meter

T_0

Ex ante Valuation of property

Qualified SME selected by bank to carry out EE renovation

EEA certifies EE renovations in line with EE requirements

Ex post valuation of property

T_1

EE Impact on Properties?

Every time a house moves up a notch in energy performance, its price gets around the same boost that it would from an extra 10-15 m² in size

EE jump = Gain of €24,000 over 30 years:

- A renovated house that moves from an 'E' to a 'B' notch in its energy performance certificate (EPC) will save an estimated €24,000 over 30 years according to an analysis of 365,00 house sales in Denmark last year

EE notch= €5,400/€7,400 for an average 100 m² property:

- Each one-notch energy improvement from G-A is worth between €5,400-7,400 to an average 100 m² property according to a Copenhagen Economics Study for the Danish Energy Agency

Correlation between EE and sale price?

- A European Commission assessment in 2013 found that in Vienna, a one-notch EPC improvement corresponded with an 8% rise in the sale price. In Flanders (BE), the equivalent of a one-notch upgrade was found to trigger a 4.4% rise in property value, while for Marseille and Lille (FR), the figure was 4.3%.

Broader Perspective

Better Risk Management:

- Lower Credit Risk: Due to reduced probability of default and loss given default
- Lower Asset Risk: Due to “green value” and protection against “brown discount”
- Lower Performance Risk: Due to robust assessment of EE improvement ensuring lower energy consumption and ”green value”

Financial Stability:

- Increased due diligence for consumers, issuers and investors
- De-risking of banks' balance sheets and management of non-performing loans
- Enhanced transparency and pricing in the market

Jobs and Growths:

- Improvement in private investment in EE improvement via retrofitting
- Support for SMEs and contribution to job agenda under Junker Plan

Incentive Chain

Borrower:
- Lower energy bills
- Energy Efficiency Behaviour
- Lower interest rate on mortgage for energy efficient property
- Free capital for retrofitting

SME/ Real Economy:
- SMEs active in the retrofitting of buildings and dwellings to become more energy efficient
- Juncker Plan

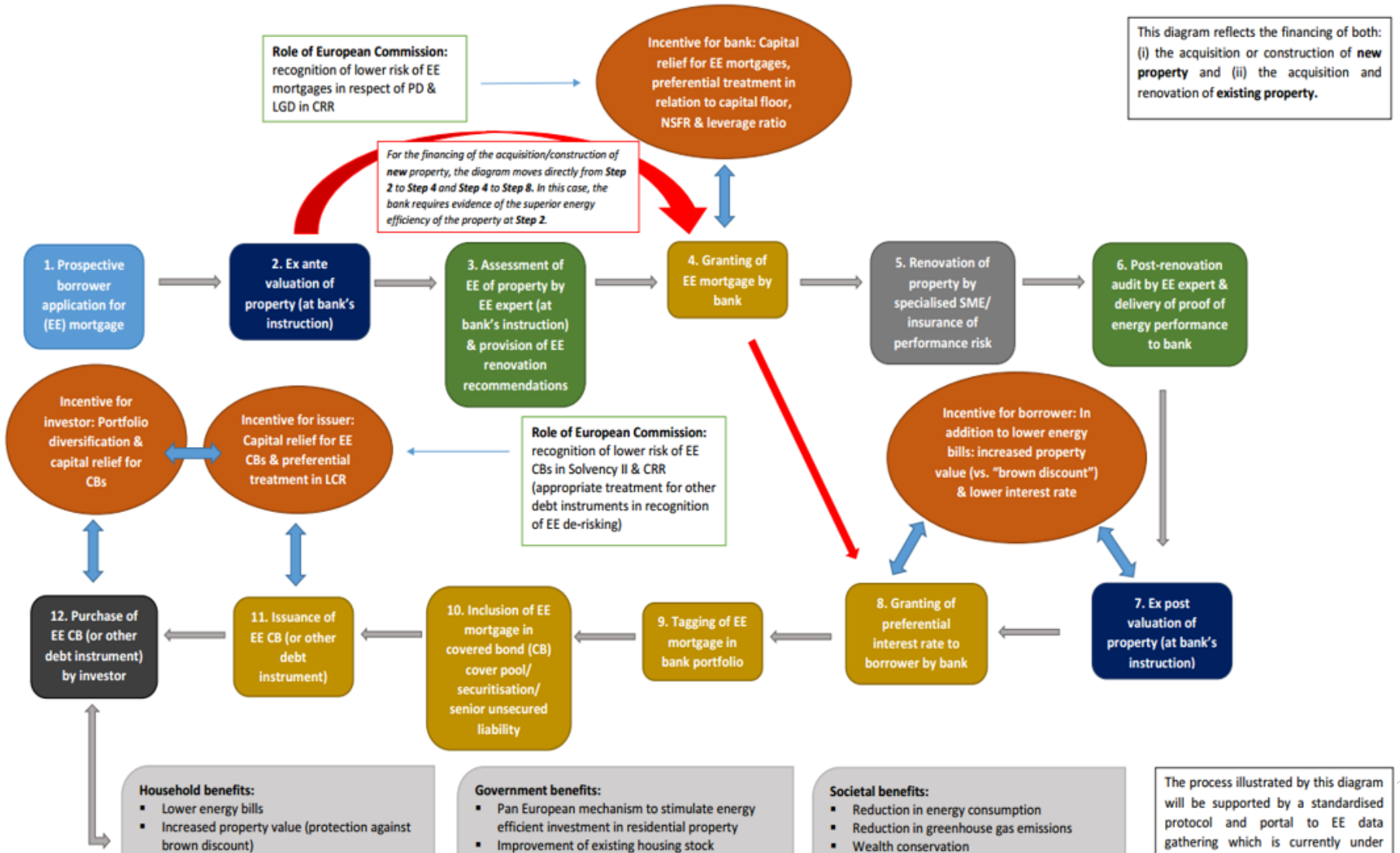
Issuer/Originator:
- Access to funding cost advantages
-Increased loss mitigation capacity
- Lower capital requirements as a result of lower PD
- Reputational benefits

Society:
- Reduction in energy consumption
- Wealth conservation
- Reduction in greenhouse gas emissions

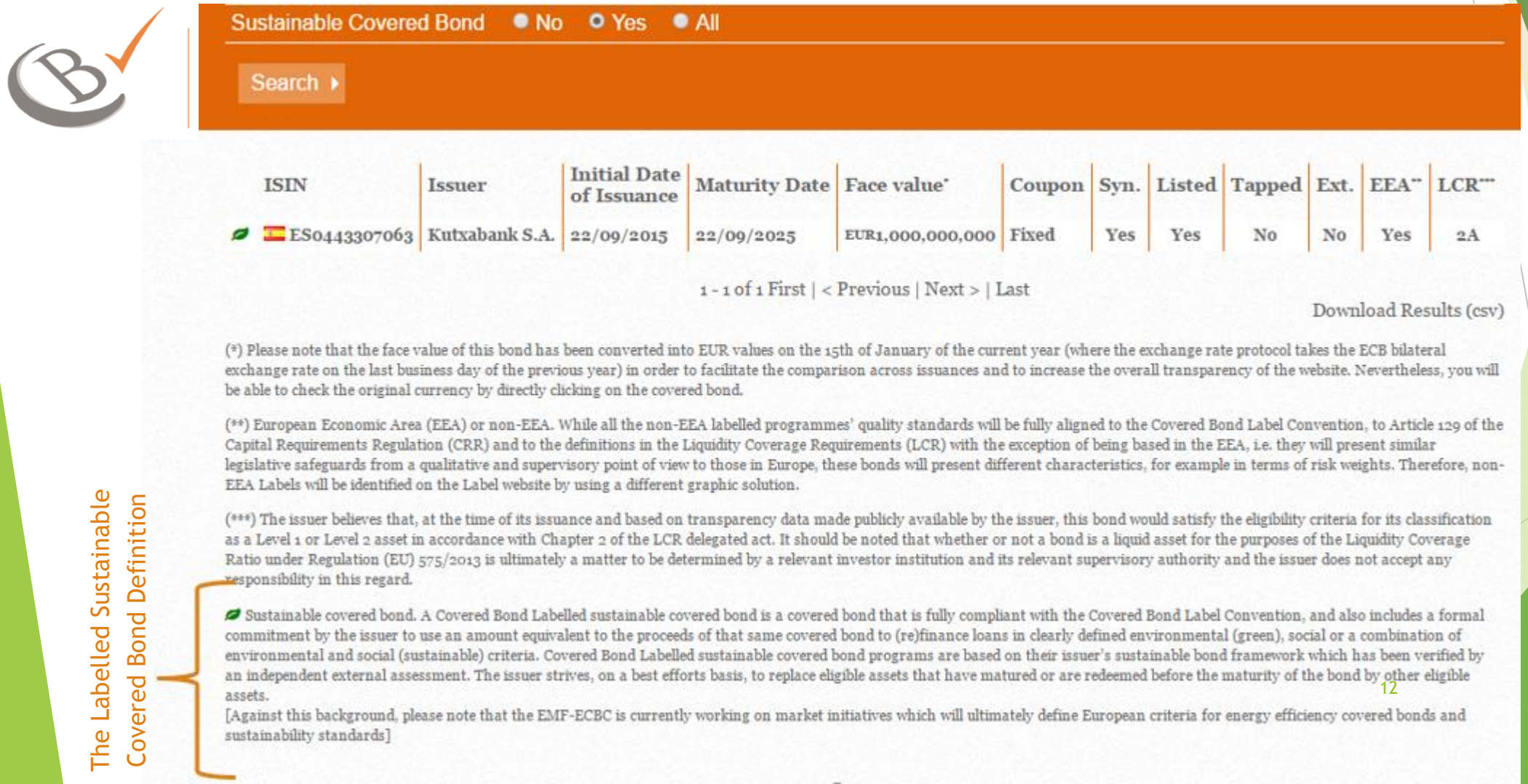
Investor:
- Diversification of investor portfolio
- Allocation of energy efficient investment buckets
- Green added value vs brown discount

Government:
- Pan European plan to stimulate energy efficient investment in residential property
- Improvement of existing housing stock
- Compliance with 1997 Kyoto Protocol – COP21
- Access to quantitative & qualitative database on energy efficient mortgages & covered bonds

EE & Mortgage Lending & Covered Bond Value Chain



Covered Bond Label: Sustainable Covered Bonds



ISIN	Issuer	Initial Date of Issuance	Maturity Date	Face value*	Coupon	Syn.	Listed	Tapped	Ext.	EEA**	LCR***
ES0443307063	Kutxabank S.A.	22/09/2015	22/09/2025	EUR1,000,000,000	Fixed	Yes	Yes	No	No	Yes	2A

1 - 1 of 1 First | < Previous | Next > | Last

Download Results (csv)

(*) Please note that the face value of this bond has been converted into EUR values on the 15th of January of the current year (where the exchange rate protocol takes the ECB bilateral exchange rate on the last business day of the previous year) in order to facilitate the comparison across issuances and to increase the overall transparency of the website. Nevertheless, you will be able to check the original currency by directly clicking on the covered bond.

(**) European Economic Area (EEA) or non-EEA. While all the non-EEA labelled programmes' quality standards will be fully aligned to the Covered Bond Label Convention, to Article 129 of the Capital Requirements Regulation (CRR) and to the definitions in the Liquidity Coverage Requirements (LCR) with the exception of being based in the EEA, i.e. they will present similar legislative safeguards from a qualitative and supervisory point of view to those in Europe, these bonds will present different characteristics, for example in terms of risk weights. Therefore, non-EEA Labels will be identified on the Label website by using a different graphic solution.

(***) The issuer believes that, at the time of its issuance and based on transparency data made publicly available by the issuer, this bond would satisfy the eligibility criteria for its classification as a Level 1 or Level 2 asset in accordance with Chapter 2 of the LCR delegated act. It should be noted that whether or not a bond is a liquid asset for the purposes of the Liquidity Coverage Ratio under Regulation (EU) 575/2013 is ultimately a matter to be determined by a relevant investor institution and its relevant supervisory authority and the issuer does not accept any responsibility in this regard.

Sustainable covered bond. A Covered Bond Labelled sustainable covered bond is a covered bond that is fully compliant with the Covered Bond Label Convention, and also includes a formal commitment by the issuer to use an amount equivalent to the proceeds of that same covered bond to (re)finance loans in clearly defined environmental (green), social or a combination of environmental and social (sustainable) criteria. Covered Bond Labelled sustainable covered bond programs are based on their issuer's sustainable bond framework which has been verified by an independent external assessment. The issuer strives, on a best efforts basis, to replace eligible assets that have matured or are redeemed before the maturity of the bond by other eligible assets.
[Against this background, please note that the EMF-ECBC is currently working on market initiatives which will ultimately define European criteria for energy efficiency covered bonds and sustainability standards]

The Labelled Sustainable Covered Bond Definition

How to solve the ‘chicken & egg’ dilemma

Assets	Liabilities
EE mortgages • collateral	EE bonds • Covered Bonds • Securitisation

European Investment Fund (EIF)

Investor Demand

National Promoting Banks: Green Purchase Programs

European Investment Bank (EIB)

EeMAP Pilot Phase: Existing Data Analysis & Operational Test Phase

Phase 1: Analysis of Existing Data:

- Substantiation of business case
- Focus on correlation between EE and LGD & PD

Phase 2: Operational Test Phase:

- Deployment of valuation instructions & EE indicators
- Origination of EE mortgage product
- Potential involvement of EIB/EIF
- Data collection

EeMAP Pilot Phase Guidelines

Three set of guidelines which should be considered in order to ensure successful implementation of an Energy Efficient Mortgage product within banks' existing internal procedures:

I. EeMAP Implementation Guidelines for Banks

II. Valuation Guidelines: Energy Efficiency Checklist

III. Building Performance Assessment Guidelines

All three sets of guidelines are scheduled to go into public consultation in February 2018, after which the final sets of guidelines are excepted to be presented officially at an **EeMAP & EeDaPP Stakeholder Event** planned to take place on **14 June 2018** in London, followed by the start of the EeMAP Pilot Phase

Available on the EeMAP website here: http://energyefficientmortgages.eu/04-downloads/

List of Banks Involved in EeMAP initiative

- ABN Amro
- BNP Paribas Fortis
- ING
- Münchener Hypothekenbank
- UniCredit
- Crédit Foncier de France
- Barclays
- Berlin Hyp
- Crédit Agricole CIB
- Volksbank Bozen
- Caja Rural de Navarra
- Cooperative Central Bank Cyprus
- NIBC Bank N.V.
- Obvion Hypotheken
- Crelan
- BBVA
- JP Morgan
- Banca Monte dei Paschi di Siena
- Fannie Mae
- DBS Bank Singapore
- Japan Housing Finance Agency
- HSBC
- KBC

Technical Committees

- The **Banking & Finance Committee** is made up of financial experts from a wide range of jurisdictions and financial institutions with key knowledge of risk parameters, financial and investment structures and green funding criteria and which have extensive experience with mortgage origination, refinancing and covered bond funding processes.
- The **Energy Efficiency Committee** consists of energy, energy efficiency and building experts from a wide range of jurisdictions and organisations with extensive knowledge and expertise spanning the entire building value chain.
- The **Valuation & Data Committee** brings together real estate and valuation experts and financial data management platforms and vendors, information service providers from a wide range of jurisdictions and institutions.
- In addition, the EeMAP has an **Advisory Committee** consisting of national, European and International Institutions which provide regulatory and policy guidance on the key elements of the Initiative and insight into the requirements needed to trigger institutional support.
- State of play of the Technical Committee….

Political Environment in Brussels

European Commission - Vice-President Dombrovskis:

- "Looking positively at amending capital charges for banks to boost green investments and loans. This could be done at first stage by lowering capital requirements for certain climate-friendly investments, such as energy-efficient mortgages or low-carbon cars. However, this exercise would be delicate. Green does not mean risk-free. Any measures would have to be carefully calibrated, and based on a clear EU classification.

High-Level Expert Group on Sustainable Finance – Final Report:

- "Europe has the unique opportunity to build the world's most sustainable financial system"
- It sets out a package of eight recommendations that will make it happen

Capital Requirements Regulation - Review:

- Introduces the idea of a "green supporting factor" in the draft ECON report, which is an recognition of the importance of stimulating investment in green assets as part of the EU's broader sustainable energy agenda.

Energy Performance of Buildings Directive - Review:

- Current draft refer to "energy efficient mortgages" and "lower risk weight for collateral with certified energy efficiency renovations" in recital
- Will be voted on in April 2108

Energy Efficient Mortgages Initiative

EeMAP Website: http://energyefficientmortgages.eu/

EeMAP 2-page Introduction:http://energyefficientmortgages.eu/wp-content/uploads/2017/06/EeMAP-Two-page-introduction.pdf

EeMAP Emerging Analysis: http://energyefficientmortgages.eu/wp-content/uploads/2017/07/Emerging-Analysis-1.pdf

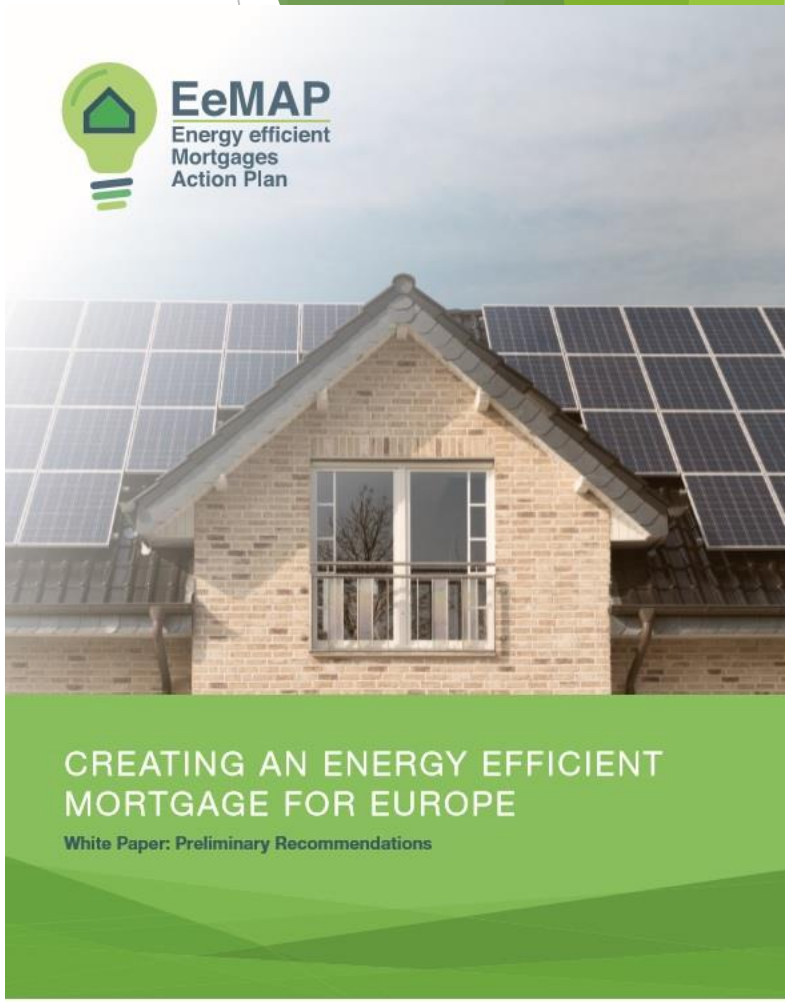
EeMAP Upcoming Events:
http://energyefficientmortgages.eu/?page_id=1016

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 746205.

EeMAP White Paper

- **Overview** of current practices in relation to **finance**, **energy efficiency indicators**, **property valuation** and the impact of **energy efficiency on risk management**
- **Key recommendations** towards the creation of an Energy Efficient Mortgage product for Europe

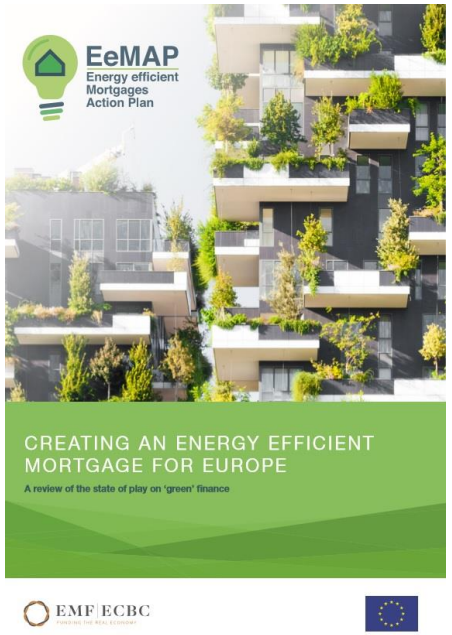
1. **A simple & standardised framework** for Energy Efficient Mortgage to help market entry allowing for national heterogeneity, with guidance on the underlying finance mechanism
2. **A clear definition of an Energy Efficient Mortgage** to enable banks to differentiate between energy efficient and conventional mortgages in their risk management processes
3. **Energy efficiency in property valuations.** To ensure that energy efficiency is appropriately taken account of in property valuations, banks should be guided on how and what to instruct property valuers in relation to energy performance of buildings
4. **Simple and proportionate energy efficiency performance indicators**, with flexibility to take account of differences between current national approaches



The EeMAP White Paper is available on the EeMAP website:
http://energyefficientmortgages.eu/wp-content/uploads/2017/10/EeMAP-White-Paper.pdf

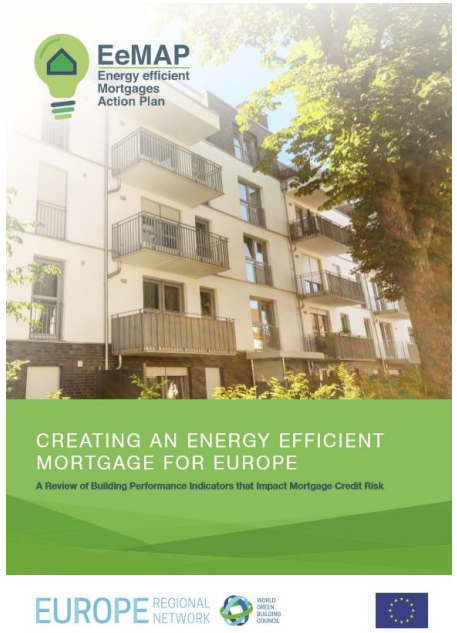
Four EeMAP Technical Reports

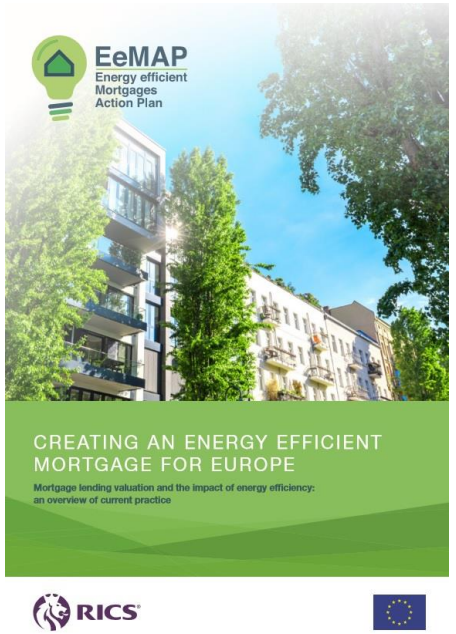
- The research findings are detailed in the **four EeMAP Technical Reports:**



'Green' Finance

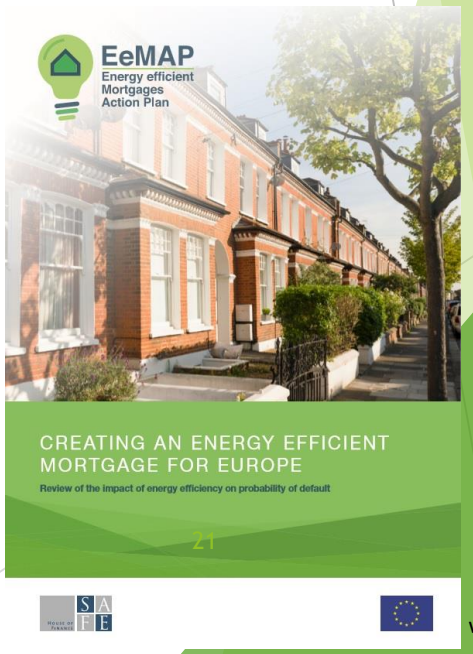
Building Performance Indicators





Mortgage lending valuation

EE Impact on probability of default



Energy Efficient Mortgages Initiative

EeMaPP

EMF | ECBC
FUNDING THE REAL ECONOMY

Università Ca'Foscari Venezia

RICS

e·on

House of Finance

EUROPE REGIONAL NETWORK

WORLD GREEN BUILDING COUNCIL

EeDaPP

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HYPOPORT

TXS FUNDING SOLUTIONS

CRIF
Together to the next level

EUROPEAN DATAWAREHOUSE

House of Finance

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