1.9 THE ENERGY EFFICIENT MORTGAGES ACTION PLAN (EeMAP) INITIATIVE AND GREEN COVERED BONDS

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I. INTRODUCTION

International, institutional and investor interest in energy efficiency finance has increased in magnitude in recent years, supported by the successful conclusion of COP21, a universal legally binding global climate action plan to limit global warming to well below 2°C[1]. This has acted as a catalyst for energy efficiency finance across financial markets and imposed a new trajectory for European Union (EU) Member States' engagement in energy consumption.

The EU has set itself an overall 20% energy efficiency savings target by 2020 and has been considering increasing this to a 30% target by 2030. In the EU, buildings are responsible for 40% of the total energy consumption and 36% of CO2 emissions. By improving the energy efficiency of buildings alone, the EU's total energy consumption could be reduced by 5-6% and CO2 emissions by 5%. The scale of investment needed to meet the 2020 target is estimated at around €100 billion per year, with it considered necessary to invest around €100 billion a year up to 2050 in the EU building stock in order to deliver Europe's commitments on climate change. With 75-90% of the EU's buildings stock predicted to continue to stand in 2050, out of which 35% is over 50 years old, massive thermal renovation of the building stock is a necessity to reach these climate goals.

This is why, for more than two years, the EMF-ECBC has been working on the development of a mortgage financing mechanism according to which building owners are incentivised to improve the energy efficiency of their buildings or acquire an already energy efficient property by way of preferential financing conditions linked to the mortgage.[2]

Significantly, earlier this year, the EMF-ECBC, together with a consortium of partners i.e. UK Green Buildings Council, Royal Institution of Chartered Surveyors, Ca' Foscari University of Venice, E.ON & SAFE Goethe University Frankfurt, successfully applied for EU funding of the energy efficient mortgages initiative under the Horizon 2020 Programme, which constitutes an important political recognition of and support for energy efficient mortgage concept. The Project, known as the **Energy Efficient Mortgages Action Plan (EeMAP)**, represents the first time a group of major banks and mortgage lenders, as well as companies and organisations from the building and energy industries have proactively come together to discuss the private financing of energy efficiency.

II. THE EEMAP INITATIVE: CONCEPT & METHODOLOGY[3]

At the heart of the EeMAP Initiative is the assumption that energy efficiency has a **risk mitigation effect** for banks as a result of its impact on a borrower's ability to service their loan and on the value of the property. This means that energy efficient mortgages will represent a lower risk on the balance sheet of banks and could, therefore, qualify for a better capital treatment. Lower capital requirements deliver a strong incentive for banks to enter the market and, as a result, drive a broader incentive chain, in which all stakeholders, including EU citizens, issuers, investors and society as a whole, derive a concrete benefit.

1 The Paris Climate Change Agreement adopted during COP21 in December 2015 sets out a global action plan that helps avoid dangerous climate change by limiting global warming to well below 2°C. It was adopted by 195 countries as the first-ever universal, legally binding global climate deal. The Agreement is due to enter into force in 2020.

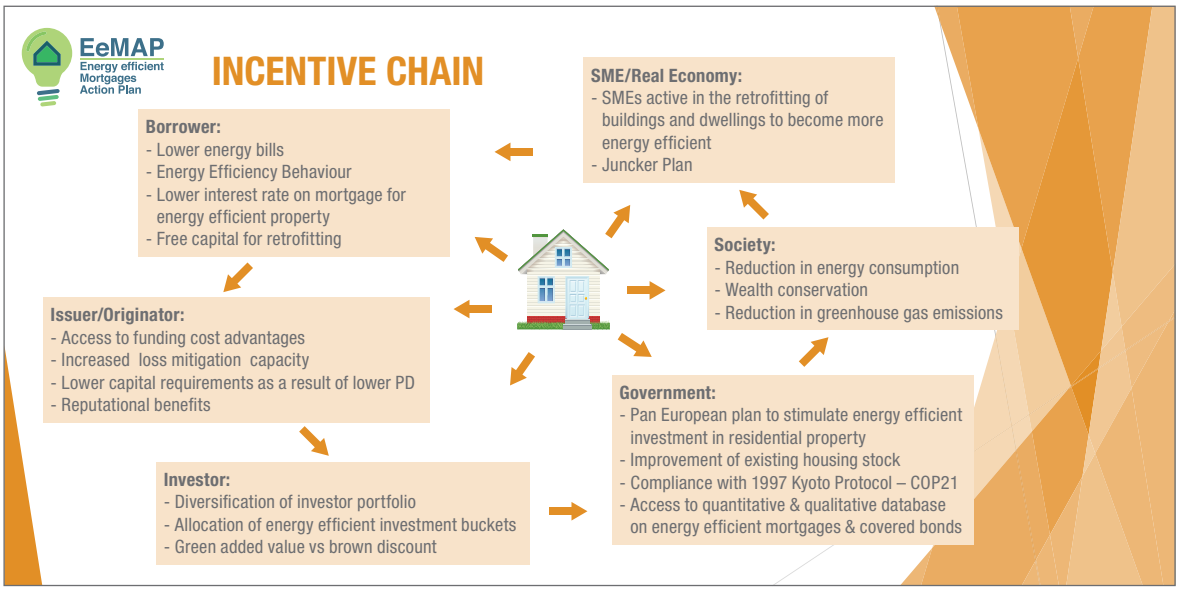
2 The focus of this Project is on lending on residential property, but potentially the underlying mechanism should also be deployed in the context of commercial property lending where applicable.

3 For more details about the EeMAP Initiative, please visit www.energyefficientmortgages.eu.

In parallel, this Initiative will help to coordinate market interventions and create synergies in the mortgage and covered bond value chain, delivering a virtuous circle – from the origination of the mortgage to the pooling of energy efficient collateral that would be the underlying collateral for "green" covered bonds.

As a result, the mortgage and covered bond industries can help to bridge the renovation gap with a private financing initiative and in this way, support the EU in meeting its energy savings targets, whilst at the same time creating a strong link between the Capital Markets Union and the energy efficiency agenda.

> Figure 1: Incentive chain



Source: EeMAP

Considering that the European building stock constitutes the largest single energy consumer in the EU, and that the value of the European mortgage market is equal to 53 % of EU's GDP[4], there is huge potential in channelling mortgage financing to increase energy efficiency. To put this potential into perspective, more than 210 million units (equal to 89%) of the EU's residential building stock, for example, were built before the year 2001, meaning **substantial efforts** are required to channel private capital into bringing energy inefficient homes in line with new energy standards. From a savings perspective, a renovated house that moves from an 'E' to a 'B' grade in its energy performance certificate (EPC) will save a family an estimated EUR 24,000 over 30 years, according to an analysis of 365,000 house sales in Denmark last year. Moreover, from a price perspective, an increase in energy performance can correspond to the adding of an extra 10-15 m² to the size of a property.

Recent market research conducted by the EMF-ECBC reveals a **strong willingness** among financial institutions to enter the energy efficiency finance market. The EeMAP Initiative intends to tap into that willingness, by combining a clear business case with clearly defined energy performance indicators (for more information hereof please see methodology section below) to design a pan-European energy efficiency mortgages product.

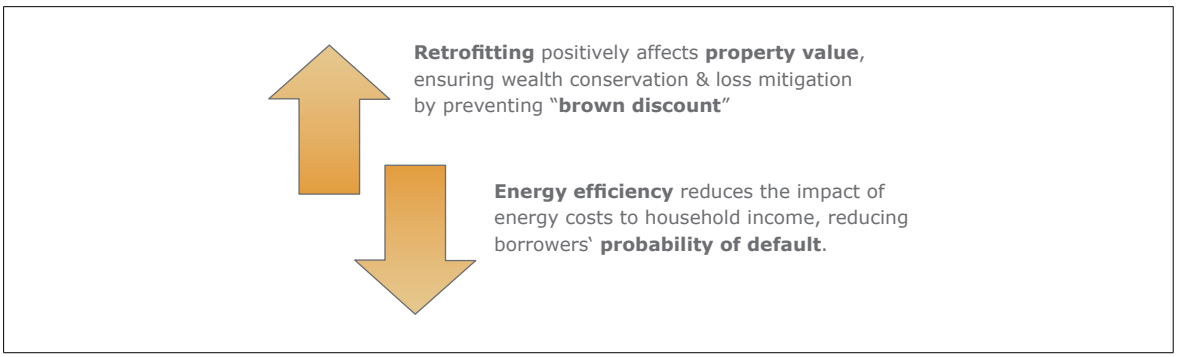
While the EeMAP Initiative is entirely independent from public funds, tax incentives or utility rebates, national governments aiming to further drive thermal renovation could consider complementary interventions, such as a variable tax rates for the purchase of properties based on the energy efficiency of the property.

4 Source: EMF-ECBC

Methodology

As indicated earlier, the EaMAP Initiative builds on **two key assumptions** which have already been recognised across a series of market and academic studies and which will be further substantiated during the course of the EeMAP Initiative. The first assumption is that improving the energy efficiency of a property has a positive impact on property value[5], reducing a bank's asset risk. The second assumption is that energy efficient borrowers have a lower probability of default as a result of more disposable income in the household due to lower energy bills, reducing a bank's credit risk:

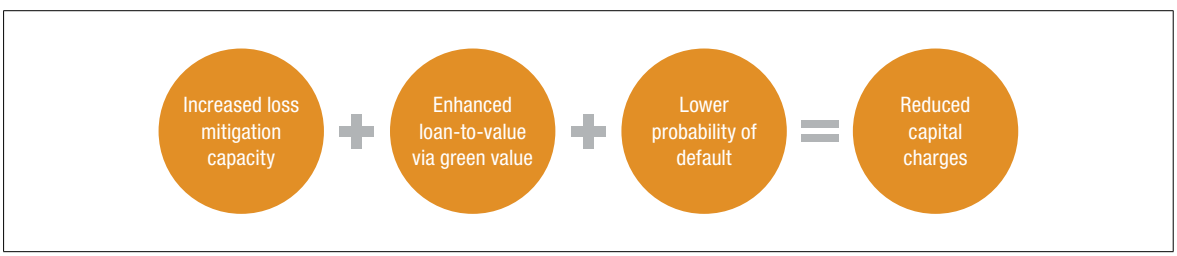
> Figure 2: Energy efficiency drivers impacting risk parameters



Source: EeMAP

These risk mitigation effects mean that energy efficient mortgages have the potential to represent a lower risk on banks' balance sheets and could, therefore, qualify for a better capital treatment, delivering a robust business case for banks to enter this market:

> Figure 3: Underlying busniess case



Source: EeMAP

Financial incentives in return for lower risks

On the basis of a reduced capital charge, banks providing energy efficient mortgages will offer the possibility of a preferential interest rate and/or additional funds at the time of origination of the mortgage/re-mortgaging in return for the acquisition of an already energy efficient property or the measurable energy efficient improvement in an existing property.

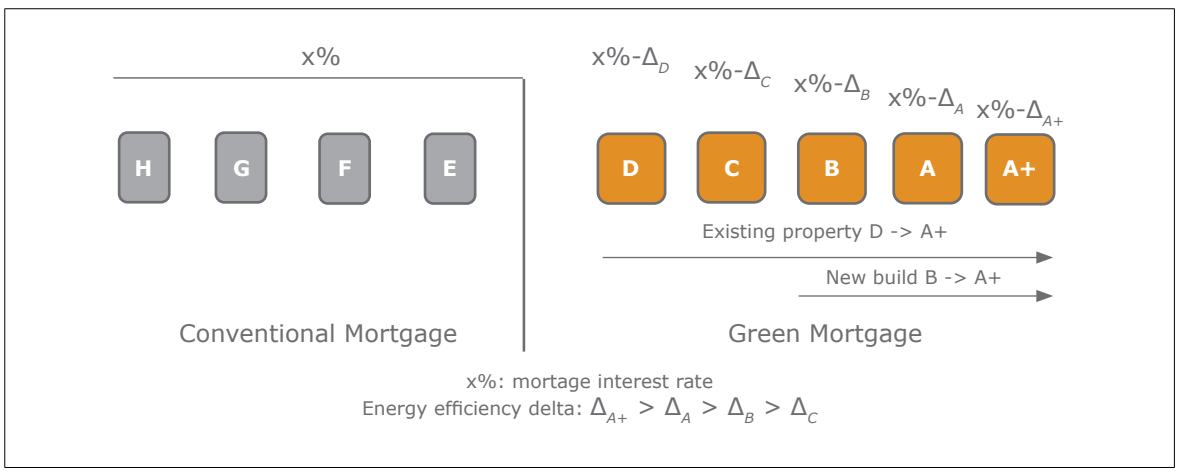
To this end, the EeMAP Initiative is seeking to develop a clear understanding of how to differentiate between 'green' and 'conventional' finance and how to capture energy efficiency within financial institutions' lending

5 The possibility to take account of an energy efficiency mortgage label which, as shown above, impacts upon the value of the property is suggested in the Second BCBS Consultation on Revisions to the Standardised Approach for Credit Risk from December 2015, which, at point 52 on page 35, states that: *"modifications made to the property that unequivocally increase its value could also be considered in the LTV".*

practices using energy efficiency indicators. Measurement of the energy efficiency improvement will build on research on how to more accurately predict energy costs in mortgage affordability calculations, and will likely be based on three pillars: (1) the Energy Performance Certificate (EPC) and (2) a consumption indicator in the short term and (3) a demand indicator in the longer term. The evaluation and validation of the energy efficiency improvements using the above-mentioned indicators would be delivered by external/third party providers.

Using predefined energy efficiency indicators to be developed during the Initiative, banks will offer: (i) a preferential interest rate at the time of origination of the mortgage for the purchase or construction of an already energy efficient property or (ii) additional funds at the time of origination to finance energy efficiency renovations of an existing property together with a discount in the interest rate after a certain period of time according to the improvement in the energy rating or performance of the property. The financial incentives linked to the energy efficient mortgage will be determined on the basis of a **progressive scale**, which will incentivise more significant improvements in properties at the lower end of the energy rating A-D i.e. the consumer would receive a larger percentage of the discount (Energy Rating A = 100% of discount), the further they move their property up in terms of energy rating. The discount itself would be calculated as a function of the reduced risk weighting of the mortgage in the calculation of the bank's capital requirements.

> Figure 4: Illustrating the correlation between a property's energy rating and a potential preferential mortgage interest rate



Source: EeMAP

Broader perspective

The underlying structure of the EeMAP Initiative provides a clear three-dimensional aspect which interrelates with a broader set of political priorities:

> **Financial Stability**:
Borrowers are incentivised to improve the energy efficiency of their homes in return for a preferential interest rate after a certain period of time and/or additional funds at the time of the origination of the mortgage on the same terms as the mortgage on the property (as opposed to at the higher rate of a consumer loan).

> **Jobs & Growth**:
The EeMAP will boost private investment in energy efficiency improvements, largely through retrofitting, which will in turn boost SME activity in the retrofitting sector, encouraging technological innovations, thereby contributing to the European Commission's growth and jobs agenda.

> **Energy Efficiency**:
The Initiative fits well within the European Commission's own framework for climate and energy policies, which aims to encourage investments and boost private finance for EE investments/buildings. In particular, it is worth highlighting that the draft report of the revision of the Energy Performance of Buildings Directive (EPBD) from April 2017, included specific references to both 'energy efficient mortgages' and 'lower risk weighting in capital requirements for collateral with certified energy efficient renovations'. At the time of writing, the Council of the EU had, in the context of the revision of the EPBD, agreed on its position to promote energy efficiency in buildings and to support cost-effective building renovation with a view to the long-term goal of decarbonising the highly inefficient existing European building stock.

III. EEMAP KICK-OFF STAKEHOLDER MEETING IN ROME

The EeMAP Initiative was officially launched at a Kick-off Stakeholder Meeting in Rome on 9 June 2017, Over 100 European stakeholders, representing a cross sector of key market players such as European and international Institutions (including the European Commission, the European Parliament, the European Investment Fund, the European Investment Bank and UN EPFI), investors, issuers, lenders, property valuers, energy suppliers, buildings experts, SME representatives and academics, came together to discuss this market-led mortgage financing mechanism.

The unique exchange of views that ensued between political actors and market participants gave way to a common agreement that the development of a cross-sectoral energy efficient mortgage product is crucial to channel private capital into energy efficiency investments and scale-up the energy performance of the existing European housing stock.

EeMAP Kick-off Stakeholder Meeting – Rome

Luca Bertalot, EeMAP Coordinator & EMF-ECBC Secretary General, said: "In the context of the European Commission's Capital Markets Union Mid-Term Review, the EeMAP Initiative represents a concrete step towards a clear cross-sectoral roadmap for the private financing of energy efficiency and, as such, a strong, market response to the challenge presented by climate change, underlining the foresight and proactivity of the stakeholders involved. The Initiative will encourage the energy efficient renovation of the EU's building stock, in support of the EU's ambitious energy savings targets and its commitment to the COP 21 Agreement and is therefore of strategic importance from an environmental, financial, and economic perspective."

Next Steps

In terms of next steps, an **EeMAP pilot phase** was launched in June 2017 with the aim of collecting data to further substantiate the correlation between energy efficiency and credit and asset risk and testing the future energy efficiency mortgage framework. In terms of concrete deliverables, over the next two years, the EeMAP Initiative will deliver the following outcomes: I) Identification and summary of market best practices; II) Definition of energy performance indicators; III) Identification of pre-requisites for the assessment of "green value"; IV) Substantiation of correlation between EE & probability of default – portfolio analysis; and V) Definition and design of energy efficient mortgage, based on preferential financial conditions.

In parallel to the EeMAP, the EMF-ECBC, together with a Consortium consisting of Hypoport, European Datawarehouse, Ca' Foscari University, CRIF, TXS & SAFE Goethe University Frankfurt recently submitted a second EU funding application under the Horizon 2020 call "Making the Energy Efficiency Market Investible" to deliver large-scale, granular technical and financial data related to energy efficient mortgages by way of a standardised data protocol to be accessed through a common, centralised portal. The data gathered and stored will ultimately allow for the tracking of the performance of assets with "green" features, facilitating the earmarking of such assets for the purposes of energy efficient covered bond issuance. The Project also has long-term potential to scale-up the expected impacts of the EeMAP Project to encourage significant energy reductions.

IV. GREEN COVERED BONDS – SUSTAINABLE FUNDING

Market Perspective

Over the past few years, green and sustainable bonds have been a fast-growing capital market segment. The first issuers of green bonds were supranational issuers such as the European Investment Fund and the International Finance Corporation (part of the World Bank Group). Since then a wide variety of corporate and agency issuers as well as local and regional authorities and sovereigns have entered the market. Banks also play an increasing role with green senior unsecured issuance by players such as ABN AMRO, Berlin Hyp, Credit Agricole, and ING as well as Shanghai Pudong Development Bank. Around USD 90 bn of green bonds were issued in 2016, largely driven by strong Chinese supply volumes. In line with the growing issue volumes, investors have become more comfortable with green bonds and their underlying definitions. We see two major trends in the investor community: first, the number of dedicated green institutional investors and/or funds continues to increase in terms of volumes and numbers; and second, even some traditional investors have started to disclose their share of green and sustainable investments. However, there is still a need for further standardisation of the product and for improving transparency to ensure the integrity of the asset class. The Green Bond Principles – which have been developed by issuers, investors and intermediaries in close cooperation with the International Capital Market Association (ICMA) – are an important step in the right direction as they provide guidance for both issuers and investors and should help further promote the mainstream acceptance of the green bond market.

Green and ESG Covered Bonds

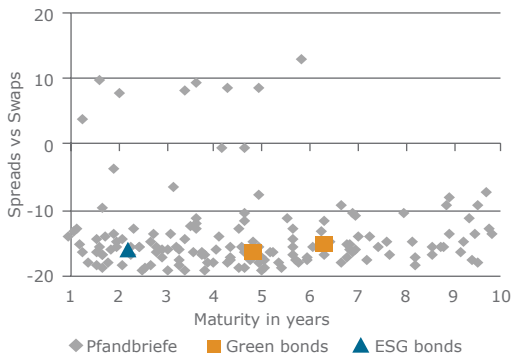
In the covered bond space, Münchener Hypothekenbank eG was the first issuer of an Environmental, Social and Governance (ESG) covered bond back in September 2014. In April 2015, Berlin Hyp followed with its inaugural green mortgage Pfandbrief. In Spain, two issuers have entered the sustainable market segment: Kutxabank in 2015 and Caja Rural de Navarra in 2016. Last year, Bank of China issued its inaugural green structured covered bond with climate-aligned domestic cover assets. However, in terms of volumes the green/sustainable covered bond market has not taken off and is still relatively small compared to the volumes seen in the green senior unsecured space or in the supra & agency sector.

Munich Hyp: Munich Hyp uses the proceeds of its ESG Pfandbriefe to refinance loans to housing cooperatives in Germany. The funds are employed to purchase, build and improve the energy efficiency of housing and maintain housing for socially disadvantaged sections of society. However, it is important to note that ESG covered bond investors rank pari passu with other mortgage Pfandbrief investors and do not have a preferential claim on the ESG assets in the cover pool of the issuer. According to Munich Hyp, its inaugural ESG Pfandbrief attracted many new investors. About one third of the deal was allocated to new investors who only buy ESG bonds and who have not bought covered bonds from Munich Hyp in the primary market before.

Berlin Hyp: Berlin Hyp has so far issued two green Pfandbriefe, one in April 2015 and one in June 2016. In contrast to Munich Hyp's ESG Pfandbrief, the covered bonds are genuine green covered bonds and have benchmark size (EUR500m). The issuer stated in its press releases that the bonds attracted many new investors and that almost half of the deals were placed with sustainable investors.

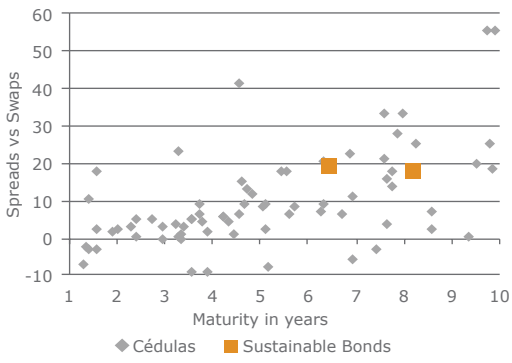
Berlin Hyp committed to use the proceeds of its green Pfandbrief for the financing of 'green buildings' in Germany, France, the UK, the Netherlands and Poland. These assets are included in Berlin Hyp's 'normal' mortgage Pfandbrief cover pool and the Green Pfandbrief – in line with the treatment of Munich Hyp's ESG Pfandbrief – will rank pari passu with the other mortgage Pfandbriefe of the issuers. In case of issuer insolvency, investors will have a claim against the entire cover pool without having a preferential claim on the green cover assets over and above other 'normal' mortgage Pfandbrief investors.

> Figure 5: German Pfandbrief market



Source: HSBC, Thomson Reuters Eikon

> Figure 6: Spanish covered bond market



Source: HSBC, Thomson Reuters Eikon

Kutxabank: In September 2015, Kutxabank issued its first Social Covered Bond to support low-income individuals and families to have access to adequate accommodation. The proceeds from the issues are therefore used for financing existing social housing loans and to finance new loans and new social housing projects.

Caja Rural de Navarra: In November 2016, Spanish Caja Rural de Navarra issued a sustainable Cédula Hipotecaria. The issuer committed to allocate the proceeds from the transaction to projects focused on creating a social impact in local communities and environmental sustainability. In the case of Kutxabank and Caja Rural de Navarra, the bondholders have the same claim against the cover pool as all the other Cédulas Hipotecarias investors, i.e. they do not have a preferential claim on these sustainable assets in the cover pool.

Bank of China: In November 2016, Bank of China (BOC) issued the first Chinese covered bond. The USD500m bond had a maturity of 3 years and is not secured by mortgages or public sector assets but by a pledge by BOC of a portfolio of climate-aligned bonds issued by Chinese institutions. Moody's assigned an Aa3 to the bond, granting a one-notch uplift over the issuer rating of A1, reflecting the lack of a covered bond law and the less robust structure of the deal. In its new issue report, Moody's highlighted the concentration of the cover assets, as 98% of all bonds in the cover pool had been issued by just two issuers. According to Bloomberg, Asian investors were allocated 72% with the rest being taking up by European investors.

Do Green or Sustainable Bonds Trade Tighter than other Covered Bonds?

In terms of spreads, the market does not really distinguish between green/sustainable bonds and 'normal' covered bonds, despite the larger investor base of the former (as they attract sustainable investors in addition to their traditional investors). The new issue levels of Munich Hyp's ESG Pfandbrief as well as Berlin Hyp's green covered bond were not substantially tighter than those of a 'normal' Pfandbrief transaction and both deals also trade more or less in line with the other German mortgage Pfandbriefe. This is also reflected in the current spread levels (see figure 5). The same holds true for the sustainable deals by Kutxabank and Caja Rural de Navarra deal (see figure 6).

The lack of differentiation is driven by two main factors, in our opinion. Firstly, from a risk perspective the cover assets backing the green or sustainable covered bonds are the same backing the other 'normal' mortgage covered bonds, i.e. in case of issuer insolvency green/sustainable covered bond investor do not have any preferential claim on the green/sustainable assets. Secondly, the green and sustainable (covered) bond market is still in its infancy and the investor base is still not large enough to justify a significant difference in the pricing.

Future Market Potential

In our view, there is significant market potential for the green and sustainable bond market generally, although it might take some time for the covered bond market to significantly pick up momentum in this respect. Over the last few years, we have seen that many banks prefer to issue green/sustainable senior unsecured debt instead of green/sustainable covered bonds as in both cases the focus remains on the use of proceeds, given that covered bond investors do not have a preferential claim on the green/sustainable assets in the cover pool. Having said that, there is a very good chance that the current discussion about energy efficient mortgages will stimulate the growth of the green covered bond market.

THE COVERED BOND LABEL: SUSTAINABLE COVERED BONDS

To facilitate the increased interest in and commitment to sustainable funding, the Covered Bond Label Foundation (CBLF) implemented earlier this year a new IT feature which allows investors to identify **Covered Bond Labelled Sustainable Bonds** by means of a "green leaf" icon appearing next to the ISIN of the relevant bonds. At the time of writing, both Kutxabank and Caja Rural de Navarra make use of the Covered Bond Label's green leaf feature to differentiate their sustainable and social covered bonds within the covered bond market. For more information about the Covered Bond Label and its efforts to increase and improve transparency and ensure a homogeneous format across countries and institutions, please refer to the introductory article on the Covered Bond Label.

V. CONCLUSION

The shift towards a lower carbon economy has indisputably begun, and banks have increased their focus on energy efficiency and sustainability in order to capitalise on growing consumer and investor demand in this area. However, with only a fraction of banks' lending and funding being explicitly classified as one or the other in today's markets, a clear business case and strong underlying incentive chain, such as the one underpinning the EeMAP Initiative, will help the green transformation by acting as a driver for the mobilisation of private mortgage financing of energy efficiency.