

ROAD MAP FOR AN EE MORTGAGES INITIATIVE

Madrid 21 September 2016





WHY A PAN-EUROPEAN APPROACH?

- Buildings are responsible for 40% of EU energy consumption
- Buildings are responsible for 36% of CO2 emissions in the EU
- 75-90% of EU building stock is predicted to remain standing in 2050
- Improving EE of buildings could reduce EU energy consumption by 5%-6% and CO2 emissions by 5%
- EU has set itself an overall 20% energy savings target by 2020 and is now considering increasing this to a 30% target by 2030
- Scale of investment needed to meet the 2020 target is estimated at €100 billion per year – European Commission has underlined need for private investment



OBJECTIVE & UNDERLYING BUSINESSES 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





ENVIRONMENTAL IMPACT OF HOUSING IN THE EU

Breakdown Energy Consumption in the EU



Breakdown of CO2 Emissions in the EU Fuel Combustion Activities in 2012 (MT** of CO2)



*million tons of oil equivalent: a unit of energy defined as the amount of energy released by burning a tonne of crude oil **million tons

EU Total Emission Fuel Combustion in 2012: 3495.2 Mt** Source: Eurostat



ENVIRONMENTAL IMPACT OF HOUSING IN THE EU ENERGY CONSUMPTION - CHARTS

Co2 emissions per capita per year for housing in kg



EMF ECBC Source: Eurostat

HOUSING COST IN DISPOSABLE INCOME

Share of housing costs in disposable income, by income group (2014)





Source: Eurostat

HEAT OR EAT DILEMMA





Source: SILC Eurostat

AGE STRUCTURE OF DWELLINGS IN EUROPE

Age structure of dwellings in the EU



Source: Eurostat, Census 2011

- This graph highlights stock of dwellings built between 1946 and 1981
- Countries have been ordered from those with highest share of dwellings built in that period of time to smallest
- Romania leads ranking with nearly 60% of its building stock coming from that period.
- Also 51% of Italian dwellings were built in the 35 years after WW2
- Overall in the EU, dwellings in this period count for 44% of the total
- From the larger countries, France has smallest amount of dwellings from this period, only 37%



AGE STRUCTURE OF DWELLINGS IN EUROPE



Age Structure dwellings in Europe

- In most EU Member States, considerable share of total number of dwellings was built during post-war period, between 1946 and 1980
- In Italy, nearly 60% of existing dwellings were built during that period, 45-50% in Germany, the Baltics, Greece, Hungary, Finland and Sweden
- Post 2000, several new dwellings were built in Ireland, Greece, Poland, Portugal and Spain
- In Belgium and in the UK between 20% and 25% of dwellings were built before 1919



EMF-ECBC EE Mortgages Initiative



UNDERLYING MARKET CHARACTERISTICS 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**



SEVERAL STUDIES ILLUSTRATE EE POSITIVELY IMPACT PROPERTY VALUE

Study	Country	Sample	Label type	Type:	Major findings
Brounen and Kok (2011)	Nether- lands	2008- 2009	A-G	Sales	Significant positive effects on sales prices. Relative to a D-label: A (10.2 %), B (5.5 %), C (2.1 %), E (-0.5%), F (-2.3 %) and G (-4.8 %).
Hyland et al. (2013)	Ireland	2008- 2012	A-G	Listing price	Significant positive effects on sales & rental prices. Sales prices relative to a D-label: A(9.3 %), B (5.2 %), C (1.7 %), E (0 %), F/G(- 10 %)
Sbi (2013)	Denmark	2011- 2012	A-G	Sales	Significant positive effects on sales prices. Relative to a D-label: A/B (6.4 %), C (6 %), E (-6.2 %), F (- 12.3 %) and G (-19.4 %).
Fuerst et al. (2015)	UK	1995- 2012	A-G	Sales	Study show a measurable and significant positive effects on hourse prices. Dwellings with EPC sell: A/B (5 % premium), C (1.8 %), C (1.7 %), E (-0.7 %), F(-0.9 %) and G(-6.8 %).
Copenhagen Economics (2015)	Denmark	2006- 2014	A-G	Sales	Clear and significant influence on house prices: A (10.2%), B (6.6%),C (3.5%),D (0.0%), E (-3.6%),F (-7.6%), G (-12.1%)
CRIF (2016)	Italy	2012- 2015	A-G	Valuation	Direct correlation between property value and energy efficiency - study demonstrates under- valuation of more energy efficient properties and over-valuation of less energy efficient propeties: A (-12.53%),B (-8,02%), C (- 4.53%), D (-2,98) E (-0,65%), F (0.04%), G(3.79%)
Kok and Kahn (2012)	USA, Cali.	2007- 2012	Green Label	Sales	California homes labelled with an Energy Star, LEED or GreenPoint rating sell for 9% more than comparable houses.



UNDERLYING INCENTIVE CHAIN

Borrowers:

- Preferential interest rate and/or addition retrofitting funds
- Increased property value due to retrofitting, ensuring wealth conservation
- Lower running costs of the building

Lenders:

- Energy savings result in a lower PD due to increased disposable income
- Increased risk mitigation capacity as increase in property value reduces LGD
- \Rightarrow Lower capital requirements for energy efficient mortgages
- Protection of loan portfolio against brown discount

Investors:

- Response to increasing investor demand for investments with sustainable aspect
- Diversification of investor portfolio & protection against brown discount
- Incentivises segregation of existing green assets
- Increased risk management in terms of credit, asset & performance risk

SMEs:

- Additional funds provide a flow of capital into the real economy
- Supports SMEs activity in the retrofitting sector

FURTHER ASPECTS

Valuation Profession:

- EE is strong potential value driver & risk factor and integration of EE in valuations & credit risk assessment could transform current lending practices
- Whilst conventional market-based valuation methods are fit to account for EE features in valuations, there is limited quality rental & sales evidence to allow valuers to accurately determine incremental value impact
- Initiative could be help to overcome this by building up evidence base and explicitly instructing banks and valuers to request, collect & make use of additional data

Consumer Behaviour:

- Initiative can also influence consumer behaviour by encouraging good energy behaviour, thus reducing energy consumption (energy bills)
- Academic literature demonstrates potential for energy savings of up to 20% via targeted behaviour

Better Risk Management:

- Lower Credit Risk: Due to reduced PD and LGD
- 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"



EE'S IMPACT ON POSSESSIONS OF MORTGAGES



Source: Fitch Ratings

- Available data show that rate at which properties are taken into possession - one reason for repossession may be default on mortgage loan - rises during the first 3 to 4 years after origination, peaking in years 4 to 5
- This is because it takes time for personal circumstances of borrower to deteriorate to degree that he/she is no longer able to service loan
- Once this critical period has passed, main factors for default are principally personal events, such as illness or divorce



BROADER PERSPECTIVE

Jobs and Growths:

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

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

European Commission, Climate and Energy Framework

- Aims to encourage EE investment in buildings
- EE Directive requires Members States to:
 - Establish and periodically update long-term strategies for investment in renovation of national buildings blocks;
 - Oblige energy companies to achieve yearly energy savings of 1.5% of annual sales to final consumes;
 - Increase consumer awareness of energy consumption & transparency of data
- Energy Performance of Buildings Directive and EE Directive are both being reviewed by the European Commission to ensure ambitious framework



METHODOLOGY



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: $\Delta \downarrow A + > \Delta \downarrow A > \Delta \downarrow B > \Delta \downarrow C$

METHODOLOGY - ADDITIONAL FUNDS VIA RECOGNITION OF "GREEN VALUE"(I)



Example 2: LTV remains 80 % in return additional funds for retrofitting at the same interest rate

$$LTV \downarrow 0 = 80 + 8 10 = 80\%$$

Without cash advance factoring in EE improvement

$$LTV \downarrow 0 = 80/100 = 80\%$$

Without EE improvement





METHODOLOGY - ADDITIONAL FUNDS VIA RECOGNITION OF "GREEN VALUE" (II)

- It is key that improvement in LTV, due to increase in EE, can be factored into credit risk assessment of bank
- BCBS is reviewing SA for credit risk, point 52 on page 35 of BCBS December 2015 Consultation states:

"Modifications made to the property that unequivocally increase its value could also be considered in the LTV"

This mechanism will allow:

- Increased value to be factored in at origination
- Borrowers to carry our retrofitting works
- Provide a flow if capital into the real economy



METHODOLOGY - EE INDICATORS

Three pillar approach to certification of actual energy performance:

EU standard: Delta in Energy Performance Certification Consumption Indicator: Delta in Energy Bill/Occupants

Demand Indicator*

The metrics and value will bring the mortgage industry in-line with the EU on energy

*One possibility: The EE Directive (2012/27/EU) foresees an 'energy performance contracting' which is a contractual arrangement between the beneficiary and the provider of an EE improvement measure, verified and monitored during the whole term of the contract, where investments (work, supply or service) in that measure are paid for in relation to a contractually agreed level of EE improvement or other agreed energy performance criterion, such as financial savings.



METHODOLOGY - DATA WAREHOUSE



IT Data warehouse Platform

- Mortgage data line by line
- EE data levels unit by unit
- Funding instruments adopted
- Enhance asset liabilities management
- Increase market transparency
- At the heart of Initiative is a comprehensive "dataset" on actual financial performance of existing mortgages according to their energy rating.
- Data gathered will be processed and analysed in order to understand the impact of EE on borrowers' PD and on LGD.
- Results of the analysis will be made available to the public free of charge.
- Longer-term intention is to compile this extensive dataset in a common & central "data warehouse" to clearly register and record link between property, energy rating & loan performance, so that these assets can be identified for "green" funding purposes, for example.



METHODOLOGY – BUILDING ENERGY PASSPORT

Energy Efficient passport for buildings

• For building owners

Energy Efficient Passport fo

- Recognised throughout the EU
- Value and clarity of the improvements installed in the building
- Non-performing loans mitigation
- Improving market transparency
- An EE building passport could propose a tailor-made, ready to implement action plan to the building owner, based on an affordable audit
- It could include tailor-made improvement recommendations and therefore act as an important communication instrument for EE mortgage product itself
- It would be meant as a holistic tool covering all aspects of buildings
- It would accompany the building over its life time
- The passport would ensure that energy improvement considerations are well integrated each time works are undertaken in a building
- Having a passport would be a prerequisite to obtain an energy efficient mortgage

EXCEPTED IMPACTS

The Initiative is intended to deliver several important outcomes:

- Standardised approach to financing energy efficient investment;
- Framework for robust measurement of energy efficient improvement;
- Conditions required for valuers to take account of EE features in valuations, including instructions from lenders;
- Correlation between energy efficient improvements and lower probability of default of borrowers

Together, the following overall impacts are excepted:

- Microeconomic perspective: individual consumers as investors in residential property and as retail investors in bank securities; individual consumers in terms of their awareness of energy consumption and understanding of energy related data;
- Macroeconomic perspective: banks as providers of energy efficient mortgages (as a form of investment) and institutional investors, such as banks, insurance companies and pension funds, in covered bonds.



EE ROADMAP - TIMELINE





EE MORTGAGE ACTION PLAN

Discussion among Participants:

- 1. Scope of Pilot Phase (between September 2016 and September 2017)
- 2. Objectives and Way Forward
- 3. Organisation and Involvement of Stakeholders
- 4. Introduction of Technical Committees:
 - Finance & Banking Committee, moderated by Luca Bertalot, EMF-ECBC
 - EE Committee, moderated by James Drinkwater, WGBC
 - Valuation & Data Committee, moderated by Zsolt Toth, RICS
 - > Advisory Council, moderated by *Monica Billio*, Ca' Foscari University
- 5. Agenda & Modus Operandi
- 6. Moving Forward: 2nd Event on 14, 15 or 16 February in Brussels



Finance & Banking Committee, moderated by *Luca Bertalot*, EMF-ECBC

Finance & Banking Committee Moderators: Luca Bertalot (EMF-ECBC)

- ABN Amro: Daniëlle Boerendans/Joop Hessels
- Berlin Hyp: Bodo Winkler
- BNP Paribas: Boudewijn Dierick/Agnes Gourc
- BBVA: Agustín Martín/Aaron Baker/Gerardo Echave
- Caja Rural de Navarre: Miguel García de Eulate
- Crédit Agricole: Jean-Marc Pinaud/Benedicte D'Aligny
- HSBC: Frank Will
- ING: Maxime Paran/Sandra Schoonhoven
- LBBW: Patrick Seifert
- Münchener Hypothekenbank: Rafael Scholz/Claudia Bärdges-Koch
- Nationwide: Andrew Baddeley-Chappell
- Nykredit: Morten Bækman Nielsen
- Société Générale: Massimo Bianchi
- UniCredit: Micol Levi/Luciano Chiarelli
- Investor Confidence Project: Panama Bartholomy/Luis Castanheira

 EE Committee, moderated by James Drinkwater (Europe Regional Network -WGBC) / Marco Marijewycz (E.ON)

Energy Efficiency Committee Moderators: James Drinkwater (Europe Regional Network - WGBC) / Marco Marijewycz (E.ON)

- UK-GBC: Richard Griffiths/Richard Twinn
- Dutch GBC: Maarten Dansen/Martin Mooij
- Saint-Gobain: Céline Carre/Pierre Hebert
- Knauf: Barry Lynham
- Oekom: Julia Haake
- Caisse des Dépôts: Frank Hovorka
- Climate Bond Initiative: Justine Leigh-Bell/Su Ching
- DRA: David Rosen
- BRE: Andrew Sutton
- European Builders Confederation: Riccardo Viaggi
- Ecofys: Wouter Meindertsma



Valuation & Data Committee, moderated by *Zsolt Toth*, RICS

Valuation & Data Committee Moderator: Zsolt Toth (RICS)

- CRIF: Silvia Cappelli/ Stefano Magnolfi
- Hypoport: Christiaan Pennekamp/Ketie Faeseler
- European Datawarehouse: Markus Schaber/Marco Angheben
- TXS GmbH: Torsten Schmidt/Markus Wilken
- Bloomberg: Stefen Dreyer
- Bax & Willems Consulting Venturing: Rolf Bastiaanssen
- MTS Markets: Guido Galassi



Advisory Council, moderated by Monica Billio, Ca' Foscari University

Advisory Committee Moderators: Monica Billio (UNIVE) / Loriana Pelizzon (SAFE)

- DG Energy, European Commission: Timothée Noel
- EASME: Gordon Sutherland
- Bank of Spain: Pablo Sinausia/Luna Azahara Romo González/ Soledad Nunez
- European Parliament: (tbd)
- World Bank: Andrey Milyutin
- BCBS: (tbd)
- EBRD: (tbd)
- IMF: John Kiff/Andy Jobst
- UNEP FI: Annie Degen/Sarah Challe
- EIB/EIF: Peter Coveliers
- BIS: (tbd)



TECHNICAL COMMITTEES: CAPTURING CURRENT STATE OF PLAY

- Overview by moderators of status quo
- What will the Technical Committees seek to establish?
 - > Brain-storming on objectives
 - How to achieve these objectives
 - Work plan
 - Modus operandi
 - Timeline
- Final presentation during next meeting





European Mortgage Federation European Covered Bond Council

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