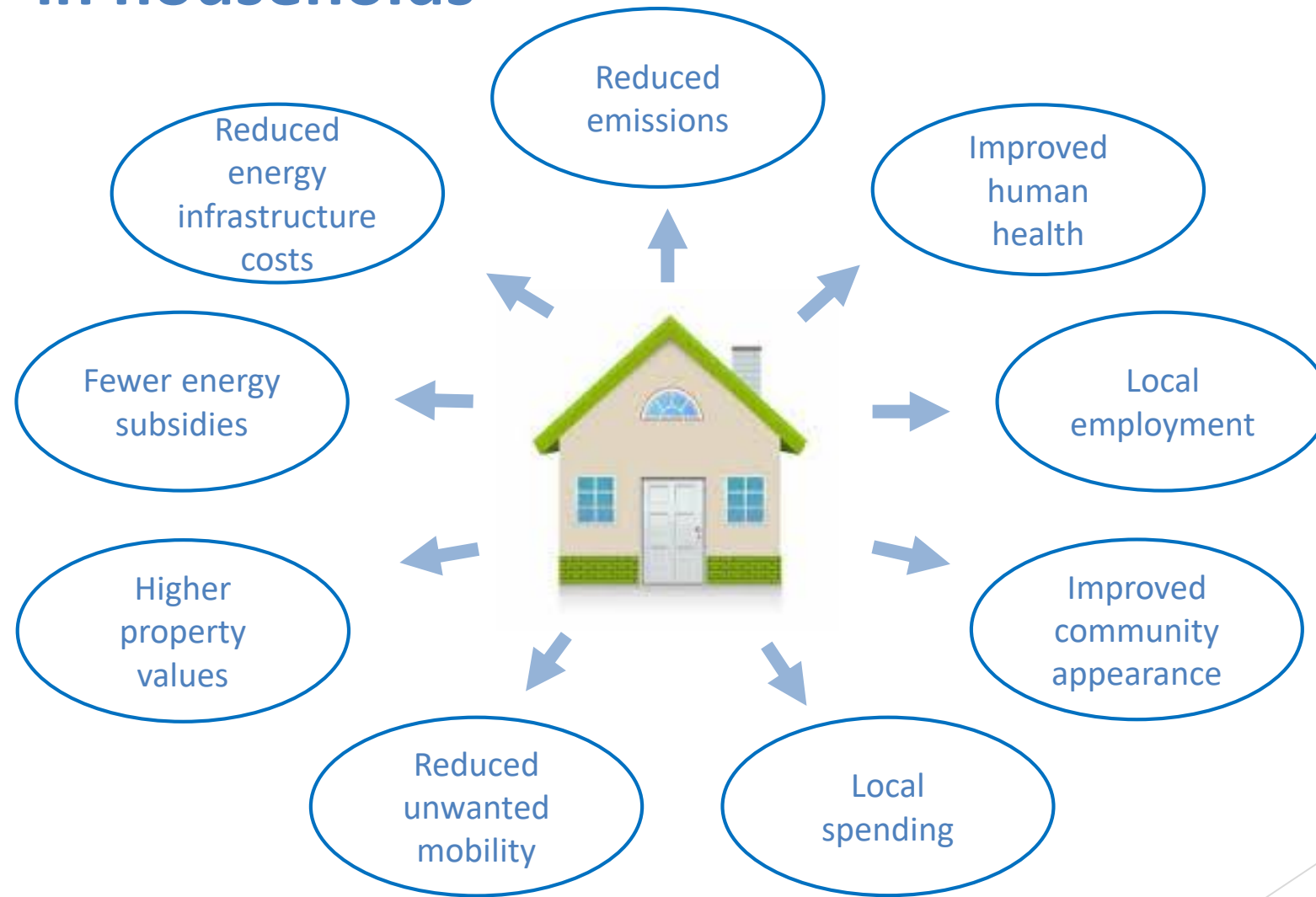


Energy efficient Mortgages Action Plan (EeMAP) Initiative



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

...of which

More than
350 million
live under
their own
roof

Private financing
→

On average
each branch
serves
around
2,700 people

This initiative
has huge
potential!

more than
220 million
dwellings
were built
before 2001



7498 MFIs
and
188,109
branches



247 million
dwellings



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

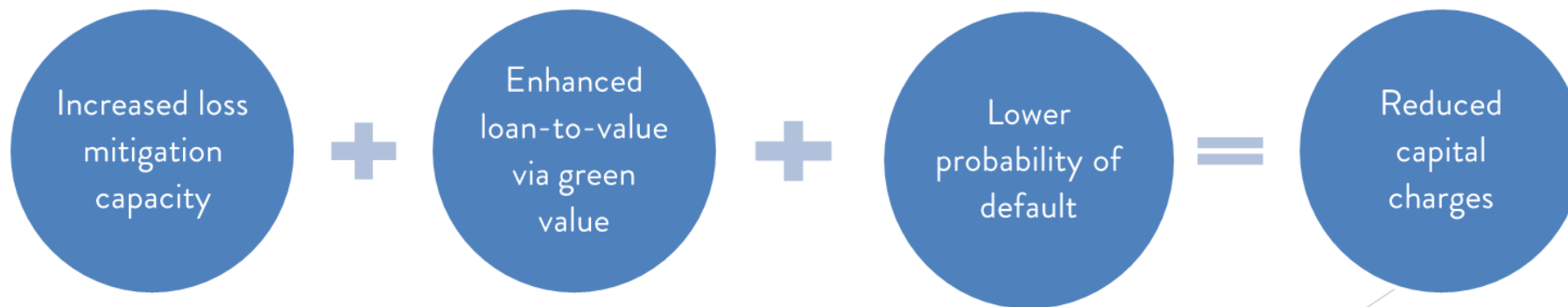


Objective & Underlying Business Case

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.

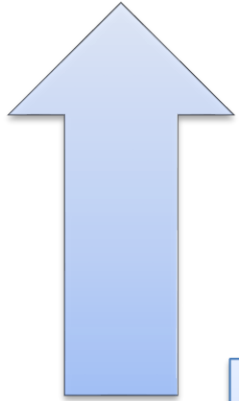
Independent from, but complementary to, public funds or tax incentives

Underlying business case

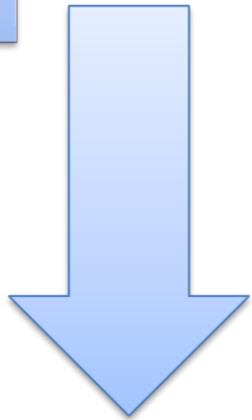




Underlying risk parameters impacted by EE



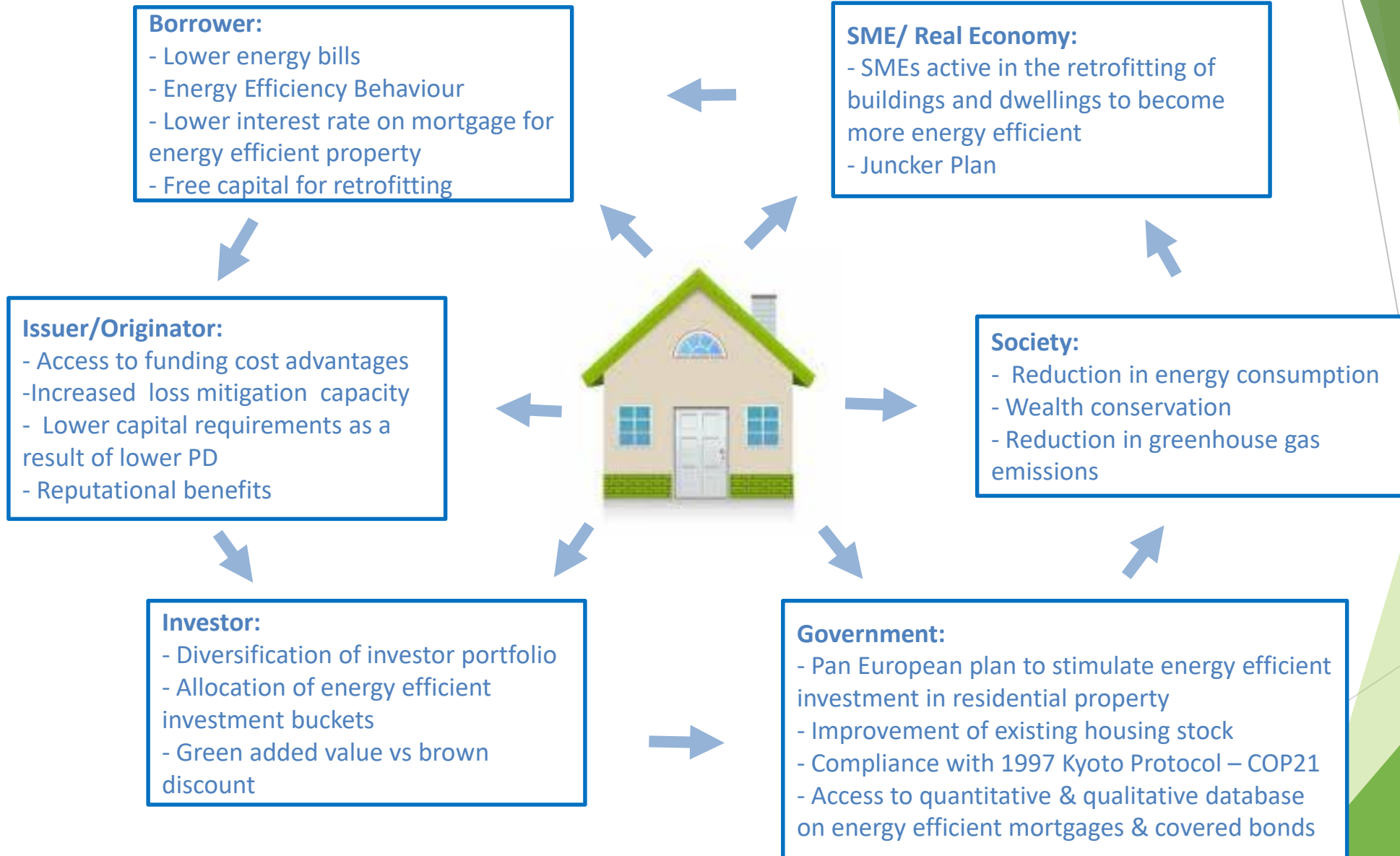
Retrofitting impacts positively on property value ensuring **wealth conservation & loss mitigation** by preventing “brown discount”



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



Incentive Chain





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%.

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

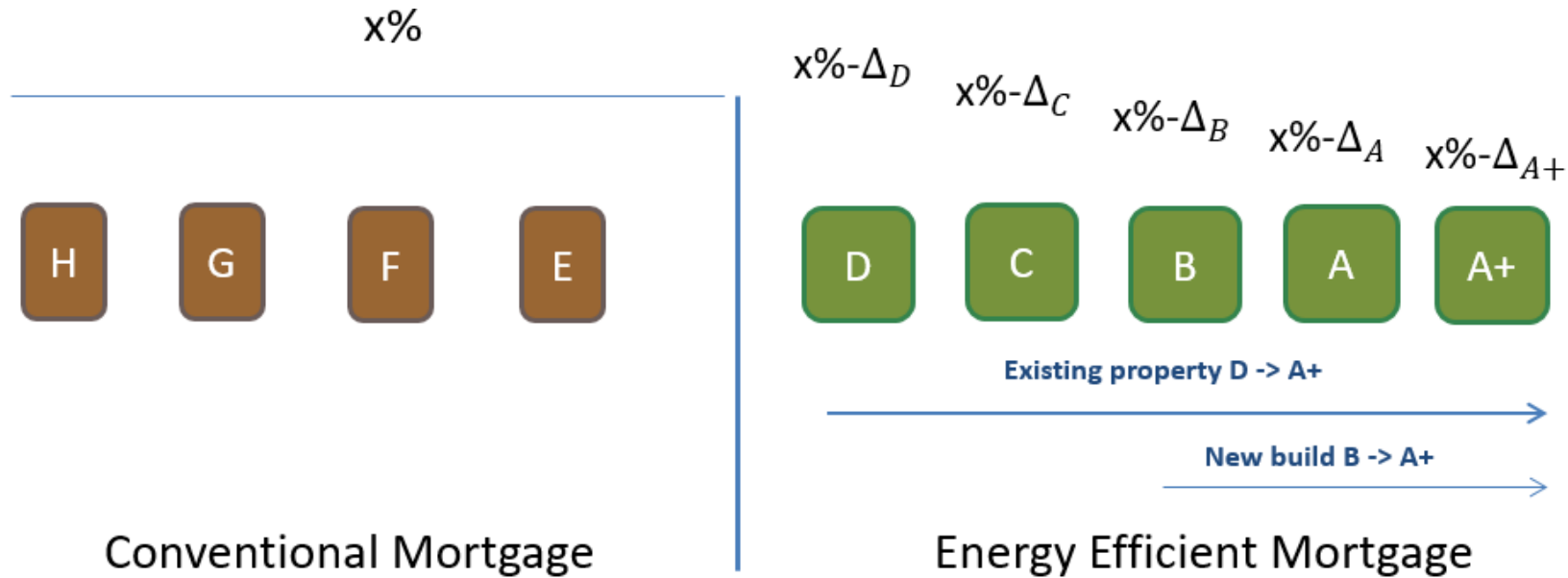
Jobs and Growths:

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



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+



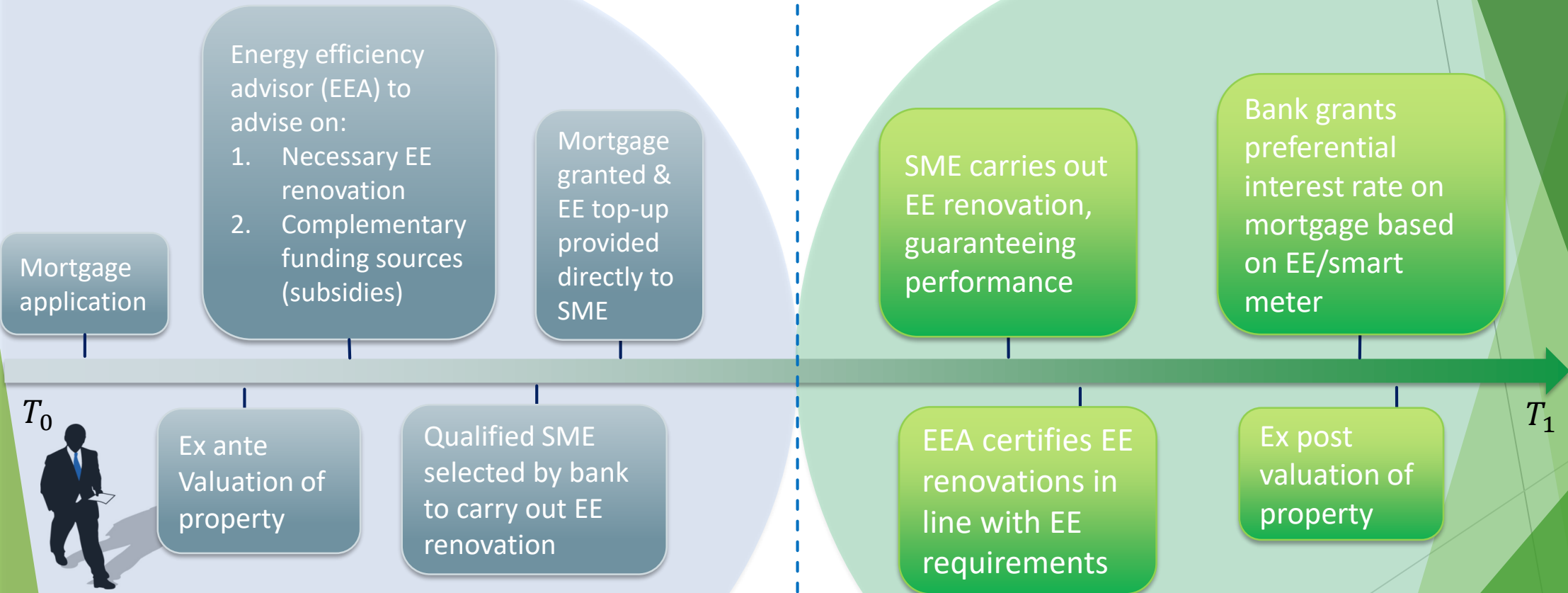
$x\%$: mortgage interest rate
EE delta: $\Delta_{A+} > \Delta_A > \Delta_B > \Delta_C$

Bridging Renovation Gap - In Practice

EE Renovation

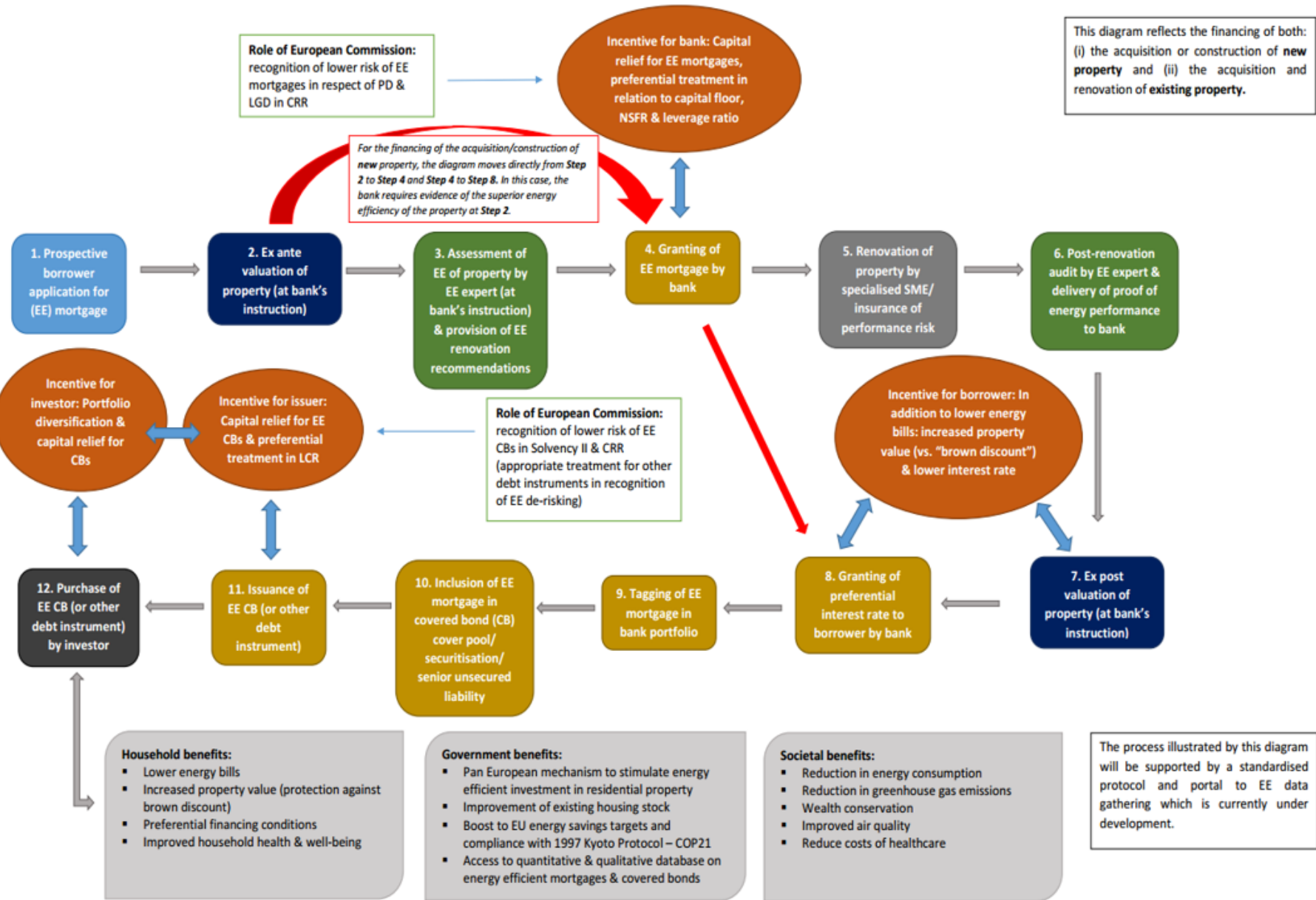
Before EE Renovation

After EE Renovation





EE & Mortgage Lending & Covered Bond Value Chain





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

June
2017

June
2018

May
2019

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)



Covered Bond Label: Sustainable Covered Bonds



Sustainable Covered Bond No Yes All

Search ▶

| 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

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



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>



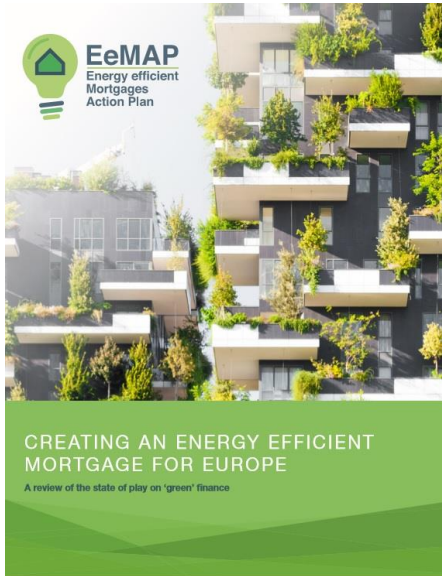
CREATING AN ENERGY EFFICIENT
MORTGAGE FOR EUROPE

White Paper: Preliminary Recommendations

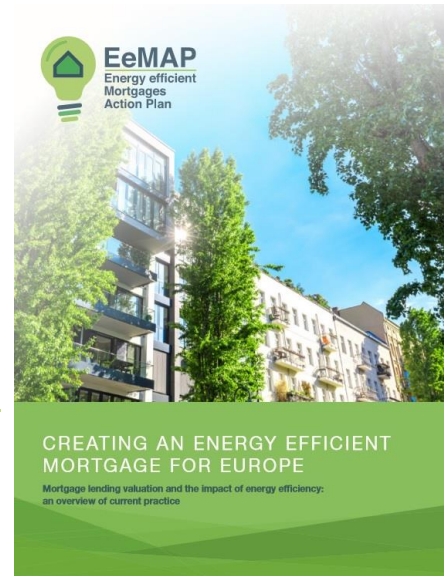


Four EeMAP Technical Reports

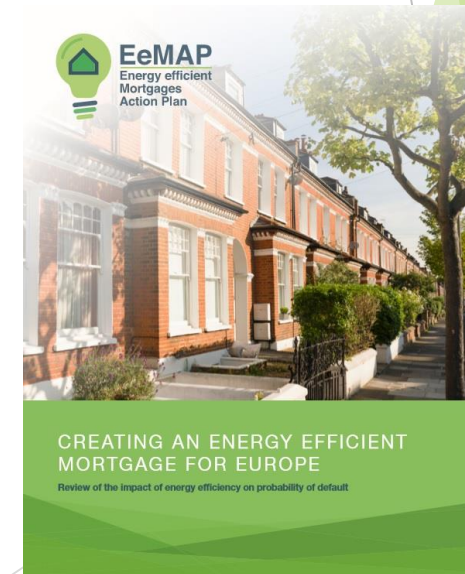
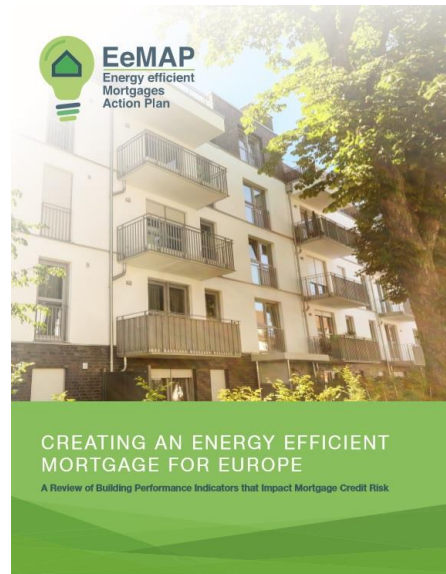
- The research findings are detailed in the **four EeMAP Technical Reports**:



Building Performance Indicators



EE Impact on probability of default



The Energy efficient Mortgages Action Plan – EeMAP - is an initiative by:





Energy efficient Data Protocol and Portal (EeDaPP) Initiative



Energy efficient Data Protocol and Portal (EeDaPP)

The **EeDaPP Initiative** aims to design and deliver a market-led **protocol**, which will enable the large-scale recording of data relating to energy efficient mortgage assets (loan-by-loan), via a standardised reporting **template**. The data will be accessed by way of a common, centralised portal, allowing for continuous tracking of the performance of the energy efficient mortgage assets, thereby also facilitating the earmarking of such assets for the purposes of energy efficient bond issuance.

In this way, EeDaPP will build on and complement the Energy Efficient Mortgages Action Plan (EeMAP) Initiative, the aim of which is to design a private bank financing mechanism, according to which homeowners are incentivised to improve the energy efficiency of their residential properties by way of preferential financing conditions linked to the energy efficient mortgage.

Standardised data collection and reporting will also be at the heart of the forthcoming EeMAP Pilot Phase, during which banks will originate energy efficient mortgage products and in which all financial institutions under the EMF-ECBC umbrella are invited to play an active role.

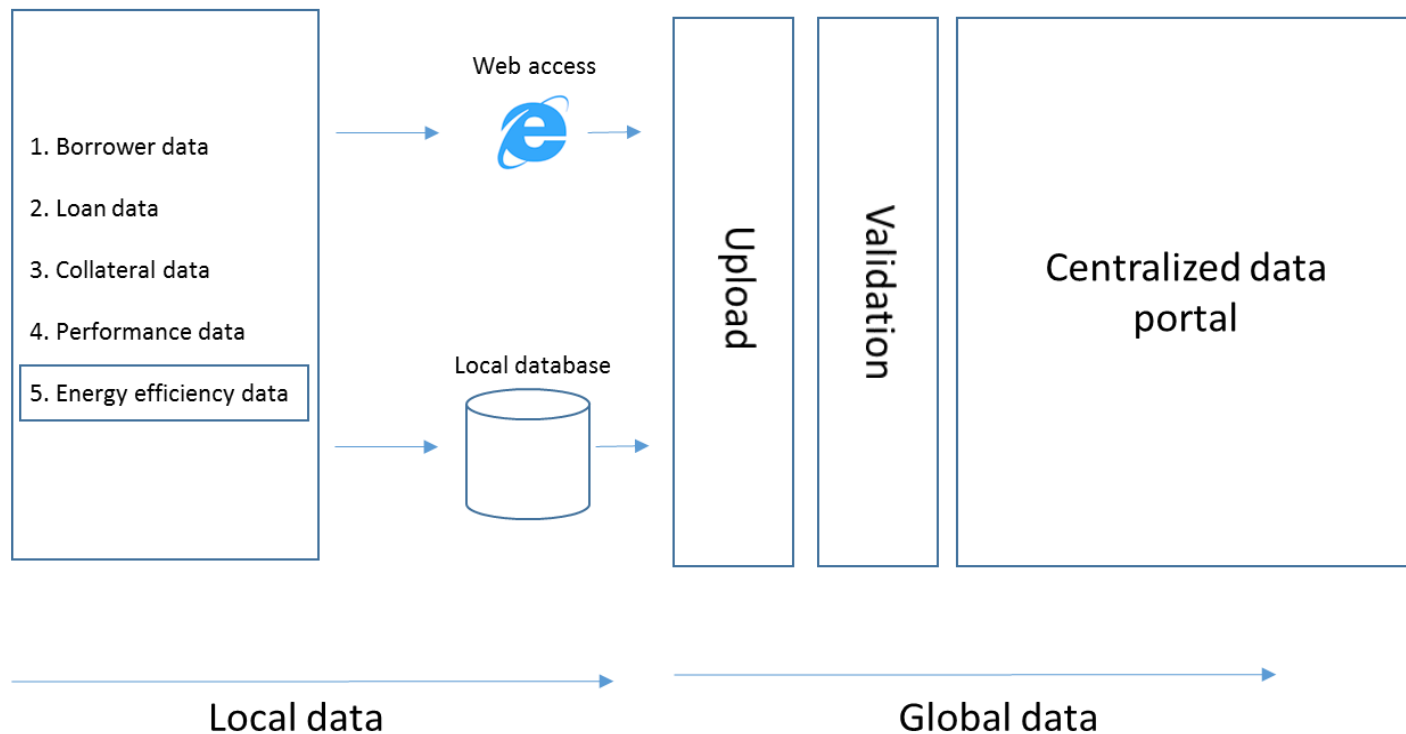
During the course of the EeDaPP, the EMF-ECBC and its partners will concretely undertake 5 'operational' Work Packages, each with a clear set of deliverables:

- ▶ Identification and summary of market best practices within data systems
- ▶ Definition of energy efficiency reporting criteria
- ▶ Design and delivery of standardise data protocol & common centralised portal
- ▶ Data and correlation analysis
- ▶ Roadmap for system integration



EeDaPP – Standardised Data Protocol*

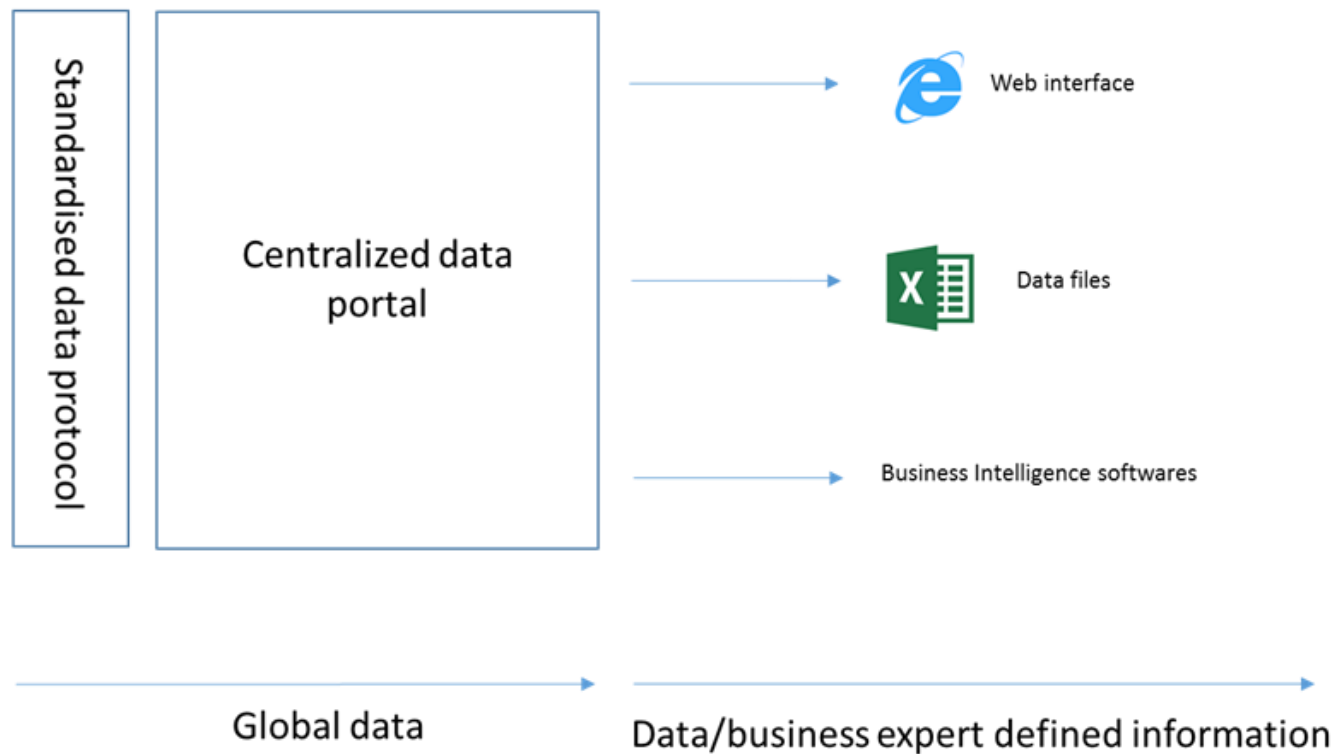
Standardised data protocol



*The above illustration represent a preliminary draft. At present it is foreseen that the protocol will be based on a high-level, three-step approach to data gathering.



EeDaPP – Centralised Data Portal*



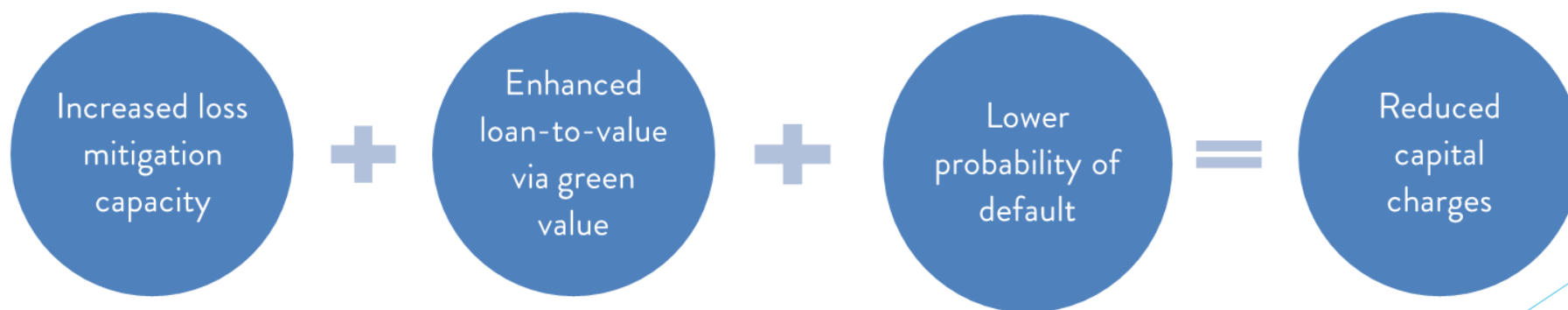
*The above illustration represent a preliminary draft. At present it is foreseen that the portal will be based around a high-level concept for a European approached to information gathering and processing.



Synergies & Underlying Business Case

The EeDaPP will complement EeMAP in the creation of a pan-European private bank financing mechanism, based on a standardised approach to data gathering, 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.

Underlying business case





The Energy efficient Data Protocol and Portal – EeDaPP - is an initiative by

