

D4.1 ANALYSIS OF REGULATORY & SUPERVISORY LANDSCAPE RELATIVE TO EEM

NEEM HUB

Nordic Energy Efficient Mortgage Hub

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The Nordic Energy Efficient Mortgage Hub aims to scale-up lending to energy renovations in the Nordics and will publish a blueprint on how to accomplish this which will be implementable in other regions of Europe and, indeed, the world. In striving to increase energy renovations, the NEEM Hub will help achieve the targets of the European Green Deal and contribute to addressing ambitious national climate targets.

The NEEM Hub will be comprised of a long list of institutions from the financial sector, behavioural scientists, mortgage specialists and authorities, and digital technologies communities from across the Nordics, all guided by leading European Economics Consultancy, Copenhagen Economics.



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EXECUTIVE SUMMARY

The European Union (EU) has set itself ambitious climate change targets further to the conclusion in 2015 of landmark international agreements with the adoption of the [UN 2030 agenda and sustainable development goals](#) and the [Paris climate agreement](#). The scale of investment needed to meet the EU's climate and energy savings targets is estimated at more than €260 billion p.a. until 2030¹, three quarters of which is accounted for by energy efficiency in buildings. Against a background of very low annual rates of renovation of the building stock across Member States, the EU Green Deal highlights the need to boost renovation in order to meet the EU's energy efficiency and climate objectives.

The scale of investment needed to achieve the EU's energy savings targets cannot be met by the public sector alone and therefore the issue of private finance in the context of the transition to a more sustainable economy and future has taken centre stage in recent years. Indeed, it is widely recognised that the EU financial sector has the potential to multiply sustainable finance and become a global leader in this area, with positive spillovers for economic growth and job creation.

This has led to the development by the European Commission since 2018 of a comprehensive policy agenda on sustainable finance, comprising the action plan on financing sustainable growth, which introduced the EU Taxonomy, the development of a renewed sustainable finance strategy in the framework of the European Green Deal and the new strategy for financing the transition to a sustainable economy. In addition, much attention is being paid to the potential 'greening' of existing pieces of financial services/banking related legislation, including the Capital Requirements Regulation (CRR) and the Mortgage Credit Directive (MCD). The European Commission is also coordinating international efforts through its International platform on sustainable finance.

In line with the growing importance of climate change for the economy and increasing evidence of its financial impact on banks, the ECB for its part is also more and more sensitive to the prudent and safe management of climate-related and environmental risks in the financial sector. At the same time, the ECB has itself committed to including climate change considerations in its monetary policy strategy, in line with EU policies and initiatives in the field.

This comprehensive but complex regulatory and supervisory landscape is in many respects of direct and significant relevance to the current Project, NEEM, and its efforts to implement key aspects of the broader Energy Efficient Mortgages Initiative (EEMI), which respond directly to key priorities of the EU policy agenda.

¹ https://ec.europa.eu/commission/presscorner/detail/en/ip_20_17

Last but not least, as the COVID-19 crisis has unfolded in the EU, EU heads of state, MEPs and market stakeholders among others have emphasised the importance of preparing a comprehensive plan under the EU Green Deal which also integrates the green transition in the economic recovery. In taking forward the work of the EEMI, NEEM will also make an important contribution to the Renovation Wave, part of the European Green Deal, which could be a key element of a post-COVID recovery plan because of its benefits for stimulating economic activity.

This Report identifies and explores the key touchpoints between the EU regulatory and supervisory landscape and energy efficient mortgages, with a focus on the EEM definition, EEM Label and the prudential treatment of EEM, and assesses these with a view to providing the necessary compliance and alignment guidance to lending institutions in the Nordic region in a second stage. The Report furthermore considers alignment of NEEM with the European Commission's objectives in relation to the recovery from the COVID-19 crisis.

With a focus on the vast, complex and interconnected regulatory and supervisory landscape related to sustainable finance, the Report concludes that no part of a banks' activities will remain untouched by the various initiatives and actions, whether these bank activities be retail, funding or supervisory-related. The Report finds however that the most significant impact on banks' activities of this landscape will be driven by the material effects of Sustainable Finance policy and the actions intended to support the EU Green Deal on the three pillars of the supervisory framework: capital requirements, supervisory review and market discipline related to disclosure, requiring banks to already be taking the necessary measures to understand the implications of the regulatory and supervisory landscape related to sustainable finance and the EU Green Deal for their business activities and take the necessary steps to achieve alignment and compliance. In this context, the EEMI more broadly and NEEM specifically in the case of the Nordic countries offer a fast track to meeting the requirements of the policy and supervisory agenda from the perspective of energy efficient mortgages.

CHAPTER 1

INTRODUCTION

1.1 CONTEXT

Under the 2012 Energy Efficiency Directive, the EU set itself an overall 20% energy savings target by 2020 in recognition of the fact that the EU is by far the largest importer of fossil fuels in the world and with a view to achieving EU energy independence. In June 2018 and further to the Paris Agreement, a revision of the Energy Efficiency Directive resulted in the setting of a new energy efficiency target for the EU for 2030 of 32.5%, with an upwards revision clause by 2023.

The **Green Deal** released in December 2019 galvanised the commitment of the Union to tackling climate change and launched a concerted effort to coordinate and, where necessary, rethink the multitude of actions and pieces of legislation which have been taken and implemented at EU level in this respect, as well as to launch new initiatives. Building on the progress made under the Energy Efficiency Directive, the EU Green Deal is prioritising **energy efficiency**. In the proposal for recasting the Directive published on 14 July 2021, which forms part of the Commission package of proposal “Delivering on the European Green Deal” aimed at reducing net greenhouse gas emissions by at least 55% by 2030 and becoming climate neutral by 2050, higher targets are proposed for reducing primary (39%) and final (36%) energy consumption by 2030.

Against a background of very low annual rates of renovation of the building stock across Member States, the EU Green Deal highlights the need to boost renovation in order to meet the EU’s energy efficiency and climate objectives. At the same time, attention needs to be paid to the 50 million consumers who struggle to adequately heat their homes. In order to address these two challenges of energy efficiency and affordability, the EU Green Deal proposes a ‘**renovation wave**’ of the EU’s public and private building stock.

The scale of the investment needed to meet the 2020 target was estimated at around €100 billion per year; the latest 2030 targets have increased this amount to far in excess of €200 billion, three quarters of which is accounted for by energy efficiency in buildings. With the scale of this investment in mind and the recognition that public finance alone is not sufficient to meet needs, since 2018 the issue of finance in the context of the transition to a more sustainable economy and future has become a policy and legislative priority at EU level.

Reflecting the potential for the EU financial sector to multiply sustainable finance and become a global leader in this area, since 2018 significant efforts have been undertaken by the European Commission and other EU authorities to connect finance with the needs of the European economy and the EU agenda for sustainable development. This has resulted in a proliferation of interconnected regulatory and supervisory initiatives:

1.2 REGULATORY LANDSCAPE

The European Commission's Action Plan on Sustainable Finance from 2018 represented the first concrete, coordinated development in this area. At the heart of the Sustainable Finance Action Plan is the **EU Taxonomy** which establishes a common language for sustainable finance based on a standardised classification and well-aligned benchmarks for what assets can be considered as significantly contributing to environmental goals. In turn, the EU Taxonomy has significant implications for existing and future pieces of legislation, including the **Non-Financial Reporting Directive (NFRD)** to be renamed the **Corporate Sustainability Reporting Directive (CSRD)** after revision this year, and the **Sustainable Finance Disclosure Regulation (SFDR)**. Ongoing EU policy initiatives will also link standards and labels to Taxonomy aligned economic activities, including the draft **EU Ecolabel criteria for financial products**, in which there is a requirement for a certain share of underlying activities invested in to be Taxonomy aligned. Thus, the EU Ecolabel will be awarded to financial products only if the companies they invest in carry out Taxonomy-aligned activities.

In March 2021, the European Banking Authority (EBA) **published an Opinion in response to the Commission's call for advice on KPIs and related methodology for the disclosure by credit institutions and by investment firms of information on how and to what extent their activities qualify as environmentally sustainable in accordance with the EU Taxonomy**. The main KPI proposed is the **Green Asset Ratio (GAR)** which identifies the institutions' assets financing activities that are environmentally sustainable according to the EU taxonomy, such as those consistent with the European Green Deal and the Paris agreement goals. Information on the green asset ratio is supplemented by other KPIs that provide information on the taxonomy-alignment of institutions' services other than lending and investing. The EBA has also integrated proportionality measures that should facilitate institutions' disclosures, including transitional periods where disclosures in terms of estimates and proxies are allowed.

In July 2021, within the framework of the Green Deal, the European Commission announced a package of measures to help improve the flow of money towards financing the transition to a sustainable economy. The intention is to enable investors to re-orient investments towards more sustainable technologies and businesses and in this way support efforts to achieve the EU's climate and environmental targets:

- First, the European Commission published its **new Sustainable Finance Strategy** focused on: transition finance, inclusiveness, resilience and contribution of the financial system and global ambition. Among many other measures, the European Commission announced: (i) its intention to ask the EBA for an opinion on **definitions and tools for green retail loans and green mortgages** and (ii) its plan to explore how to include energy efficiency mortgages in the **Mortgage Credit Directive review**. The latter is a directive primarily focussed on consumer protection in the area of mortgage

credit and there has long been discussion on how it could be used as a vehicle to support the uptake of energy efficient mortgages.

- Secondly, the European Commission published a **European Green Bond Standard** proposal intended to create a high-quality voluntary standard for bonds financing sustainable investment.
- Finally, July 2021 marked the publication of the long-awaited draft **Delegated Act** stipulating the information to be disclosed by financial and non-financial companies about how sustainable their activities are, based on Article 8 of the EU Taxonomy. This Delegated Act includes the **technical screening criteria** for climate change mitigation and adaptation activities.

On 1 March 2021 the EBA published a public consultation paper on draft implementing technical standards (ITS) on **Pillar 3 disclosures of ESG risks under Article 449a of the Capital Requirements Regulation ((EU) 575/2013) (CRR)** as part of the Pillar 3 reporting framework, currently designed for disclosure of regulatory capital and risk exposures. The new ESG risk disclosure requirements set out in the draft ITS are applicable from June 2022, on an annual basis during the first year and then biannually. The EBA is, however, proposing a phased approach to implementation, with a transition period for certain disclosures for which data collection will be the most challenging. The final implementation deadline will be June 2024. The ESG risk disclosure requirements apply to large financial institutions (financial institutions with securities traded on a regulated market of any European member state). The disclosure requirements in the draft ITS are intended to allow investors and stakeholders to compare the sustainability performance of institutions. The focus is on:

- Their financial activities and vulnerabilities.
- How they are mitigating ESG risks, both physical and transitional.
- How they are supporting their customers and counterparties in the adaptation process.

The ESG risk disclosure requirements set out in the draft ITS work in parallel with Article 8 of the Taxonomy Regulation. At the time of writing, the EBA is finalising the draft ITS which are expected to be published later in 2021.

Finally, and pursuant to Article 501 of the **Capital Requirements Regulation**, the EBA is also currently assessing whether a **dedicated prudential treatment** of exposures related to assets or activities associated substantially with environmental (and/or social) objectives would be justified as a component of Pillar 1 capital requirements. The EBA is assessing: (1) methodologies for the assessment of the effective riskiness of exposures related to assets and activities associated substantially with environmental and/or social objectives compared with the riskiness of other exposures; (2) the development of appropriate criteria for the assessment of physical risks and transition risks; and (3) the potential effects of a dedicated prudential treatment of exposures associated substantially with

environmental and/or social objectives and activities on financial stability and bank lending in the Union. Significantly, in its Renewed Sustainable Finance Strategy, the European Commission proposes that the EBA brings forward its work in this area by two years, to 2023, pointing to the perceived importance of this exercise by the European Commission and the potential for accelerated follow up to this mandate.

1.3 SUPERVISORY LANDSCAPE

In line with the growing importance of climate change for the economy and increasing evidence of its financial impact on banks, the supervisory landscape is also increasingly sensitive to climate-related and environmental risks and their prudent and safe management in the financial sector.

To this end, in its **Guide on Climate-related and Environmental Risks** published in 2020, the ECB outlines its understanding of the safe and prudent management of climate-related and environmental risks under the current prudential framework and provides guidance on how these risks should be considered in banks' business strategies and governance and risk management frameworks and how it expects institutions to become more transparent by enhancing their climate-related and environmental disclosures. This guide is not binding for the institutions, but rather it serves as a basis for supervisory dialogue. As part of this supervisory dialogue, the ECB will discuss with institutions the ECB's expectations set out in this guide in terms of any possible divergences in institutions' practices.

Significantly, supervisory expectations 7 and 8 require that in their credit risk management, institutions are expected to consider climate-related and environmental risks at all relevant stages of the credit-granting process and to monitor the risks in their portfolios.

In line with the growing importance of climate change for the economy and increasing evidence of its financial impact on banks, the ECB will conduct its next supervisory stress test in 2022 on climate-related risks. Further details will be provided in the course of 2021.

At the same time, in July 2021 the ECB announced its intentions to include climate change considerations in its **monetary policy strategy** via a comprehensive action plan with an ambitious roadmap. The decision followed the conclusion of the strategy review of 2020-21, in which the reflections on climate change and environmental sustainability were of central importance. As part of these efforts, the ECB has committed:

- to expanding its analytical capacity in macroeconomic modelling, statistics and monetary policy with regard to climate change;
- to including climate change considerations in monetary policy operations in the areas of disclosure, risk assessment, collateral framework and corporate

sector asset purchases;

- to implementing the action plan in line with progress on the EU policies and initiatives in the field of environmental sustainability disclosure and reporting.

The recently established ECB Climate Change Centre will coordinate the relevant activities within the ECB, in close cooperation with the Eurosystem.

This comprehensive and interconnected regulatory and supervisory landscape will have far reaching consequences for banks' entire value chains, impacting on their business models and strategies, governance structures and disclosure, and will require significant implementation efforts for the coming months and years. And this is just the beginning. Establishing a framework for sustainable business practices is the first step of the EU's ambitions for sustainable development and more regulations will follow.

1.4 COVID-19 RECOVERY

As the COVID-19 crisis unfolded in the first quarter of 2020, EU heads of state, Members of the European Parliament and market stakeholders among others emphasised the importance of preparing a comprehensive plan which also integrates the green transition in the economic recovery.

At the same time, the financial sector has long been recognised as being fundamental to the transition to a climate-neutral economy. In this context, the mortgage industry in particular has the potential to play a transformative role as a catalyst for the development of an ecosystem comprising a broad spectrum of stakeholders, including consumers and SMEs, which can support the attainment of the 2050 emission targets, in line with the EU Green Deal and the Renovation Wave Strategy.

In taking forward the work of the EEMI, NEEM will also make an important contribution to the Renovation Wave, part of the European Green Deal, which could be a key element of a post-COVID recovery plan because of its benefits for stimulating economic activity.

CHAPTER 2

IMPLICATIONS OF THE REGULATORY LANDSCAPE FOR NEEM

The new regulatory and supervisory landscape described above will present very specific impacts and opportunities in relation to the development of energy efficient mortgages and, as a result, the key outputs of the Energy Efficient Mortgages Initiative (EEMI) which NEEM will, among other objectives, take forward as a response to key aspects of the EU policy agenda:

1. The **Energy Efficient Mortgage Label**, which is focussed on disclosure of information on energy efficient mortgages and consumer loans based the EEM Convention (taking the EEM definition agreed in 2018 as its starting point, which among other requirements refers to a 30% improvement in energy performance in the case of building renovation) and achieved through a Harmonised Disclosure Template (HDT). The EEM Label is modelled on the highly successful Covered Bond Label and is intended as a clear, simple and transparent measure of the alignment of banks' mortgage (and consumer) loan portfolios with the EU Taxonomy.
2. The demonstration of a **correlation between energy efficiency in buildings and mortgage performance**, in the context of the European Commission's commitment² to explore the feasibility of the inclusion of risks associated with climate and other environmental factors in institutions' risk management policies and the potential calibration of capital requirements of FIs as part of the Capital Requirement Regulation and Directive.
3. Efforts to reinforce the **value chain** between energy efficient mortgages and energy efficient/green (covered) bonds.

Together these outputs have been identified as being among the key elements to unlock the potential of the mortgage market to support the energy transition by stimulating and facilitating market development. There are a number of touchpoints between the regulatory and supervisory landscape, energy efficient mortgages generally speaking and the outputs of the EEMI and NEEM specifically.

It is therefore of the utmost importance that these touchpoints are clearly identified and assessed individually and collectively in order to ensure appropriate alignment and therefore maximum potential for market development.

2.1 EU TAXONOMY

² EU Action Plan: Financing Sustainable Growth p.9, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0097&from=EN>

Climate Change Mitigation & Adaptation

Introduction

There are six key objectives in the “EU Taxonomy Regulation”³ (see figure 2). The first two are climate change mitigation and climate change adaptation, reflecting the urgency of the climate change challenge and thus representing the current priorities of the European Commission and other EU authorities, as well as Member State governments, local authorities and companies, to name but a few.

Box 1 Taxonomy Regulation Objectives

The Six Environmental Objectives of the Taxonomy Regulation

1. Climate change mitigation
2. Climate change adaptation
3. Sustainable use and protection of water and marine resources
4. Transition to a circular economy
5. Pollution prevention and control
6. Protection and restoration of biodiversity and ecosystems

The Taxonomy Regulation entered into force in July 2020, specifying alignment with the EU Taxonomy for financial institutions that offer financial products on the European market and non-financial companies that already have to submit a non-financial statement under the NFRD. The delegated act on the reporting of EU Taxonomy alignment was adopted by the European Commission in June 2021. It specifies the information companies will have to disclose on how, and to what extent, their activities align with the EU Taxonomy. This activity-level focus and the granularity in reporting it will require will represent a significant departure from existing ESG reporting practices for most market participants which until now have focussed on the company’s performance rather than the eligibility of the activities they are engaged in. At the time of writing, the first disclosures are likely to be due by the end of 2022.

For an economic activity to align with the Taxonomy Regulation, a company must indicate how:

- (1) the activity substantially contributes to one or more of the six environmental objectives,
- (2) does no significant harm to the other objectives, and
- (3) meets minimum social safeguard standards.

The criteria for substantial contribution and significant harm are given in the Technical Screening Criteria for each environmental objective.

³ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R0852&from=EN>

As suggested above, the Taxonomy will have far reaching consequences for financial institutions, requiring them to undertake extensive preparations for implementation and longer-term strategic reviews to determine the extent of their Taxonomy aligned activities. In the short term, financial institutions will need to assess their activities with a view to identifying those which fall within the scope of the Taxonomy, understanding what is required for those activities to be compliant with the Taxonomy, identifying the data requirements for each type of activity, developing roadmaps to close gaps and plan and operationalise the necessary reporting.

For energy efficient mortgages, the climate change mitigation and adaptation technical criteria for Taxonomy compliance of construction and real estate activities⁴ (see Annexes 1 and 2) are the most relevant because of the intrinsic link between mortgages and real estate.

What does the EU Taxonomy mean for Energy Efficient Mortgages?

The relevant screening criteria for construction and real estate activities relate to: (1) construction of new buildings, (2) renovation of existing buildings and (3) acquisition and ownership of buildings. These technical screening criteria for buildings are fundamental for energy efficient mortgages as they will ultimately determine Taxonomy compliance of the underlying mortgage (or consumer) loans used to finance the acquisition, construction or renovation of buildings, as well as the covered bond or securitisation issued to fund mortgage loans.

In the run up to the adoption of the Delegated Act by the European Commission and since July 2021, the Energy Efficient Mortgage Label Committee, and most recently the newly established EEM Label Taxonomy Task Force, have been examining the technical screening criteria to establish the extent of the alignment with the EEM Label Convention (see box below) and make any amendments as necessary. At the time of writing, this assessment is ongoing, but in the meantime, EEM labelled have also started an assessment of the technical screening criteria and DNSH requirements and their implications for the energy efficient mortgage market more generally.

⁴ https://ec.europa.eu/finance/docs/level-2-measures/taxonomy-regulation-delegated-act-2021-4987_en.pdf

Box 2 EEM Label Convention

Energy Efficiency Mortgage (EEM) are intended to finance the purchase/construction and/or renovation of both residential (single family & multi-family) and commercial buildings where there is evidence of: (1) energy performance which meets or exceeds relevant market best practice standards in line with current EU legislative requirements; and/or (2) an improvement in energy performance of at least 30%.

This evidence should be provided by way of a recent Energy Performance Certificate (EPC) rating or score, complemented by an estimation of the value of the property according to the standards required under existing EU legislation. It should specifically detail the existing energy efficiency measures in line with the *EEM Valuation & Energy Efficiency Checklist*.

Lending institutions are committed to providing regular information enabling investors to analyse the Energy Efficient Mortgage products, following the Harmonised Disclosure Template.

In the context of the EEM Label the term "mortgage" refers to residential and commercial property loans which fall within the scope of the Capital Requirements Regulation (Regulation 2013/575/EU) and/or Mortgage Credit Directive (Directive 2014/17/EU) or under equivalent legislation outside of the EEA.

Early iterations of the technical screening criteria were of significant concern from the perspective of energy efficient mortgages. In particular, concerns were raised about the EPC A requirement for existing buildings built before 31 December 2020 in the mitigation technical screening criteria which would have significantly reduced (by up to 95%) eligible assets, with knock on effects for the entire value chain, from eligible mortgages to Taxonomy aligned green (covered) bonds.

The final version of the both the mitigation and adaptation technical screening criteria for construction and real estate activities adopted by the European Commission responds in many ways to concerns raised by the Banking Industry and arguably strikes a more reasonable balance between ambition and market reality. The revised reference to EPC A or, as an alternative, 15% best in class of the regional and national building stock in the mitigation criteria, for example, means that it will be more possible to achieve a critical number of eligible assets in order to stimulate and develop a value chain in energy efficient mortgages and the underlying green (covered) bonds funding these. Indeed, 90% of the building stock⁵ was built before 2001 and EPCs vary across countries: for example, buildings with EPC A may only represent 1% of the building stock in some countries. Moreover, upgrading a low energy level building to EPC A would be extremely difficult technically, economically and financially and the EPC A requirement in the original version would have risked creating 'stranded assets' in the housing market for consumers, lenders and investors.

⁵ European Statistical System, 2011 Census Data, <https://ec.europa.eu/CensusHub2/query.do?step=selectHyperCube&qhc=false>

Despite this progress, however, Industry scrutiny of the technical screening criteria for buildings points to remaining obstacles or important points for clarification, which present greater or less significant challenges according to jurisdiction and which will require attention at different levels in order to facilitate Taxonomy compliance:

1. General

The Energy Performance Certificate (EPC) is central to the technical screening criteria for real estate and construction, specifically those relating to ownership and acquisition and renovations. However, EPC databases do not exist in all Member States and where they do exist, access to them is not always possible for banks, meaning it is very difficult to benchmark the underlying assets of existing mortgage portfolios. Furthermore, there are significant differences in EPCs across Member States, with an EPC A in one country not necessarily comparable to an EPC A in another country. These issues and their implications will be explored in more detail in the context of the Green Asset Ratio on page 18. Finally, EPC estimations based on open data sets in property registries such as e.g., year of construction are, in a number of Member States, the only avenue for banks to assess real estate portfolio EPC label distribution. It is unclear whether such modelled EPC labels are considered to constitute an adequate data foundation from a regulatory perspective.

2. For acquisition & ownership

- Does the “best 15%” requirement only include buildings constructed up until the end of 2020? Or does the requirement include buildings that have been constructed up until the day of the analysis (e.g. if the analysis is conducted in 2023 does the best 15% requirement include buildings built until 2022)?
- What should be understood by "adequate evidence" (EU Taxonomy text) regarding the way to prove that a building is within the "best 15%"?

3. For new buildings

- Concrete numeric thresholds or ranges are not defined in the EPBD, meaning these requirements leave room for interpretation and thus allow Member States to define their nearly zero-energy buildings (NZEB) themselves, taking into account their country-specific climate conditions, primary energy factors, ambition levels, calculation methodologies and building traditions. It is thus a challenging task to find a common denominator to define NZEB at a European scale. At the time of writing, the concept of NZEB is not defined across all EU Member States and where there are definitions, these differ significantly from country to country. Concretely, this means that in many markets, it is not clear what NZEB -10% actually means and it is not possible to compare from one country to another. Furthermore, NZEB is not correlated with the EPC, which is central to building energy performance measurement across the other TSC.

4. For renovations

- How should the 30% reduction in Primary Energy Demand be measured (EPC and/or other alternatives)?
- Are building renovations that do not achieve EPC A or 15% 'best in class' of the acquisition & ownership criteria still Taxonomy eligible? Does a 30% reduction in PED suffice to achieve Taxonomy compliance?

As indicated above, the significance of the technical screening criteria for energy efficient mortgages is that they will determine Taxonomy alignment, or not, of the underlying mortgage loan, and in turn, the covered bond or securitisation funding the mortgage. Exactly what the Taxonomy means for underlying financial products remains unclear at the current time, although certain preliminary assumptions can be made based on the technical screening criteria, according to the nature of the transaction and the degree of energy performance of the building in question, which would determine whether an underlying mortgage is or is not Taxonomy eligible or is potentially only partially eligible.

Careful and appropriate guidance and clarity around the 'usability' of the Taxonomy for underlying financial products would be extremely important. Indeed, this 'usability' guidance would have the potential to either greatly stimulate and propel market development in energy efficient mortgages or limit the incentive for banks to grant these mortgages, depending on indications provided:

Example 1:

When a significant property renovation is undertaken, it very often includes energy performance improvements alongside replacement of the kitchen and bathroom, for example. Where this is the case and in order to incentivise renovation with all of the related positive spill-overs, it would be important to clarify that the entirety of renovation loans can be considered as 'eligible transition activities' when at least 50% of the loan relates to energy efficiency. When expenditure cannot be distinguished by type, 50% of the total renovation cost should be the proxy of energy efficiency. Furthermore, where costs cannot be practically separated in loans for acquisition and renovation, acquisition costs should be considered integral with eligible renovation costs. Finally, when determination of whether the loan relates to energy efficiency is not feasible, which is often the case for mortgages to retail customers, eligibility should be based on a minimum 30% decrease in primary energy demand certified by an EPC pre- and post-renovation. This is fully aligned with the recommendation of the European Commission's Technical Expert Group on page 367 of the Technical Annex of its Taxonomy Report.

Example 2:

As per the technical criteria, a building renovation must result in a reduction in PED of 30%. However, what is not clear is whether the 15% best in class requirement for acquisition and ownership is a strict cut-off for all existing buildings built before 31 December 2020. This would mean that a mortgage financing a renovation of an existing property which results in a shift from EPC G to EPC C, even if this meets the 30% improvement in primary energy demand, may not be Taxonomy eligible if the renovated building is not within the 15% best in class of

the building stock. If this were the case, this could significantly impact on a lending institution's strategy towards financing renovations, potentially impacting in turn on access to this type of finance for consumers should this result in higher interest rates.

Example 3:

Meeting the technical screening criteria is not the only challenge lending institutions will face when ensuring taxonomy alignment. Even if an economic activity contributes significantly to the climate change mitigation objective, it must still avoid doing significant harm to any of the other environmental objectives. In this respect, the 'Do No Significant Harm' criteria give rise to a number of concerns regarding provision of evidence of compliance. The main concern relates to a lack of clarity around how banks would be required to provide evidence of compliance for each mortgage or the underlying collateral and whether in fact they will have the data to prove alignment with each DNSH criteria for each collateral. The following criteria in particular give rise to a number of considerations:

- Water consumption: Due to a lack of national regulations/laws and therefore of data collection, proof of water consumption is unavailable. First, legal requirements would need to be addressed to manufacturers, before a corresponding legal standard can be established.
- Protection and restoration of biodiversity and ecosystems: How to prove and with what data that a building is not built on forestry or "arable land and crop land with a moderate to high level of soil fertility". It will be very difficult if it has to be proved for each collateral with spatial data. Furthermore, if it can be established that a building is built on arable land, how are banks able know if the area has moderate or high soil fertility?
- Transition to a circular economy & pollution prevention and control: Is it adequate to state that the requirements are based on EU regulations and thus all buildings fulfil the criteria? Or should data be provided for each collateral in order to prove compliance? In most cases even construction companies do not have building by building data to prove the alignment, meaning this would be impossible for banks to evidence.
- Climate change adaptation: how should this be proved in practice, should it be individually proved (for each collateral) that none of the 27 climate-related hazards listed in appendix A pose a threat?

Example 4:

Separate from the technical screening criteria themselves and rather related to the disclosure requirements in Article 8 of the Taxonomy Regulation is a further concern regarding the implications for mortgages for new construction in certain markets.

- *1.2.1.3.1.1. (i) Residential real estate lending
Credit institutions' KPI disclosure shall cover the retail lending portfolio, in particular the mortgage lending portfolio. This KPI shall be disclosed*

by taking into account compliance with the technical screening criteria for buildings as laid down in Sections 7.2., 7.3., 7.4., 7.5., 7.6., and 7.7. of Annex I to Climate Delegated Act.

Credit institutions shall disclose the KPI for their residential real estate lending portfolio as a proportion of loans to households collateralised by residential immovable property contributing to the environmental objective of climate change mitigation as laid down Sections 7.2., 7.3., 7.4., 7.5., 7.6., and 7.7. of Annex I to Climate Delegated Act, compared to total loans to households collateralised by residential immovable property.

The KPI disclosure does not cover the technical screening criteria for new construction. However, in the Netherlands, for example, borrowers already request a mortgage loan when they register for a new-build property they intend to buy. Once it is confirmed that they have qualified for financing for the property and construction starts, they actually receive the mortgage loan and during the construction period of the property, the borrower is required to make down payments (e.g. at 50%, 60%, 70%, 80% & 90% of construction). As a result, mortgage lenders in the Dutch market have the mortgage loan already on their books for a long period (potentially up to two years). It is therefore critical that these loans (where the underlying collateral i.e. the new construction qualifies) are recognised as ‘sustainable’ as well. In the Netherlands, new build mortgages are a huge priority 1 million new properties must be built in the next 10 years to meet demand (against the 7-8 million currently).

Two case studies in particular examining the application of the Taxonomy to mortgage loans recently published by the EBF/UNEPPFI⁶ point to similar obstacles as those highlighted above. The most relevant excerpts of the case studies in question are displayed below in tables 2 and 3. The full case studies and others can be consulted [here](#).

⁶ <https://www.ebf.eu/wp-content/uploads/2021/01/Testing-the-application-of-the-EU-Taxonomy-to-core-banking-products-EBF-UNEPPFI-report-January-2021.pdf>

Box 3 Case Study: BNP Paribas – Application of the EU Taxonomy for mortgage loans granted to individuals

Case Description

- 1) Mortgage loan of 200,000 euros to build a house near Paris.
- 2) Mortgage loan of 50,000 euros to renovate a flat in Paris, to improve its energy efficiency.
- 3) Mortgage loan of 200,000 euros to buy a flat (built before 2021) in Paris.

We studied this case from a theoretical point of view as we were not able to collect the required information either manually or from a "system".

Eligibility criteria and thresholds

- For a loan to build a house: there is currently no national definition of NZEB across all EU countries.
- For a loan to renovate a flat: the 30% reduction in primary energy demand should be compared with the energy performance before renovation and proved by an Energy Performance Certificate. However, there is no centralised data source for the EPCs existing in the EU countries.
- For a loan to build a house before December 2020: local or national information on EPCs and the "top 15 %" is not available; "The TEG recognises that more work needs to be done to collect and analyse data in order to define absolute thresholds corresponding to the performance of the top 15% of each local stock, such as data showing the distribution of EPCs across the stock and the thresholds used to define EPC ratings."

Challenges

The alignment of national definitions is key.

Banks' systems need to be able to interrogate EPC databases. Therefore, regulation that obliges governments to share these databases with banks is essential to achieve a scalable framework. Because the EU Taxonomy does not provide any correspondence, existing labels on the real estate market should be mapped by label providers.

Box 4 Case study: Caixabank - Application of the EU Taxonomy for retail mortgage loans”

Introduction

This case study is aimed at assessing Taxonomy compliance of retail mortgage loans granted to private individuals to finance the acquisition of a residential real estate, with the financed good as a collateral. This is done through a sample of private retail clients in Spain. Specifically, the eligibility under the Mitigation Taxonomy for Acquisition and Ownership in the Real Estate Activities sector (chapter 8.4 of the Technical Annex to the Technical Expert Group (TEG) final report on the EU Taxonomy). After analysing the available relevant documentation, we consider that the transaction meets the Taxonomy with regards to the mitigation criterion, but the fulfilment of the Do No Significant Harm (DNSH) criteria could not be positively evidenced without making certain assumptions.

EU Taxonomy assessment

We have evaluated mortgage loans for the acquisition of a flat in an apartment block (built before 31/12/2020) in Spain. For these transactions, loans are notarised and the financed flat acts as the collateral for the loan. The value of the collateral is based on an appraisal carried out by an independent real estate appraisal company (Third-Party Appraisal), which is compulsory for mortgage loans. The maximum loan amount is then capped to the lowest percentage between the appraisal value and the notarised purchase price (typically 80%).

Residential real estate properties which are sold need to have an Energy Performance Certificate (EPC). The EPC has been mandatory in Spain for newly built buildings since 2007 and for the sale and rental of existing real estate assets since 2013. The EPC needs to be provided by the seller to the buyer and evidence of this information needs to be registered by the notary. In Spain there is a public registry of EPC ratings for real estate assets. The Spanish government publishes statistics of EPC rating distribution at Autonomous Community level.

At CaixaBank the EPC is requested during the credit approval process, and the EPC label is captured in the credit approval system. Mitigation criteria We have assessed the alignment with the mitigation criteria by checking the EPC. According to the distribution of EPCs in Spain, EPC classes A and B are within the top 1% of residential real estate assets with an EPC, both in terms of CO2 emissions and of primary energy demand. Therefore, if the EPC label is A or B, the flat is considered to be complying with the threshold (i.e. top 15% of energy performing real estate properties).

Do No Significant Harm (DNSH) criteria assessment

Not all DNSH criteria could be positively evidenced as the level of information / documentation requested for a retail mortgage loan is, in general, not sufficient in this respect. However, if certain documented assumptions could be made, we believe mortgage loans labelled A or B could be eligible to be classified for Taxonomy purposes. Following this idea, we have judged most of the DNSH criteria as being fulfilled through a qualitative assessment as follows below.

Recommendations

- Ensure all governments centralise and share the EPC database with banks (IT systems).
- Practical details should be provided in respect of the criteria, principles and thresholds to make assessing eligible mortgage loans simpler.
- Allow more flexibility for DNSH criteria

The case study has been useful in structuring the analysis of individual criteria. Despite the documentation limitations of retail transactions, we consider that there are assumptions that can be made to show reasonable compliance with the Taxonomy, specifically the DNSH criteria. Without these assumptions, retail mortgage loans could not be classified for Taxonomy purposes. We understand that the regulator should consider this possibility when applying the Taxonomy to a retail banking portfolio. With regards to the mitigation criterion, the EPC rating is key. The set-up of publicly accessible EPC rating registries and public regional statistics of EPC distribution are therefore necessary to enable the evidence of the mitigation criterion; this is already the case in Spain. For banks it pays to request the EPC during the credit approval process and to capture the EPC rating information in the relevant IT systems. This information is not only useful for the taxonomywise classification of assets; it is also useful for climate risk management purposes, carbon accounting, reporting, etc., in line with supervisory expectations of banks regarding climate and environmental risk management.

What does the EU Taxonomy mean for the broader Energy Efficient Mortgage value chain?

As indicated above, the EU Taxonomy will impact on the whole energy efficient mortgage value chain from the origination of energy efficient mortgages to the issuance of energy efficient or green covered bonds. As Rudolf, Schadow and Schuller (2021) note in their article “*Green Covered Bonds – An important contribution to climate neutrality*” in the 2021 ECBC Covered Bond Fact Book, “*the 15% best in class criterion for buildings built before 2021 is probably most crucial for the future abilities of banks to issue green covered bonds that solely (re)finance taxonomy aligned real estate loans*”⁷. This is linked to the still relatively limited portion of buildings labelled with an EPC A and the fact that it remains difficult to compare EPC labels from one country to another as a result of more or less strict thresholds depending on the jurisdiction. The authors also indicate that most sustainability bond frameworks of European covered bond issuers already use the 15% best in class selection criterion for green building assets and note that as a result of the 15% best in class alternative in the EU Taxonomy, these frameworks will not have to limit the use of EPC labels to class A, as long as proper evidence is provided that the selected property loans indeed represent the 15% most energy efficient building assets.

On renovation, the authors indicate that where issuers include renovation loans in their green asset portfolios – and it is not the case that all do -, they typically refer to a 30% improvement in energy performance, but generally without additional conditions, such as the Technical Screening Criteria’s requirement that the

⁷ Rudolf, Schadow & Schuller. (2021). *Green Covered Bonds – An important contribution to climate neutrality*. *ECBC Fact Book 2021* <https://hypo.org/ecbc/publications/fact-book/>

upgrade be achieved within three years. For new construction, apparently very few frameworks have separate criteria for these, but where they do, some apply a stricter NZEB criterion of -20% criterion which is in line with an earlier draft of the technical screening criteria proposals (which has since been replaced by -10%).

Regardless of the current state of play, it is the authors' expectation that most covered bond frameworks will be updated to reflect the first technical screening criteria and ensure an optimal taxonomy compliance of green asset portfolios.

As the analysis above demonstrates, the EU Taxonomy presents real challenges for financial institutions in the months and years ahead and a number of obstacles, both inherent to the technical screening criteria and relating to their practical usability from the perspective of financial products, will need to be addressed in the coming months and years in order to facilitate real and lasting compliance.

The reality however is that the EU Taxonomy will be mandatory for a large number of European companies. All those offering financial products on the European market and those falling under the Non-Financial Reporting Directive (NFRD) will have to comply. Compliance is therefore unavoidable. At the same time, however, the Taxonomy will also present opportunities to those who embrace and adapt quickly to the requirements:

- **Reputation & risk management:** It is expected that the EU Taxonomy will be largely applied within and beyond Europe. The EU Taxonomy aims to provide certainty to investors and protection against “greenwashing” claims. Once a company discloses its alignment with the screening criteria, it will provide detailed information on the actual environmental impact and sustainable performance of its economic activities. As the EU Taxonomy will indicate whether and to what extent a company is contributing to environmental objectives, it is likely that alignment with the EU Taxonomy will have an impact on a company's reputation.
- **Access to investment:** Alignment with the EU Taxonomy will create visibility and transparency for investors, enabling them to gain insights into which investments are genuinely environmentally sustainable. Financial market participants that want to increase their share of taxonomy-aligned investments will look to invest in companies with taxonomy-aligned activities and that have disclosed this. Therefore, in addition to attracting investors based on reputation, banks will also have better access to a broader investor base by disclosing their alignment with the EU Taxonomy.
- **Analysing & communicating sustainable impacts:** As a result of its common language and best practices that allow for benchmarking, the EU Taxonomy provides banks with an opportunity to understand and communicate effectively, both internally and externally, the sustainable impact of their activities, whilst getting an insight into what improvements still need to be made.

- **Future-proofing:** By aligning with the EU Taxonomy Regulation, companies can identify potential risks, measure exposure and determine overall weaknesses or vulnerabilities. This will help build climate resilience and future-proof the business, which will be in turn more attractive to investors.

2.1.1 Implications for other relevant legislation

NFRD & SFDR

The EU Taxonomy will have significant implications for the Non-Financial Reporting Directive 2014/95 (NFRD) to be renamed the Corporate Sustainability Reporting Directive (CSRD) after revision this year, and the Sustainable Finance Disclosure Regulation (SFDR).

With regard to the latter, the disclosure obligations which have been in force since March 2021 apply to financial advisors and financial market participants, meaning financial service providers that invest third party funds or that offer financial products. It covers fund managers (managers of alternative investment funds, UCITS management companies and self-managed AIFs and UCITS), insurance undertakings, investment firms and credit institutions providing portfolio management services. The SFDR introduces additional disclosure requirements to the existing elements of relevant sectoral legislations (AIFMD, UCITS, Solvency II, IDD and MiFID II) both at the legal entity, as well as, at the financial product-level. Product-level disclosure requirements affect pre-contractual disclosure (client information, brochure, etc), product website disclosure, and periodic product reports.

While energy efficient mortgages are not directly impacted in the scope of the SFDR when sold as retail financial products to consumers, there is a relevance of the SFDR for these mortgages when they are included in an investment fund. In this case, the ‘greenness’ of the underlying mortgages in the fund will be instrumental in determining whether a fund promotes sustainable investments as an explicit objective (“article 9 products”) in which case it is a ‘dark green’ fund, or otherwise include the promotion of environmental or social characteristics (“article 8 products”), in which case it is a ‘light green’ fund.

The SFDR also have significant implications for ‘green bonds’ and, by extension, the underlying assets, in this case energy efficient mortgages. As Rudolf, Schadow and Schuller outline in their article Green Covered Bonds – An important contribution to climate neutrality in the 2021 ECBC Fact Book⁸, the key performance indicator (KPI) measuring the taxonomy compliance of financial products calculates the volume of taxonomy-aligned investments as the weighted average of:

- Green bonds issued under the future EU Green Bond Standard (GBS) = 100% market value;

⁸ Rudolf, Schadow & Schuller. (2021). Green Covered Bonds – An important contribution to climate neutrality”. *ECBC Fact Book 2021* <https://hypo.org/ecbc/publications/fact-book/>

- Other green bonds = proportion of the market value corresponding to the proportion of the proceeds used to finance taxonomy aligned activities;
- Debt instruments and equities in investee companies = market value of the proportion of debt instruments/equities reflecting the proportion of activities of the investee companies that is associated with environmentally sustainable activities.

For banks this proportion is the share of environmentally sustainable activities as disclosed under the NFRD i.e. the “green asset ratio” – more on this later. Rudolf, Schadow and Schuller highlight that the taxonomy compliance of vanilla bonds will also be considered by way of the share of activities of the issuer that are deemed to be environmentally sustainable, meaning that the taxonomy-related disclosure requirements are likely to impact all bonds issued, whether involving a sustainable use of proceeds or not. The authors suggest that *“issuers reporting a stronger taxonomy alignment under the NFRD could see this translate into more favourable trading levels, also for their vanilla bonds. The intentions of the ECB to introduce climate change related disclosure requirements for the collateral and asset purchase treatment of private sector assets, may only strengthen this effect.”* More on the ECB requirements later, too.

All in all, these disclosure regulations will result in companies, including banks, being subject to greater investor scrutiny on the sustainability of their activities, among others from portfolio managers who will be required to demonstrate the extent to which their investment funds and portfolios consider sustainability aspects.

‘Ecolabel’ for Financial Products

Ongoing EU policy initiatives will also link standards and labels to Taxonomy aligned economic activities, including the draft EU Ecolabel criteria for financial products, in which there is a requirement for a certain share of underlying activities invested in to be Taxonomy aligned. Thus, the EU Ecolabel will be awarded to financial products only if the companies they invest in carry out Taxonomy-aligned activities. For the time being, the European Commission is developing criteria for retail financial products, such as equity funds, bonds funds and saving accounts, but it is anticipated that criteria could also be developed with a view to labelling ‘green’ mortgages.

If and when this is the case, it will be important to ensure alignment between such a label and the Energy Efficient Mortgage Label. This being said, experience with the Covered Bond Label⁹ has shown that where a market-led Label is sufficiently robust, achieves its transparency and quality benchmark objectives and is well-respected by market participants, it can be recognised by the European legislator, as is the case with the Covered Bond Label in the Covered Bond Directive. It is the ambition of the EEM Label to position itself as the benchmark in this area and therefore achieve and maintain a similar status as that of the Covered Bond Label. As such, continued on-boarding of lending institutions to the EEM Label,

⁹ www.coveredbondlabel.com

reputation building around the Label in close cooperation with market stakeholders and close ongoing dialogue with the European Commission in this area will be important moving forward.

2.1.2 Other environmental objectives

While to date and for the coming months, all eyes are on the climate change mitigation and adaptation technical screening criteria, the remaining four criteria are to be established by the end of 2021 and will apply in principle as of 1 January 2023.

At the current time, there are no precise criteria and thresholds for the four environmental objectives, although the Taxonomy Regulation specifies for each objective how substantial contribution is defined (Articles 12-15), indicating what activities will be considered as eligible for screening. The Platform on Sustainable Finance is currently developing technical screening criteria for the objectives which will in principle be published in a report by the end of 2021 serving as the basis for the delegated act to be adopted thereafter.

As the analysis above shows, the criteria for the climate change mitigation and adaptation objectives are complicated and a number of questions remain as to their application. However, and as Ramboll points out¹⁰, the criteria are based on one single indicator, CO₂ equivalents. The criteria for the remaining four environmental objectives will be based on many more indicators, as they will depend on many more factors which cannot be boiled down into one single indicator. For this reason, they are expected to be much more complex. Ramboll analysed the impacts of different economic activities for the four other environmental objectives and identified 22 indicators for the assessment of pollution prevention and control alone.

It remains to be seen what shape the criteria for the four other environmental objectives will take but giving their expected complexity, implementation, which will need to be completed in a relatively short timeframe, is expected to be time-consuming and complicated. There are therefore strong arguments in favour of lending institutions already considering how they might respond to these forthcoming challenges as well.

2.2 GREEN ASSET RATIO

On 1 March 2021, the European Banking Authority (EBA) published an Opinion in response to a Commission call for advice on KPIs and related methodology for the disclosure by credit institutions and by investment firms of information on how and to what extent their activities qualify as environmentally sustainable in accordance with the EU Taxonomy. The main KPI proposed is the Green Asset Ratio (GAR) which identifies institutions' assets financing activities that are environmentally sustainable according to the EU Taxonomy, such as those consistent with the European Green Deal and the Paris Agreement goals, as a percentage of their total eligible exposures. Information on the green asset ratio is

¹⁰ <https://ramboll.com/ingenuity/why-the-eu-taxonomy-regulation-is-about-much-more-than-climate>

supplemented by other KPIs that provide information on the taxonomy-alignment of institutions' services other than lending and investing. The EBA has also integrated proportionality measures that should facilitate institutions' disclosures, including transitional periods where disclosures in terms of estimates and proxies are allowed.

Of specific relevance to energy efficient mortgages are the indications for residential real estate loans in particular, as well as those for commercial real estate exposures to non-NFRD NFC, housing loans to municipalities, and repossessed real estate collaterals. In all cases, the estimation of the GAR should be based on the energy performance of the underlying collateral/asset, based on the energy performance certificate label (EPC), in line with the screening criteria proposed in the Taxonomy for the acquisition of buildings (old and new) and renovation of buildings. Institutions are asked to disclose the aggregate GAR and the breakdown by environmental objectives (for climate change mitigation and climate change adaptation initially), and for stock and new loans, to show the current position of the institution (stock of loans) and the evolution towards sustainability (new loans). The disclosure of the GAR should also include a breakdown between transitional/adaptation activities (activities that are substantially contributing to the objectives of climate change mitigation and adaptation) and enabling activities (those activities that enable other activities that substantially contribute to the climate change objectives).

In a report from March 2021¹¹, ING suggests that for GAR calculation purposes, the technical screening criteria for buildings will be by far be the most important for banks. ING estimates that the buildings criteria alone could impact the GAR by almost 45% as they affect the GAR aggregate in multiple ways: Household residential real estate assets; SME commercial real estate assets; Corporate sector exposures to construction and real estate activities; Loans and advances financing public housing; Repossessed real estate collateral.

In general, and from a practical perspective, market experts are suggesting that the GAR has the potential to be a useful tool to support investors in their due diligence by facilitating peer-to-peer comparisons and in better orienting their capital towards those banks which are really leading the way in ESG terms. Some have suggested that as investors become more accustomed to the ratio, and as banks are able to provide more complete data disclosure, the GAR will begin to directly influence the share price of banks¹², again pointing to its potentially significant role.

However, at the same time, questions have been raised about the usefulness of the GAR and whether it will actually drive change. In the case of energy efficient mortgages, two concerns in particular, around the binary nature of the Taxonomy and data availability, are the most relevant:

Data

¹¹ https://think.ing.com/uploads/reports/EBA_report_NFRD_disclosure_150321.pdf

¹² <https://capitalmonitor.ai/institution/banks/what-the-green-asset-ratio-will-mean-for-banks/>

The EBA's GAR proposals build entirely upon the EU Taxonomy's technical screening criteria. However, as is widely recognised and described above, there are significant challenges related to the availability of EPC data for banks. The EBA recognises this obstacle and encourages the European Commission to support centralised, publicly accessible EPC databases. The EBA furthermore suggests a transition period until 2024 (or 2022 if the counterparty is subject to the NFRD) to give banks time to collect the relevant information on their mortgage loan books, while allowing them to use proxies in the meantime.

These efforts may go some way to addressing data availability problems for banks, however they do not address issues related to comparability of EPCs across countries. In response to this issue, the EBA suggests that banks should disclose clear information on the meaning of each label in terms of energy efficiency and consumption in the EU jurisdictions where they operate. However, whether methodology is disclosed or not, banks located in countries with stricter criteria for EPC A will likely record a lower GAR than banks from countries where the criteria for EPC A are more lenient.

Transition activities

While the GAR provides insight into the proportion of assets on banks' balance sheets that are Taxonomy aligned, there are concerns that it will not necessarily capture assets that have become more energy efficient but do not yet meet the requirements of the Taxonomy's screening criteria. This relates to the issue already outlined earlier in this paper relating to the concern that if the 15% best in class requirement for acquisition and ownership were to be a strict cut-off for existing building built before 31 December 2020, this could mean that a shift from EPC G to EPC C, even if this meets the 30% improvement in primary energy demand, may not be reflected in the GAR if the renovated building is not within the 15% best in class of the building stock, while a shift from EPC C to EPC A would. This would be the case even if the shift from EPC G to EPC C would probably contribute to bigger energy efficiency savings than when funding the renovation of an already relatively efficient building with EPC C to EPC A. The GAR therefore potentially offers an incomplete overview of banks' transition efforts.

It is for these and other reasons - related to other sustainable product offerings that would likely not appear in the GAR such as ESG linked revolving credit facilities to corporates - that many market experts are warning against using the GAR as a single metric to determine how sustainable a bank's activities are.

Whatever the merits and limitations of the Taxonomy, it is clear that the interaction between the EU Taxonomy and the GAR will be a critical game changer for banks and their customers (i.e.: European SMEs and citizens), in general and specifically related to energy efficient mortgages because the composition and evolution of a bank's asset are front and centre of its strategy.

2.3 RENEWED SUSTAINABLE FINANCE STRATEGY: GREEN MORTGAGE DEFINITION & MORTGAGE CREDIT DIRECTIVE

A central focus of the European Commission’s Renewed Sustainable Finance Strategy, published in July 2021 and building on the Sustainable Finance Action Plan, is efforts to empower retail investors and SMEs to access sustainable finance opportunities. From the perspective of energy efficient mortgages, there are two planned actions, to be delivered by 2022, which are of direct relevance:

1. The European Commission’s plans to ask the EBA for an opinion on the definition and possible supporting tools for green retail loans and green mortgages.
2. The European Commission’s plans to explore ways to support the uptake of energy efficient mortgages in the framework of the Mortgage Credit Directive Review and launch an EU-wide information campaign addressed to businesses and households highlighting the features and benefits of such loans.

EEM definition

Depending on the form it takes, a definition of “green mortgages” proposed by the EBA could of course have the potential to significantly influence the further evolution of energy efficient mortgage products, as well as key outputs of the EEMI directly linked to the EEMI definition, in particular, the EEM Label. Given the primacy of the EU Taxonomy in all sustainable finance related legislation to date and moving forward, it is most probable that any such EU definition would be closely aligned with the technical screening criteria. In light of the fact that it is also the intention of the EEM Label Committee to align the EEM Label Convention with the EU Taxonomy as much as possible, there are reasons to believe that an EU definition may not diverge significantly from the existing EEMI definition. However, close and ongoing dialogue with the European Commission and EBA on this issue will be critical in the months ahead to ensure consistency and secure work and efforts already undertaken since 2015 under the EEMI.

MCD Review

With the Review of the Mortgage Credit Directive already several years in the pipeline, discussions on how to use the Directive as a vehicle to stimulate energy efficient mortgages, in line with the work of the EEMI, have been ongoing for some time. The specific reference to the Review in the Renewed Sustainable Finance Strategy formalised these plans and indicated a deadline by which the assessment should be conducted (2022).

To date, discussions have touched upon the potential for positive references to be made to energy efficient mortgages in the provisions relating to advertising, pre-contractual information and creditworthiness assessment, for example. These discussions are ongoing as of September 2021 and for the time being no conclusions can be drawn on the form any such references would take.

One important consideration, however, is that the high-level, principles-based nature of the Directive should be respected in the interests of consistency and coherence and to safeguard the well-performing nature of the Directive so far. The inclusion of references relevant to energy efficient mortgages in certain provisions, for example, a specific feature of the underlying collateral i.e. its energy performance, or particular information to be collected for credit assessment purposes i.e. energy bills, would add a level of prescription which is otherwise not present in the Directive, potentially creating a distortion.

At the time of writing, the Industry is in ongoing dialogue with the European Commission on this issue and it will constitute an important element of the Review of the Directive for which, at the time of writing, a ‘call for evidence’ and public consultation are awaited.

2.4 EU GREEN BOND STANDARD

The European Green Bond Standard (EUGBS) is a voluntary standard intended to help scale up and raise the environmental ambitions of the green bond market. The EUGBS was introduced as a planned action in the European Commission’s 2018 Sustainable Finance Action Plan and is part of the EU Green Deal. The proposed EUGBS Regulation, which was published on 7 July 2021 and will underpin the Standard is intended to set a benchmark for how companies and public authorities can use green bonds to raise funds on capital markets to finance such ambitious large-scale investments, while meeting tough sustainability requirements and protecting investors.

The EUGBS is intended to ensure that issuers of green bonds will have a robust tool to demonstrate that they are funding legitimate green projects aligned with the EU taxonomy, while investors buying the bonds will be able to more easily assess, compare and trust that their investments are sustainable, thereby reducing the risks posed by greenwashing.

The new EUGBS will be open to any issuer of green bonds, including companies, public authorities, and also issuers located outside of the EU.

There are four key requirements under the proposed framework:

1. **Taxonomy-alignment:** The funds raised by the bond should be allocated fully to projects that are aligned with the EU taxonomy
2. **Transparency:** Full transparency on how the bond proceeds are allocated through detailed reporting requirements
3. **External review:** All European green bonds must be checked by an external reviewer to ensure compliance with the Regulation and taxonomy alignment of the funded projects

4. **Supervision by the European Securities Markets Authority (ESMA) of reviewers:** External reviewers providing services to issuers of European green bonds must be registered with and supervised by the ESMA. This will ensure the quality of their services and the reliability of their reviews to protect investors and ensure market integrity.

There is no doubt that the EUGBS will have implications for the energy efficient mortgage ‘value chain’ i.e. the relationship between the origination of the energy efficient mortgage and its funding through green bonds or covered bonds, which has been a core focus of the EEMI. Again, Rudolf, Schadow and Schuller (2021) point to the likely importance of the EU GBS moving forward insofar as “*fixed income investors will likely favour those instruments that meet all the criteria of the future EU green bond standard, as these bonds are considered to be 100% taxonomy aligned*”¹³. The authors suggest that this may be the case for smaller investors in particular who may not have the necessary resources to conduct due diligence around taxonomy compliance for each and every green bond. Significantly, the authors point to industry initiatives, such as the EMF-ECBC’s Energy Efficient Mortgages Initiative (EEMI) and the VDP’s minimum standards for Green Pfandbriefe, as important tools for both issuers and investors in their green bond structuring and investment processes.

This being said, the impact of the EUGBS on the ‘value chain’ will also be dependent on its final calibration. In this respect, there are 3 relevant aspects in particular which will be crucial in boosting issuance:

- *Grandfathering of covered bonds & underlying assets*

Recital 11 of the EUGBS proposal is very clear on why the grandfathering is necessary:

¹³ Rudolf, Schadow & Schuller. (2021). Green Covered Bonds – An important contribution to climate neutrality. *ECBC Fact Book 2021* <https://hypo.org/ecbc/publications/fact-book/>

Box 5 Article 4 of Regulation (EU) 2020/852

Article 4 of Regulation (EU) 2020/852 requires Member States and the Union to apply the criteria set out in Article 3 of that Regulation to determine whether an economic activity qualifies as environmentally sustainable for the purposes of any measure setting out requirements for financial market participants or issuers in respect of financial products or corporate bonds that are made available as environmentally sustainable. It is therefore logical that the technical screening criteria referred to in Article 3, point (d), of Regulation (EU) 2020/852 should determine which fixed assets, expenditures and financial assets can be financed by the proceeds of European green bonds. In view of the expected technological progress in the field of environmental sustainability, the delegated acts adopted pursuant to Articles 10(3), 11(3), 12(2), 13(2), 14(2) or 15(2) of Regulation (EU) 2020/852 are likely to be reviewed and amended over time. Regardless of such changes, in order to provide legal certainty to issuers and investors and prevent amendments to the technical screening criteria from having a negative impact on the price of European green bonds that have already been issued, issuers should be able to apply the technical screening criteria applicable at the moment the European green bond was issued when allocating the proceeds of such bonds to eligible fixed assets or expenditures, until maturity of the bond. To ensure legal certainty for European green bonds whose proceeds are allocated to financial assets, it is necessary to clarify that the underlying economic activities funded by those financial assets should comply with the technical screening criteria applicable at the moment the financial assets were created. Where the relevant delegated acts are amended, the issuer should allocate proceeds by applying the amended delegated acts within five years.

Source: European Commission (2021), "REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on European green bonds" p. 18-19, [link](#)

However, Art. 7(2)(3) of the EUGBS proposal introduces a 5-year grandfathering period for financial assets. This means that financial assets risk losing Taxonomy eligibility status after the 5-year period has elapsed, potentially undermining borrower, lender and investor certainty and predictability, also in the case of financial assets refinanced through green bonds, which is crucial for the transition towards more sustainable finance. The risk of losing Taxonomy eligibility creates possible barriers to long-term investments.

In response to a recent consultation issued by the European Commission on the EUGBS, the European Mortgage and Covered Bond Industries¹⁴ called for alignment of the EUGBS in this respect with the Technical Expert Group (TEG) recommendation on p.29 of its EuGBs Report and p.32 of the accompanying Usability Guide i.e; that EU Green Bonds should be grandfathered for their entire tenure and this should apply to both the covered bonds and their underlying assets e.g. mortgage loans, given the structural link between the asset and the liability side, meaning their maintain their taxonomy eligible status throughout their lifetime.

- *Use of proceeds*

¹⁴ <https://hypo.org/app/uploads/sites/3/2021/09/EMF-ECBC-Comments-on-the-Proposal-for-a-Regulation-on-EUGBS-14.09.21.pdf>

The EUGBS Proposal requires that 100% of the proceeds of green bond issuances be used to finance or refinance Taxonomy-aligned assets. Meeting this requirement however would require large volumes of mortgage loans which would take years to accumulate to meet minimum issue size. Without appropriate flexibility, it would take years before banks – and especially small banks - could issue an EU Green Bond, with knock-on effects for financing to borrowers and for the climate goals. In their Response to the European Commission’s Consultation, the European Mortgage and Covered Bond Industries proposed a threshold of 80% for a transition period of at least 5 years, and the possibility to extend to categories of assets which are not included in the current Taxonomy, considering that the latter must be updated in a timely manner.

- *Reporting on taxonomy compliance*

Finally, the European Mortgage and Covered Bond Industries furthermore proposed that issuers of covered bonds be allowed to report on the greenness of the cover pool using the Taxonomy in force at the time of granting the loans backing the bond. In other words, it should be possible to label the proportion of assets in the cover pool that are aligned with the Taxonomy, as recommended by the TEG in section 3.3.4, p. 40 of its Taxonomy Report. These covered bonds should still meet the same requirements as 100% Taxonomy aligned covered bonds i.e. verification, 2nd party opinion, allocation reporting, impact reporting etc. Investors would still have an incentive to buy covered bonds from a cover pool with a high percentage of Taxonomy aligned assets, which would give the issuers an incentive to promote lending to green projects.

At the time of writing, the European co-legislators are considering the EUGBS Proposal and Paul Tang (S&D, NL) has been appointed as Rapporteur for the European Parliament’s Economic & Monetary Affairs Committee. The timeframe for adoption is not yet known.

2.5 EBA PRUDENTIAL DISCLOSURES

As indicated above, the EBA is working on draft implementing technical standards (ITS) on Pillar 3 disclosures of ESG risks under Article 449a of the Capital Requirements Regulation ((EU) 575/2013) (CRR) as part of the Pillar 3 reporting framework, currently designed for disclosure of regulatory capital and risk exposures. When developing these proposals, the EBA has built on the Financial Stability Board Task Force on Climate-related Financial Disclosures (FSB-TCFD) recommendations, the Commission’s non-binding guidelines on climate-change reporting, and on the EU Taxonomy. The EBA is conducting this work in parallel with the Advice to the Commission on disclosures under Article 8 of the Taxonomy Regulation, including the proposal for a GAR.

The draft ITS introduce eight disclosure templates, covering transition risk and physical risk. Quantitative disclosures on climate risks are required to include:

- Transition risk. The disclosure requirements focus on banking book exposures, although banks with trading books over EUR500 million or 10% of the bank’s total assets will also be required to produce ESG disclosures in relation

to their exposures:

- Physical risk. Banks will be required to disclose information on banking book exposures to NFCs, and on their activities in geographies and sectors that are most exposed to chronic and acute physical risk because of climate change. They will also be required to disclose information on how collateral held is exposed to physical risks.
- Broader qualitative disclosures on ESG risks (such as environmental risks that go beyond climate change and social and governance risks). At this stage, banks will only be required to disclose qualitative information on these risks. Quantitative disclosures in this area will be introduced at a later stage, via separate ITS.

Of relevance to energy efficient mortgages are the requirements in relation to disclosure around transition risk, namely that for retail mortgages and commercial real estate loans, banks will be required to capture transition risk through disclosure of the distribution of loans according to the Energy Performance Certificate of the collateral.

These requirements give rise to a number of considerations:

- Firstly, there is potential for overlap between these and the multitude of other disclosure requirements, many of which are presented above. As such, it would be important that all ESG Pillar 3 requirements be aligned with the content, scope and frequency of reporting of the NFRD/CSRD and that Article 8 reporting requirements not be included in the scope of Pillar 3 and only disclosed under the Taxonomy Regulation Delegated Act. This is a point which was made by Industry bodies during the consultation phase during the first half of 2021¹⁵.
- Secondly, compliance with the ITS presumes availability of and access to certain data, specifically EPC for retail mortgages and commercial real estate loans. As indicated earlier, there are problems of access of banks to EPCs across many Member States, making it very difficult to benchmark and report on the existing loan book, as well as comparability of EPCs across countries, meaning banks in jurisdictions with particularly strict criteria for EPC A for example will be penalised compared to banks in jurisdictions with less stringent criteria. Furthermore, for commercial mortgage loans in some countries, the EPC is not used as a measure for the energy performance of the real estate. Again, this would make it challenging for these banks to comply with the requirements. One way of addressing this concern, as put forward by Industry representatives¹⁶, would be to take a step-by-step approach to the disclosures, starting with a limited number of core templates in areas where data and methodologies are available and of a high quality, and gradually extending these over time.

¹⁵ <https://www.ebf.eu/sustainable-finance/eba-consultation-on-draft-technical-standards-on-pillar-3-disclosures-of-esg-risks-ebf-response/>

¹⁶ <https://www.ebf.eu/sustainable-finance/eba-consultation-on-draft-technical-standards-on-pillar-3-disclosures-of-esg-risks-ebf-response/>

In terms of the future, it is anticipated that the EBA would enlarge the Pillar 3 ESG disclosures over time, if and when the European Commission decides to extend the technical screening criteria of the Taxonomy Regulation to social risks and environmentally harmful and neutral activities. In that case, the EBA would be expected to revise the quantitative information proposed in the draft ITS in order to align it with the Taxonomy Regulation definitions and classification criteria.

2.6 EBA ASSESSMENT OF CAPITAL REQUIREMENTS & CLIMATE RISK

Last but not least and further to a mandate from the Capital Requirements Regulation (Article 501c of CRR 2), the EBA is currently assessing whether a dedicated prudential treatment of exposures related to assets or activities associated substantially with environmental (and/or social) objectives would be justified (as a component of Pillar 1 capital requirements). In particular, the EBA must assess:

- methodologies for the assessment of the effective riskiness of exposures related to assets and activities associated substantially with environmental and/or social objectives compared with the riskiness of other exposures;
- the development of appropriate criteria for the assessment of physical risks and transition risks;
- the potential effects of a dedicated prudential treatment of exposures associated substantially with environmental and/or social objectives and activities on financial stability and bank lending

Originally, the deadline for delivery of this assessment was 2025, however, in its Renewed Sustainable Finance Strategy, the European Commission has asked the EBA to bring forward its work to 2023, pointing to the apparent importance and relevance that is given to this aspect in the context of stimulating the financing of the transition.

Indeed, and as indicated earlier, the link between building energy efficiency in particular and credit risk has long been a cornerstone of the EEMI. In fact, one of the underlying premises of the energy efficient mortgage product is that a negative correlation between building energy performance and credit risk could be reflected in a realignment of capital requirements for energy efficient mortgages and in turn drive a virtuous circle, according to which all stakeholders, first and foremost borrowers, derive a benefit. It was this 'business case' which gave rise to significant efforts under the EEMI to substantiate this relationship through in-depth econometric analysis. The results of this analysis¹⁷ point to a significant negative correlation between building energy performance and credit risk, based

¹⁷ <https://energyefficientmortgages.eu/wp-content/uploads/2021/07/Italian-Correlation-Analysis.pdf> & <https://energyefficientmortgages.eu/wp-content/uploads/2021/07/Extended-Dutch-Correlation-Analysis.pdf>

on a lower probability of consumer default. Soon to be published further analysis conducted by the Energy Efficiency Financial Institutions Group (EEFIG) extends and confirms this analysis.

The efforts of the EEMI to substantiate this correlation have garnered significant interest in the EU and Member States, no more so than in Hungary, where, as a direct result of the work of the EEMI, the Hungarian Central Bank has been offering preferential capital requirements to banks against balance sheet exposure to energy-efficient housing loans since 2020¹⁸ and recently expanded this to include renewable energy loans and corporate green bond exposures.

The EU-funded EeMMIP Project, part of the overarching EEMI, will shortly publish guidance for lending institutions to facilitate the inclusion of energy efficiency and sustainability of EEM in credit risk assessments, and for supervisory authorities on how to integrate energy efficiency in the supervisory framework. In this way, EeMMIP facilitates an alignment of the whole Industry from a policy perspective and adds value in policy discussions in the context of the revision of the prudential regulatory framework to also take into account sustainable investments and sustainability risk.

¹⁸ <https://www.mnb.hu/letoltes/notice-preferential-green-capital-requirement.pdf>

CHAPTER 3

IMPLICATIONS OF THE SUPERVISORY LANDSCAPE FOR NEEM

As suggested above in relation to the regulatory landscape, the evolving supervisory landscape will also present very specific impacts and opportunities in relation to the development of energy efficient mortgages and, as a result, the key outputs of the EEMI which NEEM will, as outlined earlier, take forward as a response to key aspects of the EU policy agenda. As already said, there are a number of touchpoints between the supervisory landscape, energy efficient mortgages generally speaking and the outputs of the EEMI and therefore NEEM specifically and careful identification and assessment of these, both individually and collectively, is necessary in order to ensure appropriate alignment and therefore maximum potential for market development.

3.1 ECB GUIDE ON CLIMATE-RELATED AND ENVIRONMENTAL RISKS

In November 2020, the ECB published its final and amended guide on climate-related and environmental risks¹⁹ following a public consultation. This guide outlines the ECB's understanding of the safe and prudent management of climate-related and environmental risks under the current prudential framework. It describes how the ECB expects institutions to consider climate-related and environmental risks – as drivers of established categories of prudential risks – when formulating and implementing their business strategy and governance and risk management frameworks. It further explains how the ECB expects institutions to become more transparent by enhancing their climate-related and environmental disclosures. The ECB sets out 11 key supervisory expectations:

¹⁹ <https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.202011finalguideonclimate-relatedandenvironmental-risks~58213f6564.en.pdf>

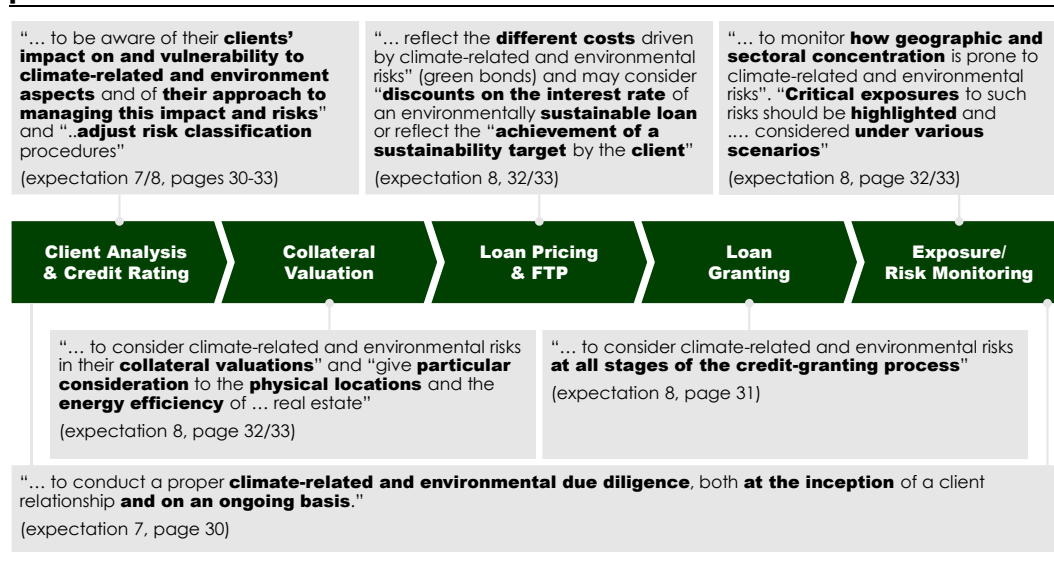
Box 6 Overview of ECB supervisory expectations

1. Institutions are expected to understand the impact of climate-related and environmental risks on the business environment in which they operate, in the short, medium and long term, in order to be able to make informed strategic and business decisions.
2. When determining and implementing their business strategy, institutions are expected to integrate climate-related and environmental risks that impact their business environment in the short, medium or long term.
3. The management body is expected to consider climate-related and environmental risks when developing the institution's overall business strategy, business objectives and risk management framework, and to exercise effective oversight of climate-related and environmental risks.
4. Institutions are expected to explicitly include climate-related and environmental risks in their risk appetite framework.
5. Institutions are expected to assign responsibility for the management of climate-related and environmental risks within the organisational structure in accordance with the three lines of defence model.
6. For the purposes of internal reporting, institutions are expected to report aggregated risk data that reflect their exposures to climate-related and environmental risks with a view to enabling the management body and relevant sub-committees to make informed decisions.
7. Institutions are expected to incorporate climate-related and environmental risks as drivers of existing risk categories into their existing risk management framework, with a view to managing, monitoring and mitigating these over a sufficiently long-term horizon, and to review their arrangements on a regular basis. Institutions are expected to identify and quantify these risks within their overall process of ensuring capital adequacy.
8. In their credit risk management, institutions are expected to consider climate-related and environmental risks at all relevant stages of the credit-granting process and to monitor the risks in their portfolios.
9. Institutions are expected to consider how climate-related and environmental events could have an adverse impact on business continuity and the extent to which the nature of their activities could increase reputational and/or liability risks.
10. Institutions are expected to monitor, on an ongoing basis, the effect of climate-related and environmental factors on their current market risk positions and future investments, and to develop stress tests that incorporate climate-related and environmental risks. [Guide on climate-related and environmental risks.](#)
11. Institutions with material climate-related and environmental risks are expected to evaluate the appropriateness of their stress testing with a view to incorporating them into their baseline and adverse scenarios.

Source: ECB (2020), "Guide on climate-related and environmental risks" p. 4-5, [link](#)

Of particular relevance for energy efficient mortgages are expectations 7 and 8 which require the integration of climate-related and environmental risks into credit risk management and processes, aligned with the EBA Guidelines on Loan Origination & Monitoring (LOaM). In an overview document on the Guide²⁰, KPMG breaks down the relevant aspects of credit risk management and processes and links the two expectations to each of these:

Figure 1
Challenging expectations: Thorough integration into credit risk management and processes



Source: KPMG (2020), "ECB draft guide on climate-related and environmental risks", [link](#)

As the diagram above shows and as KPMG highlights, "integrating environmental risks into credit risk management in line with LOaM requires changes along the entire credit process and many tools, methodologies and the underlying data"²¹. In many respects, the EEMI responds directly to the ECB's supervisory expectations in this area through its long-term work to build an energy efficient mortgage product framework, data infrastructure and broader value chain which put climate considerations, and specifically energy efficiency, at their heart. It is worth highlighting the following specific points according to Supervisory Expectation 8 taken from the ECB Guide:

- **Expectation 8.1 - Climate-related and environmental risks are expected to be included in all relevant stages of the credit-granting process and credit processing:** Specifically, institutions are expected to form an opinion on how climate-related and environmental risks affect the borrower's default risk. The climate-related and environmental factors material to the default risk of the loan exposure are expected to be identified and assessed. As part of this assessment, institutions may take into consideration the quality of the clients' own management of climate-related and

²⁰ <https://assets.kpmg/content/dam/kpmg/de/pdf/Themen/2020/06/climate-related-and-environmental-risk.pdf>

²¹ <https://assets.kpmg/content/dam/kpmg/de/pdf/Themen/2020/06/climate-related-and-environmental-risk.pdf>

environmental risks. Institutions are expected to give appropriate consideration to changes in the risk profile of sectors and geographies driven by climate-related and environmental risks. As indicated above, based on a comprehensive data collection infrastructure, the EEMI has conducted in-depth econometric analysis into the relationship between building energy performance and credit risk²², and established a significant negative correlation between the buildings' energy efficiency and the probability of mortgage default specifically. Additionally, the results indicate that the degree of energy efficiency also matters, i.e., more energy efficient buildings are associated with relatively lower risk of default. As indicated earlier, the EU Commission and UNEP FI's co-convened EEFIG has a 65-expert working group which will shortly publish further new evidence, based on deep statistical modelling from over a million mortgages in Germany, Finland, and UK. This new modelling work confirms the significant negative correlation found under the EEMI. Taken together, these findings provide lending institutions with important insights into the potential impact of, in this case, the energy performance of the underlying collateral on credit risk and both EEMI and EEFIG member banks have already started to test the inclusion of energy efficiency into their own prudential risk models, responding directly to the ECB's supervisory expectations.

- ***Expectation 8.3 - Institutions are expected to consider climate-related and environmental risks in their collateral valuations: Climate-related and environmental risks may affect the value of collateral. Institutions are expected to give particular consideration to the physical locations and the energy efficiency of commercial and residential real estate in this regard. Institutions are expected to incorporate these considerations into both the process for establishing the value of collateral and into regular reviews.*** Alongside the impact, which has since been confirmed, of building energy performance on a borrower's probability of default, in the early stages of the EEMI, discussions also centred upon building energy performance as a strong potential value driver and risk factor. Existing academic research and preliminary analyses in 2016 conducted under the EEMI confirmed this assumption²³. It therefore became apparent that the integration of building energy performance in valuations and credit risk assessment could transform current lending practices. The RICS Red Book²⁴ already requires valuers to collect sustainability related information, which could potentially impact on value, regardless whether there is or not direct market evidence. By doing so valuers will be contributing to the systematic improvement in data that will

²² <https://energyefficientmortgages.eu/wp-content/uploads/2021/07/Italian-Correlation-Analysis.pdf> & <https://energyefficientmortgages.eu/wp-content/uploads/2021/07/Extended-Dutch-Correlation-Analysis.pdf>

²³ Brounen, D. and Nils Kok (2011): "On the economics of energy labels in the housing market", *Journal of Environmental Economics and Management* 62, p. 166-179;

- Hyland, M., R.C. Lyons., S. Lyons (2013): "The value of domestic building energy efficiency – evidence from Ireland", *Energy Economics* 40, p. 943-952;

- SBi (2013): "Sammenhæng mellem energimærkning og salgpris" Statens Byggeforskningsinstitut in corporation with University of Aalborg, 2013(06);

- Fuerst, F., P. McAllister, A. Nanda, P. Wyatt (2015): "Does energy efficiency matter to home-buyers? An investigation of EPC ratings and transaction prices in England", *Energy Economics* 48, p. 145-156;

- Copenhagen Economics (2015) (Available at: [here](#));

- Kok, N. and Kahn, M. E. (2012): "The Value of Green Labels in the California Housing Market", UCLA Institute of the Environment and Sustainability. (Available at: [here](#)).

²⁴ The 'Red Book' published by RICS contains mandatory rules, best practice guidance and related commentary for all members undertaking asset valuations

help to ensure that, as markets become sensitised to sustainability issues, appropriate analysis can be undertaken to support future estimates of value. Importantly, valuers are required to flag up the absence or the failure to provide this information as a potential risk factor. It was against this background that the EEMI developed a Valuation Checklist and accompanying Guidance²⁵, building on previous EU-funded projects, Renovalue²⁶ and ReValue²⁷, to support valuers in the consideration of and will provide a practical application of the valuation framework and guidance developed in this Project.

- Expectation 8.5 - Institutions' loan pricing frameworks are expected to reflect their credit risk appetite and business strategy with regard to climate-related and environmental factors:** Pursuant to Article 76(3) of CRD IV, an institution's risk committee shall review whether the prices of assets offered to clients take the business model and risk strategy fully into account. The pricing of loans is an important steering mechanism for institutions, determining the level and origin of their future income. For instance, as part of their business strategy and risk appetite, institutions may decide to reduce or limit exposures to sectors harmful for the environment or the climate or to steer away from loans collateralised by energy-inefficient real estate. The pricing framework is then expected to support the chosen risk perspective and strategy, for example by differentiating the loan prices for exposures according to their energy efficiency or by including a sector/client-specific charge. Institutions may also consider, in line with their business strategy and risk appetite, incentivising their clients to properly consider climate-related and environmental risks so as to improve the creditworthiness and resilience towards such risks. This could, for instance, entail offering discounts on the interest rate of an environmentally sustainable loan or linking the interest rate of the loan to the achievement of a sustainability target by the client.
- Expectation 8.6 - Institutions' loan pricing is expected to reflect the different costs driven by climate-related and environmental risks.** As set out in the EBA Guidelines on loan origination and monitoring, institutions should implement a pricing framework linked to the characteristics of the loan, considering all relevant costs. The impact of climate-related and environmental risks may play out through various cost drivers, such as the cost of capital, funding or credit risk. Environmentally sustainable assets may, for example, be funded by dedicated instruments, such as green (covered) bonds, and thus incur different funding costs. Areas exposed to increasing physical climate risks, such as floods or droughts, may see an increase in credit loss. Institutions are expected to consider these developments and reflect them in their loan pricing, for instance through a higher credit cost charge or via differentiation of funding costs for assets that are particularly affected by physical and transition risk.

²⁵ <https://energyefficientmortgages.eu/wp-content/uploads/2021/07/EEM-Property-Valuation-Guidelines.pdf>

²⁶ Renovalue focuses on developing training toolkit for property valuation professionals on how to factor energy efficiency and renewable energy issues into valuation practices. For more information, please see here: <http://renovalue.eu/>

²⁷ ReValue aims to develop standards that recognise Energy Efficiency Value in social and private residential real estate. For more information, please see here: <http://revalue-project.eu/>

The potential for the significant negative correlation between building energy performance and credit risk to influence business strategy and loan conditions for borrowers has long been a cornerstone of the EEMI. Indeed and as indicated earlier, one of the underlying premises of the EEMI is that a negative correlation between building energy performance and credit risk could be reflected in a realignment of capital requirements for energy efficient mortgages and in turn drive a virtuous circle, according to which all stakeholders, first and foremost borrowers, derive a benefit. This benefit for consumers could indeed give rise to preferential loan conditions, for example, a lower interest rate. It was this ‘business case’ which gave rise to significant efforts under the EEMI to substantiate this relationship through the in-depth econometric analysis described earlier.

The ECB has started its follow up with banks in two concrete steps. In early 2021 it invited banks to conduct a self-assessment in light of the supervisory expectations outlined in the Guide and to draw up action plans on that basis. According to an analysis by the ECB of the result of this self-assessment, almost all banks have developed implementation plans, and many have started to progressively improve their practices. However, the ECB considers the overall initial indications to be disappointing since none of the ECB supervised banks meet all of the supervisory expectations. In 2022 it will conduct a full supervisory review of banks’ practices and take concrete follow-up measures where needed.

3.2 ECB MONETARY POLICY STRATEGY

In July 2021, the Governing Council of the ECB published a comprehensive action plan, with an ambitious roadmap, to further incorporate climate change considerations into its policy framework in line with EU policy in the field. This comes against a background where the ECB recognises that *“climate change and the transition towards a more sustainable economy affect the outlook for price stability through their impact on macroeconomic indicators such as inflation, output, employment, interest rates, investment and productivity; financial stability; and the transmission of monetary policy”*²⁸.

The planned activities will focus on 6 key areas. The more relevant – either directly or indirectly – for energy efficient mortgages and the broader energy efficient mortgage value chain, including green/energy efficient bonds and covered bonds, are highlighted below and more details are provided:

1. Macroeconomic modelling and assessment of implications for monetary policy transmission
2. Statistical data for climate change risk analyses.
3. **Disclosures as a requirement for eligibility as collateral and asset purchases:** The ECB plans to introduce climate-related disclosure

²⁸ https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708_1~f104919225.en.html

requirements for banks using private sector assets as collateral in ECB monetary policy operations and for private sector asset purchases. These requirements will apparently take account of EU policies and initiatives in the field of environmental sustainability disclosure and reporting, therefore the EU Taxonomy, CSRD and SFRD as indicated above. The ECB will announce a detailed plan in 2022 and the requirements are likely to take effect in 2024.

4. **Enhancement of risk assessment capabilities:** Alongside conducting climate stress tests of the Eurosystem balance sheet in 2022 to assess the Eurosystem's risk exposure to climate change, the ECB will also assess whether the credit rating agencies accepted by the Eurosystem Credit Assessment Framework, i.e. DBRD Morning Star, FitchRatings, Moody's and Standard and Poor's, have disclosed the necessary information to understand how they incorporate climate change risks into their credit ratings. In addition, the ECB will consider developing minimum standards for the incorporation of climate change risks into its internal ratings.
5. **Collateral framework:** The ECB will consider climate risks when evaluating assets that banks want to use as collateral to get loans from the ECB. This means that assets with higher climate risks could be treated differently than assets with lower climate risks. Since January 2021, bonds with coupon structures linked to certain sustainability performance targets are eligible as collateral for Eurosystem credit operations and also for Eurosystem outright purchases for monetary policy purposes, provided they comply with all other eligibility criteria. The coupons must be linked to a performance target referring to one or more of the environmental objectives set out in the EU Taxonomy Regulation and/or to one or more of the United Nations Sustainable Development Goals relating to climate change or environmental degradation.
6. **Corporate sector asset purchases:** The ECB will further include climate-related criteria when guiding its corporate asset purchases. This could include looking at how issuers are complying with the Paris Agreement or how they are committed to similar goals. Additionally, as of 2023 the ECB will start disclosing climate-related information on its corporate asset purchases.

These actions around disclosure, eligibility and ratings will unquestionably impact the bond market in the years to come, putting pressure on non-ESG debt and particularly carbon-intensive debt and almost certainly obliging issuers to increase their issuance of green bonds to meet the various requirements and continue to be eligible for the different frameworks and programmes. As ING points out in analysis published in July 2021²⁹, the differentiation in the ECB's collateral framework, which the plans above herald, "*may encompass the first steps towards a more favourable haircut treatment and a stronger asset purchase focus for assets that, based on the sustainability key performance indicators (KPIs), are considered to have lower climate risks*". Taken together, these impacts will likely have spill-over effects for underlying assets, for example energy efficient/green mortgages, by putting pressure on banks to green their current and future loan portfolios, for example.

²⁹ <https://think.ing.com/articles/ecb-smoking-out-fossil-fuels/#a10>

There are however certain caveats to the expected impacts of these actions, particularly those of relevance for energy efficient mortgages and the value chain, and here again, the ING analysts provide some interesting insights:

- Firstly, the greening of the asset purchase programmes is primarily focused on corporate bonds. In its analysis, ING notes that under normal market circumstances, banks mainly use marketable assets, such as sovereign and covered bonds, as collateral. Therefore, the ING analysts suggest that the ECB would have to “*expand its horizon beyond corporate exposures alone and at least consider covered and preferred senior bank bond exposures too*”. If indeed the ECB were to expand its greening plans beyond corporate bonds, this would naturally have a significant impact on energy efficient mortgages and the value chain, given the intrinsic link between mortgages and covered bonds in particular.
- Secondly, the ING analysts point to the fact that the most impact for the greening of banks’ assets will come from banks’ non-marketable assets such as loans to households (and corporates), rather than their marketable assets, such as securities, which represent a much smaller proportion of their balance sheets. It will remain to be seen over the coming months and years whether the ECB makes changes to the collateral framework to promote the further use of ‘green’ non-marketable assets as collateral. Indeed, the ING analysts note that the roadmap currently makes no mention of the potential greening of Targeted Longer-Term Refinancing Operations (TLTRO), although in September 2021 ECB President Christine Lagarde confirmed that ‘green’ TLTROs would be considered by the ECB in the context of the strategy review.

Interesting, and linked to the last point, are proposals recently made by Positive Money Europe³⁰ to accelerate building renovations in the EU by using the TLTROs to incentivise banks to offer cheap loans for building renovations. In its Report, Positive Money Europe proposes to launch a “Renovation-TLTROs” pilot programme under which the TLTRO rules would be adapted to offer a negative discount rate below the current -1.0% to banks on their portfolio of loans that are dedicated to energy efficiency renovation projects.

All things considered, 2021 is likely to mark a turning point for banks in relation to supervisory expectations regarding climate-related and environmental risks and how banks are managing these. Indeed, European supervisors are taking an increasingly active interest in this area, and supervisory awareness and attention around the risks is evolving and growing rapidly. The actions outlined above point to the significant shift in the ECB’s focus in particular over a relatively short period of time.

As a result, lending institutions are under pressure to address new supervisory expectations by adjusting policies, procedures, methodologies and infrastructures at all relevant levels. As we have shown here, significant progress has already been made in the area of energy efficiency mortgages, but it is clear that there is

³⁰ <https://www.positivemoney.eu/2021/02/report-building-renovation-wave-tltros/>

still a long way to go. However, there will also be opportunities for lending institutions to take advantage of change to unlock significant long-term opportunities in the ESG area in terms of product development and funding, with all of the related positive spill-overs.

CHAPTER 4

CONTRIBUTION OF NEEM TO COVID-19 RECOVERY

A ‘green’ recovery from the COVID-19 crisis has become a direct and urgent priority for the European Commission and the EU Green Deal is increasingly seen as central to this. Indeed, a green recovery is seen as not only fundamental to enhancing Europe's pandemic preparedness, but also to ensuring a just and sustainable transition, effectively guarding against present and future health, environmental and economic crises, putting an end to energy poverty and boosting jobs and growth.

The Renovation Wave is in turn key for the EU to deliver on the EU Green Deal and is seen as a way of attaining many of these key desired outcomes as European economies recover from the unprecedented last 18 months. As will be clear by now to all, ‘sustainable finance’ is at the heart of efforts to channel the necessary investment to deliver on the Renovation Wave and the EU’s broader climate commitments and therefore by extension on the EU’s recovery plans, based on all of the different legislative initiatives outlined above. All eyes are therefore on the financial sector to deliver the necessary financing to support the transition and therefore the recovery in this way, and pressure will unquestionably mount as the months and years go by, as the regulatory and supervisory landscapes described earlier indicate.

Significantly, and as already outlined in great detail above, it is exactly in relation to the desired outcomes of the ‘green’ recovery that the objectives of the EU Green Deal and the outputs of the EEMI and NEEM intersect.

Indeed, the EEMI and NEEM will help to secure investment, growth and financial stability, cornerstones of economic recovery, whilst strengthening and accelerating the transition to a more sustainable economy with greater social inclusion and market transparency, to the benefit of consumers, lending institutions and the wider economy through:

1. a product framework which delivers the necessary preconditions for lending institutions to finance improvement of the EU’s building stock, and at the same time ensure that access to energy efficient mortgages is possible for all demographics, responding to the importance of social inclusion. This was one of the key motivations behind intense exchanges with the European Commission on the EU Taxonomy. Indeed, and as indicated above, concerns were raised about the EPC A requirement for existing buildings built before 31 December 2020 in the mitigation technical screening criteria which, in addition to significantly reducing (by up to 95%) eligible assets for energy efficient mortgages and bonds, would have risked creating ‘stranded assets’ in the housing market for consumers, lenders and investors. It would have disincentivised banks and borrowers to favour better homes when purchasing and financing. Post COVID-19, the proposal would also have been socially exclusive

for less affluent citizens in less efficient buildings. The broader approach favours a more inclusive approach to energy efficient mortgage finance and will help to make sure no one is left behind.

2. standardised classification and well-aligned benchmarks for which mortgage assets can be considered as significantly contributing to the EU Taxonomy's climate goals through the **EEM definition**, making the invisible attributes of banks' loans visible and kick-starting the investment and mortgage market for energy efficiency finance;
3. the Energy Efficient Mortgage Label, aligned with the EU Taxonomy, which will provide a vehicle to disclose these attributes, promoting transparency and confidence in energy efficient mortgages, and stimulating the value chain from origination to investment;
4. by demonstrating a correlation between energy efficiency in buildings and mortgage performance, promoting the inclusion of risks associated with climate and other environmental factors in institutions' risk management policies, potentially linked to preferential capital requirements, strengthening financial stability and;
5. their efforts to engage all relevant actors in the value chain and build a real 'ecosystem' in energy efficient mortgages, the EEMI and NEEM will boost the renovation and construction market, which has been hard hit by the COVID-19 crisis, stimulating economic activity, boosting growth and creating jobs.

A particular innovation of NEEM, which builds on previous consumer research³¹ conducted under the EEMI, is efforts to deploy behavioural optimised guidance to initiate renovations. The intention is to enable financial institutions to present tools/products for households and SMEs which overcome behavioural barriers to investment in building energy efficiency, particularly renovations, and thereby significantly reduce the transaction costs of renovating. By applying behavioural insights, NEEM will develop the appropriate solutions that address the relevant target groups segmented into countries in the Nordic region and types of owners. Cooperation between different stakeholders will allow financial institutions to develop this tool. The end-goal is to make financial institutions in the Nordics a one-stop shop for energy renovations. It is anticipated that this guidance will serve as a blueprint for other EEMI 'national hubs'.

³¹ <https://energyefficientmortgages.eu/wp-content/uploads/2021/07/Consumer-Research-DE-IT-SE-UK-2018.pdf>

CHAPTER 5

CONCLUSION

The analysis above points clearly to the vast, complex and interconnected regulatory and supervisory landscape related to sustainable finance, which will have far reaching consequences for banks' entire value chains, impacting on their business models and strategies, governance structures and disclosure, and will require significant implementation efforts for the coming months and years.

This landscape presents very specific impacts and opportunities in relation to the development of energy efficient mortgages and, as a result, the key outputs of the Energy Efficient Mortgages Initiative (EEMI), including the EEM Label, efforts to secure a realignment of capital requirements for energy efficient mortgage portfolios and efforts to reinforce the value chain between energy efficient mortgages and energy efficient/green (covered) bonds. NEEM will take these outputs forward, whilst pursuing other equally important objectives for the Nordics as described above, as a response to key aspects of the EU policy agenda.

As we have seen, no part of a banks' activities will remain untouched by these policy and legislative initiatives and actions, whether they be retail, funding or supervisory-related. The most significant impact on banks' activities of this landscape can perhaps be best summarised by referring to the material impact of Sustainable Finance policy and the actions intended to support the EU Green Deal on the three pillars of the supervisory framework:

- Pillar 1 of the framework, minimum capital requirements, is addressed by the perspective of lower risk weights for energy efficient mortgages or other eligible green assets. This is the EBA mandate for 2023. For banks, this perspective should trigger a robust identification with the Green Deal agenda in order to realise capital relief.
- Pillar 2 of the framework, supervisory review, is addressed by the supervisory expectations of the ECB and central banks on how to manage climate risk. The ECB Guide is the relevant tool here. Depending on how climate risk is managed by banks and the subsequent supervisory dialogue, this could translate into SREP measures, i.e. capital add-ons under pillar 2, pointing to a material risk of additional equity cost.
- And finally, there is the multitude of climate and ESG risk disclosure requirements which will materialise through measures under pillar 3 of the framework (market discipline). At the heart of this is the Green Asset Ratio, which perhaps more than any other disclosure requirement will be decisive for banks, as nothing determines a banks' strategy more than the composition of its assets. These disclosure requirements mean that banks must understand the extent to which they will be confronted with pillar 3 requirements as regards all current and future EU Green Deal measures.

These considerations demonstrate clearly how important it is that banks are already taking the necessary measures to understand the implications of the regulatory and supervisory landscape related to sustainable finance and the EU Green Deal for their business activities, identify which activities are in scope, determine the extent to which they will seek to align their activities and how this can be achieved, identify data requirements, and move to close gaps and towards operationalisation. In this context, the EEMI more broadly and NEEM specifically in the case of the Nordic countries offer a fast track to compliance from the perspective of energy efficient mortgages.

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APPENDIX A

EXCERPTS FROM CLIMATE MITIGATION AND ADAPTATION TAXONOMY TECHNICAL SCREENING CRITERIA FOR CONSTRUCTION & REAL ESTATE ACTIVITIES

Excerpt from Climate Mitigation Taxonomy Technical Screening Criteria for Construction & Real Estate Activities

EU Taxonomy Technical Screening Criteria for Construction of New Buildings, Renovation of Existing Buildings and Acquisition & Ownership of Buildings in relation to Climate Change Mitigation

(1) Construction of new buildings

1. The Primary Energy Demand (PED), defining the energy performance of the building resulting from the construction, is at least 10% lower than the threshold set for the nearly zero-energy building (NZEB) requirements in national measures. The energy performance is certified using an as built Energy Performance Certificate (EPC).
2. For buildings larger than 5000 m², upon completion, the building resulting from the construction undergoes testing for air-tightness and thermal integrity, and any deviation in the levels of performance set at the design stage or defects in the building envelope are disclosed to investors and clients. As an alternative; where robust and traceable quality control processes are in place during the construction process this is acceptable as an alternative to thermal integrity testing.
3. For buildings larger than 5000 m², the life-cycle Global Warming Potential (GWP) of the building resulting from the construction has been calculated for each stage in the life cycle and is disclosed to investors and clients on demand.

(2) Renovation of existing buildings

The building renovation complies with the applicable requirements for major renovations. Alternatively, it leads to a reduction of primary energy demand (PED) of at least 30 %.

(3) Acquisition and ownership of buildings

1. For buildings built before 31 December 2020, the building has at least an Energy Performance Certificate (EPC) class A. As an alternative, the building is within the top 15% of the national or regional building stock expressed as operational Primary Energy Demand (PED) and demonstrated by adequate evidence, which at least compares the performance of the relevant asset to the performance of the national or regional stock built before 31 December 2020 and at least distinguishes between residential and non-residential buildings.
2. For buildings built after 31 December 2020, the building meets the criteria specified in Section 7.1 of this Annex that are relevant at the time of the acquisition.

3. Where the building is a large non-residential building (with an effective rated output for heating systems, systems for combined space heating and ventilation, air-conditioning systems or systems for combined air-conditioning and ventilation of over 290 kW) it is efficiently operated through energy performance monitoring and assessment.

Footnote 278: Where the EPC as set out in the applicable national law does not indicate a specific class and it is not possible to assess if the building is part of the top 2 classes in terms of energy performance, compliance with this requirement can be demonstrated through a study not older than 12 months attesting that the building is within the top 15% of the national or regional building stock.

The 'Do no significant harm' ('DNSH') criteria are the same for all three sets of criteria:

- Climate change adaptation (appendix E): the physical climate risks that are material to the activity by performing a robust climate risk and vulnerability assessment with the following steps: screening of the activity to identify risks; if assessed to be at risk, a climate risk and vulnerability assessment to assess the materiality of the physical risk; assessment of adaptation solutions.
- The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis. The adaptation solutions implemented do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities.
- Sustainable use and protection of water and marine resources
- Transition to a circular economy: at least 70% by weight of the non-hazardous construction and demolition waste generated on the construction site is prepared for re-use, recycling and other material recovery.
- Pollution prevention and control
- Protection and restoration of biodiversity and ecosystems

Excerpt from Climate Adaptation Taxonomy Technical Screening Criteria for Construction & Real Estate Activities

7.1 Construction of new buildings

Financial, technical and physical means of developing of residential and non-residential buildings

Substantial contribution to climate change adaptation- physical and non-physical solutions are applicable:

- Climate risk and vulnerability assessment- if activity may affect the performance of the economic activity, if it is at risk from physical climate risk, which is followed by the assessment of adaptation solution
- The climate risk and vulnerability assessment is proportionate to the scale of the activity:

- lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
- for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
- The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports
- The adaptation solutions implemented:
 - do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
 - favour nature-based solutions or rely on blue or green infrastructure to the extent possible;
 - are consistent with local, sectoral, regional or national adaptation plans and strategies;
 - are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
 - where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for the activity

Do no significant harm ('DNSH')

- Climate Change Mitigation:
 - not dedicated to extraction, storage, transport or manufacture of fossil fuels
 - PED559 does not exceed the threshold set for the nearly zero-energy building requirements in national regulation
 - energy performance is certified by EPC
- Sustainable use and protection of water and marine resources: - water appliances are attested by product datasheets, a building certification or an existing product label in the Union, in accordance with the technical specifications of Appendix D to Annex I
 - basin and kitchen taps- max. 6l/min
 - showers- max. 8l/min
 - WCs- full flush max. 6l and average flush max. 3,5 l
 - urinals max. 2l/h; full flush max. 1l
- Transition to a circular economy:
 - min.70% of weight of the non-hazardous construction and demolition waste (excluding naturally occurring material) generated on the construction site is prepared for re-use, recycling and other material recovery
 - limiting waste generation in processes related to construction and demolition

- building designs and construction techniques, with reference to ISO 20887561 or other standards for assessing the disassemblability or adaptability of buildings,
- designed to be more resource efficient, adaptable, flexible and dismantlable to enable reuse and recycling.
- **Pollution & Prevention Control:**
 - building components and materials used in the construction comply with Appendix C to Annex II.
 - components and materials that may come into contact with occupiers- max.0,06 mg of formaldehyde per m³ and max.0,001 mg of categories 1A and 1B carcinogenic volatile organic compounds per m³
 - if new construction is located on a potentially contaminated site or was subject to an investigation for potential contaminants=standard ISO 18400566.
 - reduce noise, dust and pollutant emissions during construction or maintenance work.
- **Protection and restoration of biodiversity and ecosystems:**
 - complies with Appendix D to Annex II
 - the new construction cannot be built on: arable land and crop land with a moderate to high level of soil fertility, greenfield land of recognised high biodiversity value, land that serves as habitat of endangered species, and matching the definition of forest

7.2 Renovation of existing buildings

Construction and civil engineering works

Economic activity has implemented physical and non-physical solutions that substantially reduce the most important physical climate risks:

- Climate risk and vulnerability assessment- if activity may affect the performance of the economic activity, if it is at risk from physical climate risk, which is followed by the assessment of adaptation solution
- The climate risk and vulnerability assessment is proportionate to the scale of the activity:
 - lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
 - for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
- The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports, scientific peer-reviewed and open source or paying models
- The adaptation solutions implemented:

- do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
- favour nature-based solutions or rely on blue or green infrastructure to the extent possible;
- are consistent with local, sectoral, regional or national adaptation plans and strategies;
- are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
- where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for the activity

Do no significant harm ('DNSH')

- Climate Change Mitigation: not dedicated to extraction, storage, transport or manufacture of fossil fuels.
- Sustainable use and protection of water and marine resources: Where installed as part of the renovation works, except for renovation works in residential building units, , in accordance with the technical specifications of Appendix D to Annex I
 - basin and kitchen taps- max. 6l/min
 - showers- max. 8l/min
 - WCs- full flush max. 6l and average flush max. 3,5 l
 - urinals max. 2l/h; full flush max. 1l
- Transition to a circular economy:
 - min 70 % of weight of the non-hazardous construction and demolition waste (excluding naturally occurring material) generated on the construction site is prepared for re-use, recycling and other material recovery,
 - Operators limit waste generation in processes using selective demolition to enable removal and safe handling of hazardous substances and facilitate re-use and high-quality recycling by selective removal of materials, using available sorting
 - building designs and construction techniques support circularity to be more resource efficient, adaptable, flexible and dismantlable to enable reuse and recycling.
- Pollution & Prevention Control:
 - building components and materials used in the construction comply with Appendix C to Annex II.
 - components and materials that may come into contact with occupiers- max.0,06 mg of formaldehyde per m³ and max.0,001 mg of categories 1A and 1B carcinogenic volatile organic compounds per m³
 - reduce noise, dust and pollutant emissions during construction or maintenance works

7.7 Acquisition and ownership of buildings

Buying real estate and exercising ownership

- Climate risk and vulnerability assessment- if activity may affect the performance of the economic activity, if it is at risk from physical climate risk, which is followed by the assessment of adaptation solution
- The climate risk and vulnerability assessment is proportionate to the scale of the activity:
 - o lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;
 - o for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments.
 - o The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports, scientific peer-reviewed and open source or paying models
- The adaptation solutions implemented:
 - o do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;
 - o favour nature-based solutions or rely on blue or green infrastructure to the extent possible;
 - o are consistent with local, sectoral, regional or national adaptation plans and strategies;
 - o are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;
 - o where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for the activity

Do no significant harm ('DNSH')

Climate Change Mitigation:

- not dedicated to extraction, storage, transport or manufacture of fossil fuels.
- if built before 31.12.2020, the building has at least Energy Performance Certificate class C.
- if built after 31.12.2020, the PED603 define the energy performance