Financing energy efficiency:

the role of green mortgages in modern real estate.

ABBL/KPMG Discussion Paper

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Contents

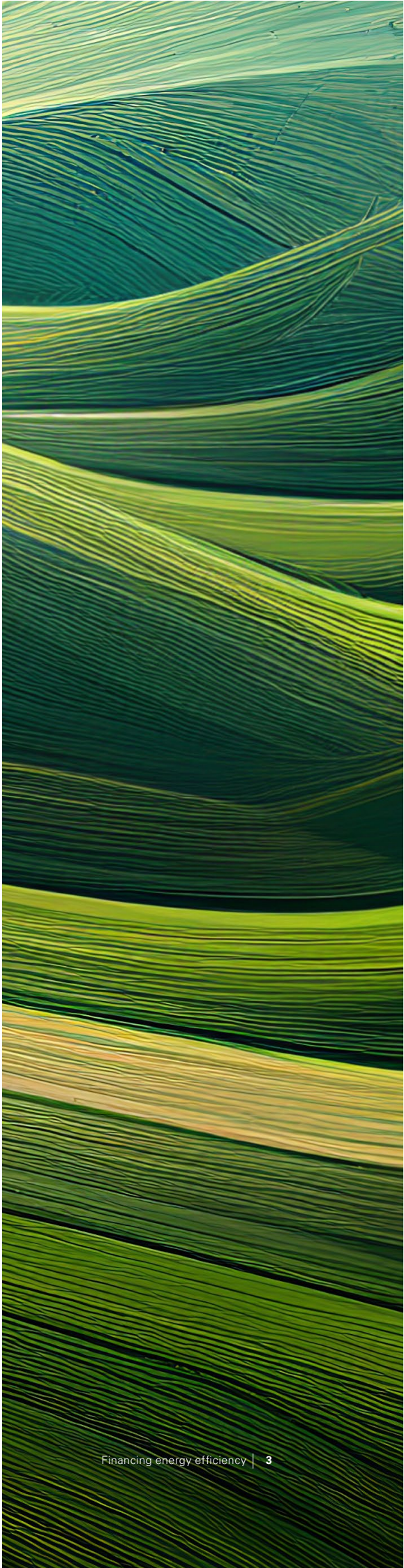
Foreword

As we stand at the crossroads of environmental sustainability and financial innovation, the mortgage industry's role in Luxembourg is more critical than ever. The transition to green mortgages represents not just a shift in financial products, but a fundamental change in how we finance our homes and buildings. This evolution has significant implications for the European banking sector.

Banks must navigate evolving regulations and market demands while maintaining stability and fostering innovation. The move toward green finance offers challenges and opportunities alike, requiring a concerted effort from all stakeholders to ensure a sustainable and resilient financial future.

This paper delves into the evolving landscape of green finance in Luxembourg, examining the regulatory frameworks, market trends, and the pivotal role of banks in fostering a greener built environment. Together, we can drive the transition to a low-carbon economy and build a legacy of sustainability.

ABBL and KPMG Luxembourg



Executive summary

As a critical activity of many banks in Luxembourg, the mortgage business is expected to transform in the near future, with green loans becoming a key financing tool to support the energy transition.

With the building sector being one of the biggest contributors to greenhouse gas emissions, new EU initiatives and legislative changes aim to lower the carbon footprint of real estate. In particular, the Energy Performance of Buildings Directive, which has been recently revised, introduces ambitious renovation targets. Yet broader factors, such as mounting housing prices and renovation costs, cast doubt on the feasibility of these objectives.

This joint ABBL/KPMG Discussion Paper shines a light on the way green mortgage loans' are integrated in Luxembourg banks' portfolios to support the shift to a more sustainable building stock, and uncovers the unique challenges of these products and how they can be tackled to fulfil the new regulatory expectations.

The lack of a common definition characterising what constitutes a green loan is the first such obstacle our study highlights. Another roadblock to scaling green lending lies in the inconsistency of Energy Performance Certificate (EPC) ratings across EU countries, creating further concerns for banks with mortgage exposures in the Greater Region and beyond. Accurately identifying and evaluating climate-related risks threatening mortgages' collateralised assets remains difficult, too.

To remedy these, a common definition and characteristics for green lending should first be drawn up and supported by regulators. Though not sufficient on their own, national EPC databases could mitigate the scarcity of data on buildings' energy performance metrics. Further guidance, and better and more granular data to assess climate-related are also needed.

This discussion paper serves as a comprehensive guide to understanding the evolving landscape of green mortgages in Europe and Luxembourg, highlighting the increasing transparency expectations on the real estate assets that banks finance, and how climate-related risks potentially impact the long-term valuation of those assets.

Acknowledgments

We sincerely thank all our survey participants for their invaluable insights. Their contributions are crucial to understanding the current state of affairs and advancing the banking sector's collective knowledge of the green transition.

01

Why we need to decarbonize buildings

1.1 Growing energy demand and buildings' environmental footprint

Buildings contribute significantly to climate change, being responsible for roughly one-third of energy-related carbon dioxide (CO_2) emissions worldwide.[1] As urbanization accelerates and populations grow, the energy demand from residential and commercial buildings continues to climb.

Urgent action is key to decarbonizing the building and construction sector and mitigating its climate change contribution. In 2024, the European Environment Agency (EEA) reported that the sector was one of the largest GHG contributors, accounting for 35% of global emissions and consuming 42% of total energy.[2]

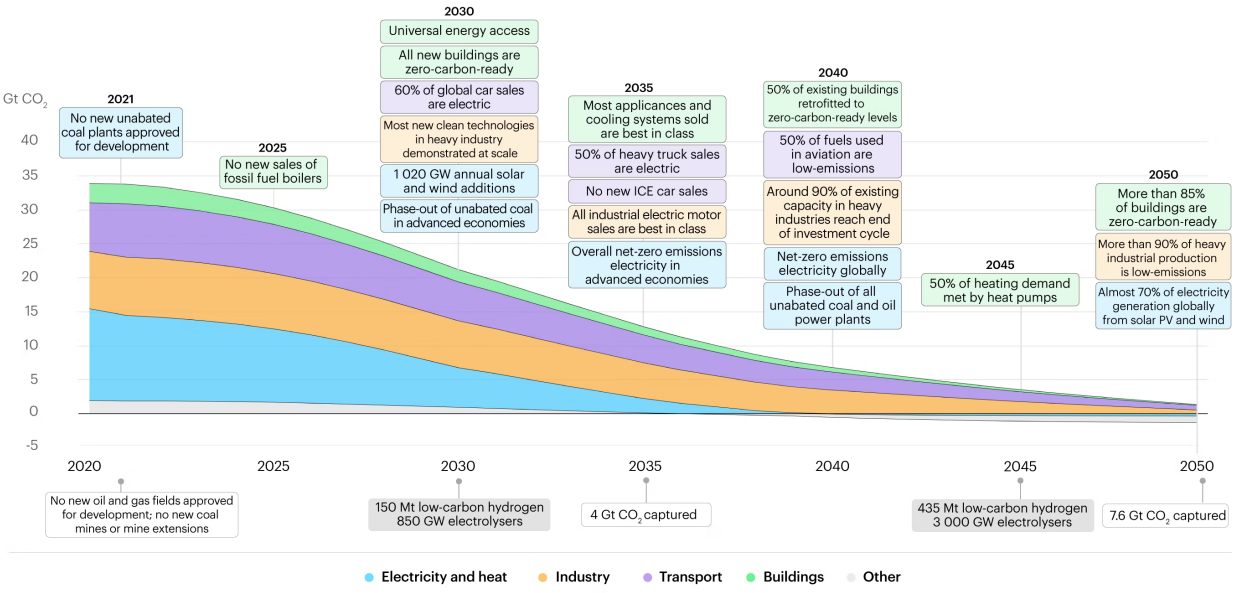


Figure 1: decarbonizing buildings will require comprehensive zero-carbon-ready building codes, deep energy retrofits, phasing out fossil fuel heating systems, and increasing the adoption of heat pumps and renewable energy systems. Source: IEA, Net Zero by 2050, May 2021.

[1] Intergovernmental Panel on Climate Change, *IPCC Sixth Assessment Report: Chapter 9: Buildings*, 2021.

[2] EEA, *Addressing the environmental and climate footprint of buildings*, September 2024.

Energy consumption in buildings is expected to keep rising unless immediate measures are taken. The International Energy Agency (IEA)[3] predicts that without assertive action, the floor area of global buildings will increase by 15% by 2030, driving higher energy demands.

Advances in energy efficiency techniques are unable to offset the building sector's rapid global expansion. This points to a clear need for integrated strategies that combine energy efficiency with lower embodied emissions and increased use of renewable energy.

Low-carbon technologies, such as heat pumps, solar thermal systems and energy-efficient building materials, already exist and can slash energy consumption. The Intergovernmental Panel on Climate Change (IPCC) and IEA both advocate for standardizing zero-emission buildings using energy-efficient designs and low-carbon technologies.

Realizing this potential requires substantial financial investment on which the banking sector plays a crucial role. By providing innovative credit and investment products to empower energy-efficient technologies and sustainable real estate, banks need to manage the risks associated with this new service offering.

[3] IEA, "*Buildings*," accessed 20 March 2025.

1.2 Exploring Luxembourgish banks' attitudes toward green loans: the ABBL and KPMG Survey

The mortgage business is pivotal to many banks in Luxembourg; credit institutions granted €7.2 billion of loans in 2023 for real estate located in Luxembourg.[4] To further understand how banks in Luxembourg support the growth of sustainable housing, ABBL, with KPMG's support, conducted a survey (the "ABBL/KPMG Survey") with a targeted sample of four major banks with mortgage exposures in Luxembourg and the Greater Region.

1.2.1 Objectives

The ABBL/KPMG Survey aims to:

1) Uncover the status of green mortgage loans' integration into banks' portfolios
2) Provide an outlook of the future
3) Outline banks' current challenges regarding these products.

The ABBL/KPMG Survey's responses and analysis are presented throughout this discussion paper.

1.2.2 Methodology

To analyze green mortgage loans' integration into banks' portfolios in Luxembourg, the ABBL/KPMG Survey asked 28 questions to gather both quantitative and qualitative data in 2024.

The questions were split into four topics:

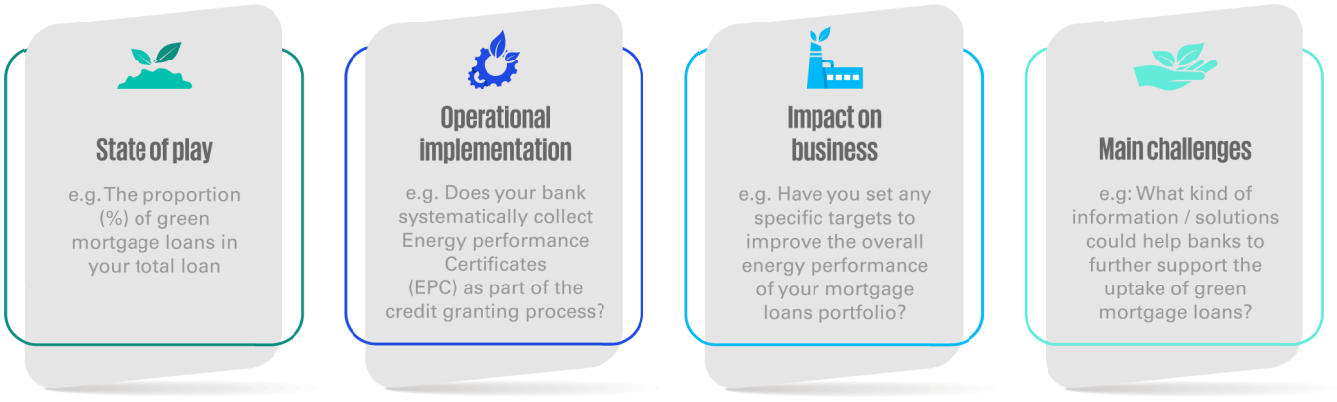


Figure 2: ABBL/KPMG Survey topics.

Following the review of the questionnaire's results, the ABBL, KPMG and the four banks that participated in the ABBL/KPMG Survey engaged in an in-depth discussion on the key trends and challenges they face. This mixed-method approach ensured both broad statistical reliability and nuanced insights, offering a comprehensive understanding of the key issues.

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[4] Banque Centrale du Luxembourg, *Credits granted by credit institutions for real estate located in Luxembourg*, 19 February 2025.

02

Convergence of European regulations and policies under European Green Deal

The growing interest in green mortgages is closely linked to the European Green Deal, whose goal is to make Europe the first climate-neutral continent by 2050. This European Commission initiative comprises a set of policies and laws to support the transition of all relevant sectors of the EU's economy, from energy to agriculture and transportation.

One policy is the "Fit for 55" legislation package. This aims to reduce the EU's net GHG emissions by at least 55% by 2030 compared to 1990 levels by making the EU's buildings more energy efficient, among other efforts.[5]

Additionally, the EU's 2020 "Renovation Wave" strategy[6] aims to double building renovations focused on energy performance improvements in a decade to achieve three objectives:

1) Reduce energy poverty and decrease the number of worst-performing buildings
2) Renovate public buildings
3) Decarbonize heating and cooling systems.

2.1 Recast of Energy Performance of Buildings Directive

In 2002, the EU adopted the first version of the Energy Performance of Buildings Directive (EPBD) as part of a policy package to comply with the Kyoto Protocol, a 1997 international treaty to reduce GHG emissions. The EPBD integrated energy efficiency improvements into EU environmental policies and introduced a framework for certifying the energy performance of buildings.

[5] European Council, "Fit for 55", accessed 25 March 2025.
[6] EUR-Lex, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A Renovation Wave for Europe - greening our buildings, creating jobs, improving lives, 14 October 2020.

Under this framework, newly constructed buildings[7] would require an energy performance certificate (EPC), which provides information about a building's energy efficiency — including a rating and recommendations for cost-effective improvements — to be made available to their owners, buyers or tenants.

The EPBD was revised in 2024 (the "EPBD Recast")[8] to support the European Green Deal and the Renovation Wave strategy and achieve a climate-neutral building stock in the EU by 2050.

The EPBD Recast introduces new concepts, targets and tools, which EU Member States must incorporate into their laws by 29 May 2026, including:

MEPS for non-residential buildings

The EPBD Recast creates Minimum Energy Performance Standards (MEPS), i.e. key measures and timelines to progressively reduce the energy consumption and carbon emissions of the EU's worst-performing non-residential buildings. Member States must set MEPS as specific energy use thresholds (measured in kWh/m² per year) and timelines to trigger the renovation of buildings with the lowest energy performance.

Trajectories for the progressive renovation of residential buildings

EU Member States must draw up **national trajectories** to progressively renovate residential buildings by 2050 in five-year milestones. National roadmaps should ensure the residential building stock's average primary energy use:

- Decreases by 16% between 2020 and 2030
- Decreases by at least 20% to 22% between 2020 and 2035
- Is equivalent to or lower than the nationally set value by 2040, 2045 and 2050, by which the residential building stock should reach zero emission building status.

Member States will need to focus on this stock's worst-performing buildings and ensure over half of the energy efficiency improvements are achieved by renovating 43% of dwellings with the worst energy performance.

Mortgage portfolio standards

The EPBD Recast introduces **mortgage portfolio** standards, a voluntary mechanism to incentivize mortgage lenders to increase their mortgage portfolios' median energy performance by 2030 and 2050. The European Commission held a call for evidence[9] between October and November 2024 to gather input on the benefits of such a portfolio framework and current market practices. While the EPBD Recast requires the European Commission to adopt this voluntary framework through a delegated act by May 2025, the current indicative timeline suggests a Q1 2026 publication.

Better harmonized EPCs

Via a common template, the EPBD Recast also creates a consistent A-G energy performance class system for EPCs across the EU. In this standardized scale, the letter "A" will correspond to zero-emission buildings and "G" would match the worst-performing units in a national building stock.

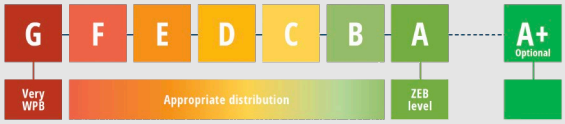

Figure 3: the EPBD Recast's EPC class scale. Source: Buildings Performance Institute Europe (BPIE), The EPBD decrypted: a treasure chest of opportunities to accelerate building decarbonisation, 2024.

National EPC databases

To facilitate building stock monitoring, EU Member States must create national databases to host all EPCs issued for individual residential and non-residential buildings. While these databases should be made publicly available on a consolidated and anonymized basis, Member States must grant full access to the uploaded EPC data to building owners, tenants and managers, as well as **financial institutions** regarding their lending portfolios.

[7] Member States could decide not to apply this requirement to certain buildings, such as those used as places of worship, temporary buildings or monuments.

[8] EUR-Lex, Directive (EU) 2024/1275 of the European Parliament and of the Council of 24 April 2024 on the energy performance of buildings (recast), 24 April 2024.

[9] European Commission, „Energy efficient buildings – portfolio framework to increase lending for renovations (delegated act)," accessed 20 March 2025.

2.2 Other EU regulatory changes

As an integral part of the European Green Deal, institutions must now disclose further information relating to the environmental, social and governance (ESG) impacts of their own operations and business activities.

This section summarizes three of the banking sector's regulatory requirements, which are directly impacted by the EPBD Recast's changes.

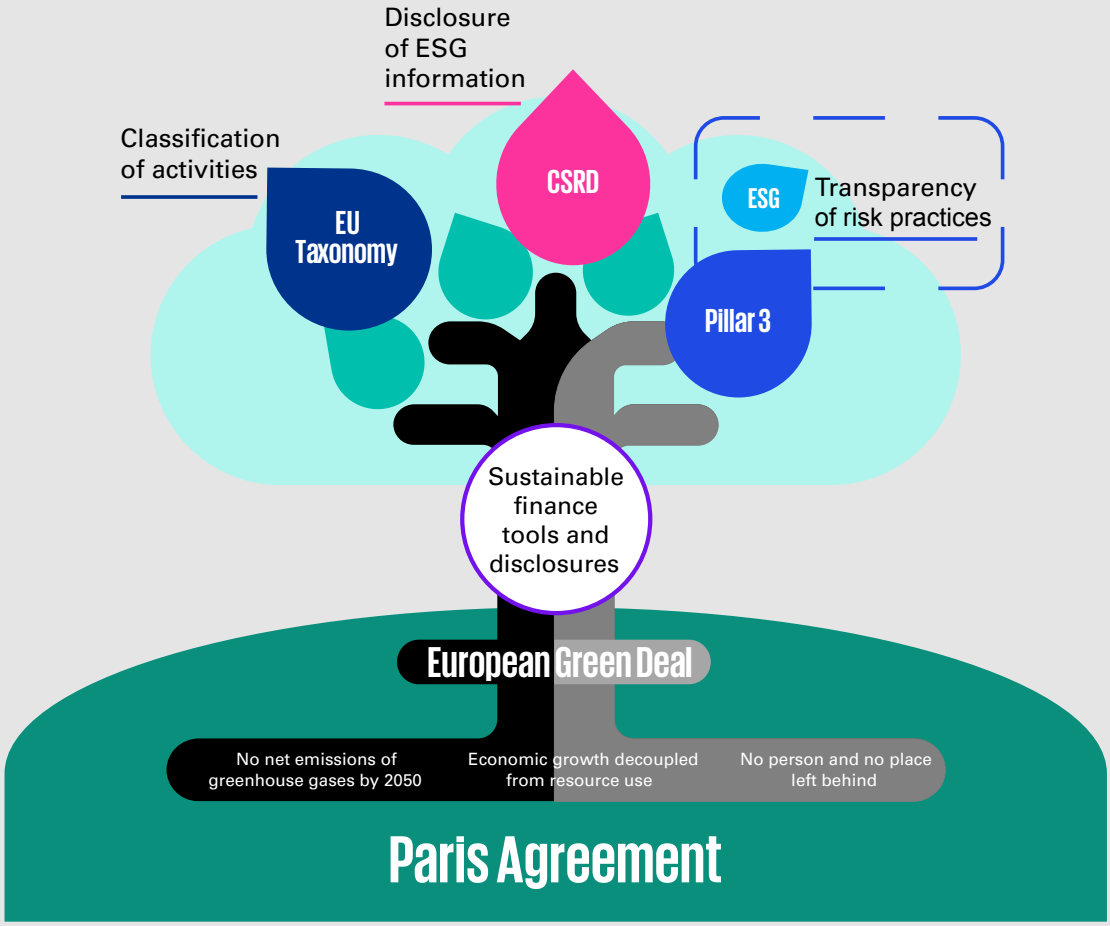

Figure 4: Paris Agreement to ESG requirements, KPMG.

As of writing, the European Commission's Omnibus proposal includes substantial changes to the CSRD and EU Taxonomy requirements.[10] While the disclosures in this section are still mandatory for some institutions, they may become voluntary for others later.

[10] European Commission, Commission proposes to cut red tape and simplify business environment, 26 February 2025.

EU Taxonomy

The Taxonomy Regulation (the "EU Taxonomy") aims to drive investments toward sectors that support the European Green Deal's goal for 2050.[11] It defines six climate-related and environmental objectives:

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.

For each of these objectives, the EU Taxonomy qualifies economic activities as environmentally sustainable if they:

1) Make a substantial contribution to one of the objectives
2) Do no significant harm (DNSH) to any of the objectives
3) Comply with the minimum safeguards
4) Comply with the technical screening criteria (TSC).

CSRD

The Corporate Sustainability Reporting Directive (CSRD)[12] requires the companies in scope of the directive to disclose detailed information about their ESG impacts, as well as how these factors affect their business. These disclosures must follow the European Sustainability Reporting Standards (ESRS), designed to ensure companies provide comprehensive and comparable information, making it easier for stakeholders to assess their sustainability performance.

Pillar 3 reporting on ESG risk

Pillar 3 disclosures are part of the Basel III framework, which aims to enhance the banking sector's transparency and market discipline. As the Pillar 3 disclosures now include ESG factors, the European Banking Authority (EBA) has developed specific guidelines for ESG disclosures[13], which are aligned with the CSRD's broader goals. The EBA guidelines require institutions to report on their environmental impact, social responsibility, and governance practices in a comprehensive and standardized manner.

Section 5 provides further insights into how these three regulations affect the banking sector.

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[11] European Commission, „EU taxonomy for sustainable activities," accessed 20 March 2025.

[12] EUR-Lex, Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting, 14 December 2022.

[13] EBA, Final Report: Final draft implementing technical standards on prudential disclosures on ESG risks in accordance with Article 449a CRR, 24 January 2022.

03

Luxembourg's legal landscape: paving the way for climate and energy efficiency

Driving sustainability: Luxembourg's Climate Law and NECP

Luxembourg's law of 15 December 2020 on climate (the "Climate Law") implements the Paris Agreement in the national legal framework. The Climate Law establishes a structured approach to reducing emissions across various sectors, including energy, transport, construction, agriculture and waste management.

Emission reduction targets and annual emission limits for residential and non-residential buildings are defined by the Climate Law and its associated Grand-Ducal Regulation of June 2022. Building emissions are projected to decrease from 1,500,000 tons of CO_2 equivalent in 2021 to 590,000 tons by 2030.[14]

In 2020, Luxembourg presented its national strategy for building renovations,[15] a key pillar of its National Energy Efficiency and Climate Plan (NECP). The NECP, introduced as part of the EU's Governance of the Energy Union and Climate Action Regulation, outlines an EU Member State's roadmap to meet its climate and energy commitments. STATEC's latest projections show the NECP's intensive renovation strategy will contribute to significantly declining a building's GHG footprint.[16]

Despite ambitious renovation targets at both national and EU levels, banks remain skeptical about their feasibility. All participating banks in the ABBL/KPMG Survey found the targets unrealistic due to high housing prices, rising renovation costs, and challenges with recycling discarded materials.

However, three out of the four respondents identified a rising demand from homeowners to buy energy-efficient buildings (or renovate the least efficient ones) in 2024 compared to 2023.

[14] Ministry of the Economy and Ministry of the Environment, Climate and Biodiversity, Luxembourg's integrated national energy and climate plan for the period 2021-2030, July 2024.

[15] Ministry of Energy and Spatial Planning, Long Term Renovation Strategy for Luxembourg, 25 June 2020.

[16] STATEC, Projections du STATEC pour la mise à jour du PNEC, 19 July 2024.

3.2 Navigating buildings' energy performance data in Luxembourg

3.2.1 Energiepass: Luxembourg's approach to energy performance in buildings

Following the NECP's ambitious goals, the Luxembourg Government continues to introduce valuable tools for assessing the sustainability of housing. These include EPCs (known as "Energiepass" in Luxembourg) for residential buildings via the Grand-Ducal Regulation of 30 November 2007, and for non-residential buildings[17] via the Grand-Ducal Regulation of 31 August 2010.

For residential buildings, the Energiepass distinguishes between single-family homes and apartments. For single-family homes, a specific Energiepass is issued for each building, whereas for apartments, an Energiepass is generally drawn up for the entire apartment block.

In Luxembourg law, Energiepasses are required:

- When constructing a new building that requires a building permit
- When an existing building is extended
- When substantial modifications or renovations are made to a building, particularly if they affect more than 10% of the building's thermal envelope (e.g. exterior walls, roof and windows) and impact its energy performance.

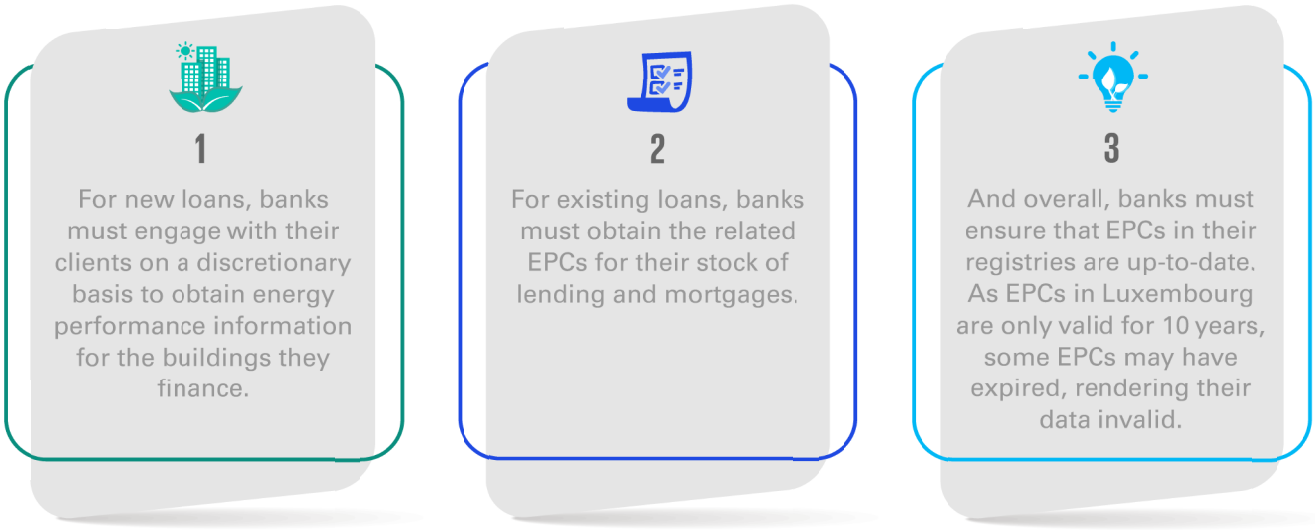
In addition, upon selling or leasing a building, the owner must provide a valid Energiepass to the new owner or tenant unless a valid certificate already exists.

[17] The Grand-Ducal Regulation of 31 August 2010 defines non-residential buildings as those where less than 90% of the total floor area is designated for residential purposes.

3.2.2 EPC data accessibility in Luxembourg: bridging the gap for banks

As of publication's date, there is no aggregated, publicly accessible database detailing Luxembourg's EPC distribution. Under the EPBD Recast, Luxembourg and other EU Member States will have to establish these databases to host EPCs issued for buildings on their national territory. This includes all "raw" necessary data to assess the buildings' energy performance. These databases, as required by the revised Directive, should also be accessible to banks as regards the buildings they finance.

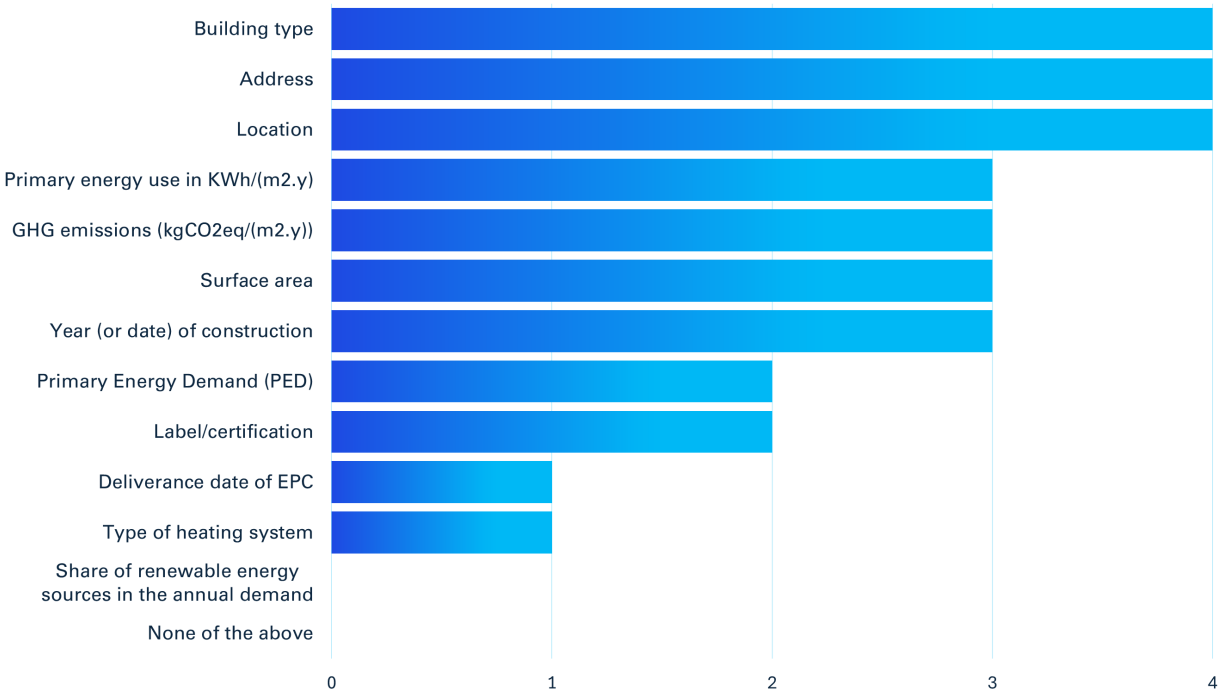
In the absence of a national database for EPCs, banks must implement several measures to gather and maintain reliable energy performance data, for example:



Banks depend on their clients to obtain the EPCs of the collateralized loan stock (if these certificates exist) to comply with regulators' growing transparency expectations, such as those outlined in section *2.2*.

The ABBL/KPMG Survey's results confirmed the above: as of now, most responding banks already require a digital EPC for all new loans and additional information, such as the building's type and location, as illustrated in the graph below. The challenge now lies with the collection of EPCs for the existing building stock, and the respondents have progressed at different speeds.

Graph 1: Does your bank collect any data that can be relevant for assessing the energy performance and sustainability of buildings?



From a governance perspective, the **ESG teams of the surveyed banks seemingly lead the way in handling clients' requests together with the credit risk teams**. The ABBL/KPMG Survey's results show that most banks provide (or shortly plan to provide) specific internal training on the credit-granting industry's green transition.

Beyond challenges specific to Luxembourg, **EPC ratings diverge significantly across EU countries** as illustrated in Figure 5. This mismatch stems from differences in methodologies, modeling approaches, national policies and building stock. As a result, buildings assessed under different national frameworks can receive inconsistent ratings, even when their actual performance is similar.[18] It is particularly relevant in Luxembourg, where the customers seeking mortgages may look at neighboring countries such as France, where an EPC Class C dwelling may be equivalent to an EPC Class F in Luxembourg. Inconsistent EPC ratings across countries increase the risk for banks of financing buildings that fall outside their risk appetite.

Aligning EPC data availability and access in Luxembourg remains a significant challenge for the implementation of the EPBD Recast. Additionally, Luxembourg's unique situation necessitates alignment with neighboring EU countries, adding further complexity to the process.

[18] Jenkins, David P. et al. A Comparative Study of Energy Performance Certificates across Europe. Buildings 14, no. 9 (2024): 2906.

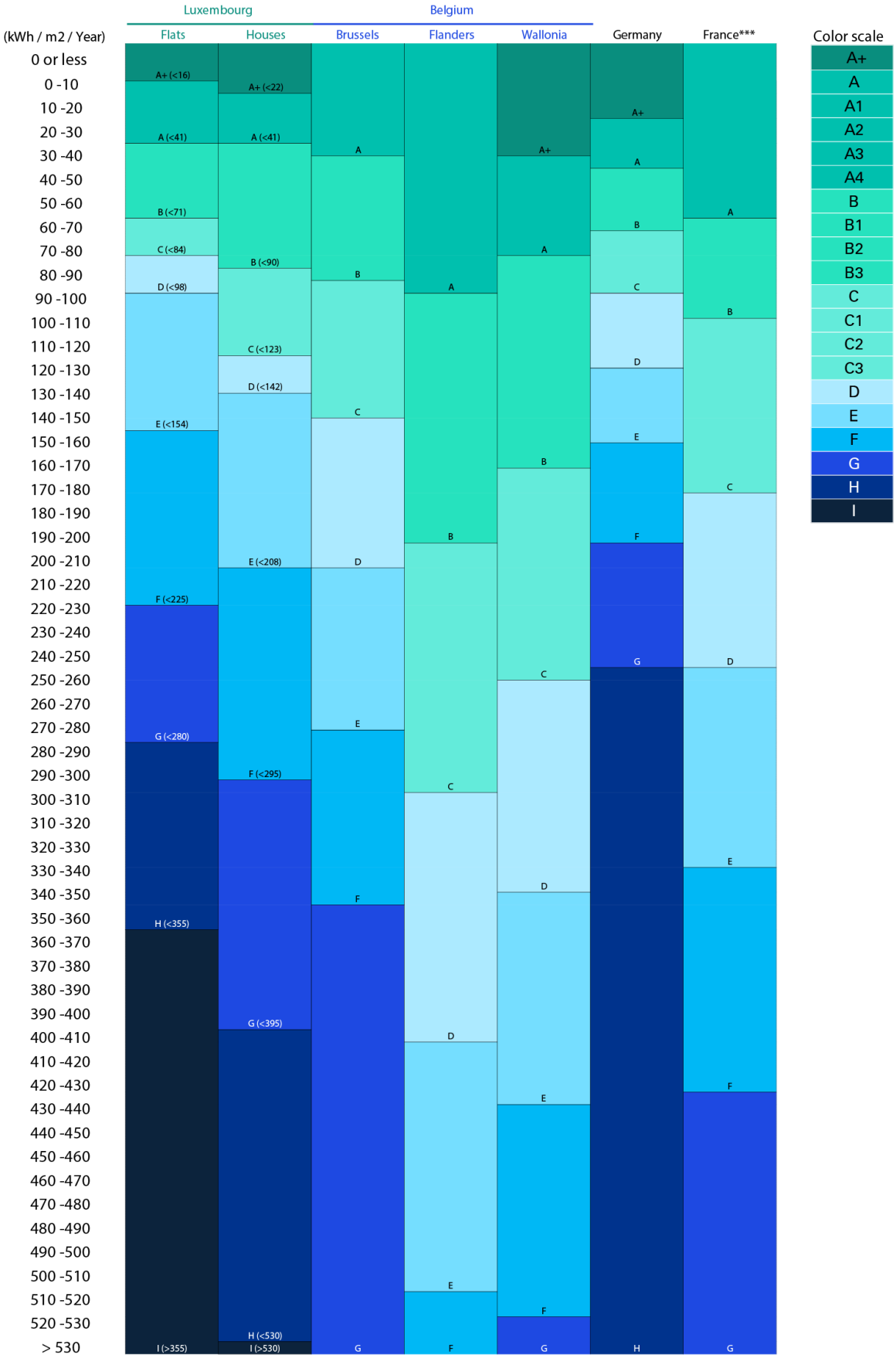


Figure 5: a comparison of various EPC thresholds across European countries. Source: European DataWarehouse, Revisiting "The Babel Tower Of EPC Ratings": Updated Thresholds Across Europe,": Updated Thresholds Across Europe, 2024

3.3 National measures and incentives for greener real estate

The NECP outlines several future and ongoing initiatives supporting Luxembourg's sustainable housing shift to ease the acquisition of energy-efficient homes or the renovation of existing ones. These include Klimabonus Wunnen,[19] tax incentives for energy renovation of residential buildings[20] and aid schemes for municipalities,[21] which offer economic support for private and public buildings, infrastructures, and renewable energy projects.

The banks interviewed for the ABBL/KPMG Survey had already implemented initiatives to improve the overall energy performance of their mortgage loan portfolios and provide further value to potential homeowners, such as partnerships with craftsmen specialized in clean energy, reduced lending fees, and preferential interest rates.

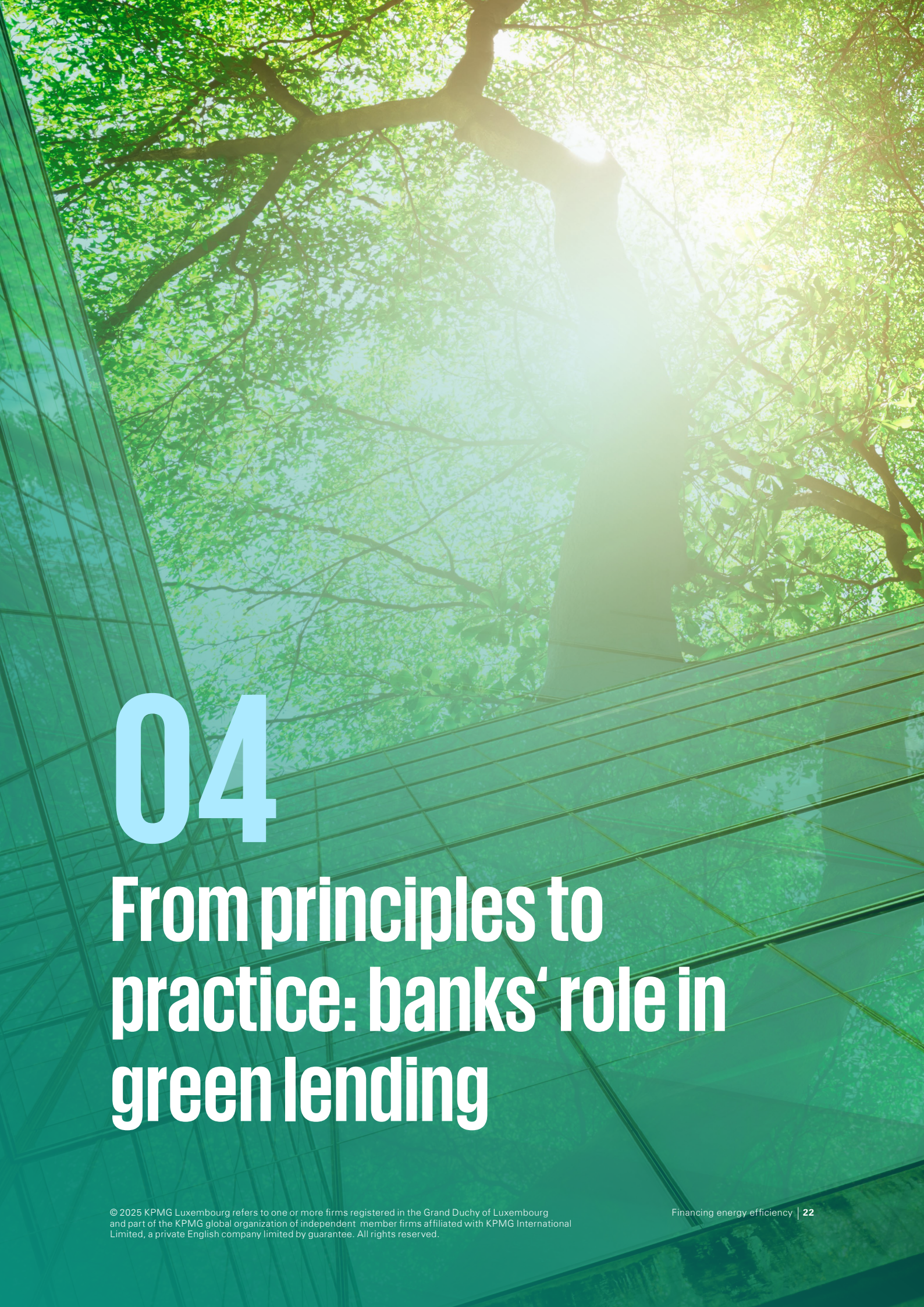
All surveyed banks remain committed to exploring innovative solutions to provide these valuable incentives and plan to extend their offering to support the green transition of their mortgage portfolio.

However, the respondent banks made clear that they do not exclude lending to customers purchasing low-energy class buildings. Even though credit advisors are trained to explain energy renovation incentives and state aid to clients, loan applications are considered regardless of the home buyer's commitment to renovate the property.

[19] Ministry of the Economy and Ministry of the Environment, Climate and Biodiversity, Luxembourg's integrated national energy and climate plan for the period 2021-2030, July 2024, pages 133-136.

[20] Ministry of the Economy and Ministry of the Environment, Climate and Biodiversity, Luxembourg's integrated national energy and climate plan for the period 2021-2030, July 2024, page 140.

[21] Ministry of the Economy and Ministry of the Environment, Climate and Biodiversity, Luxembourg's integrated national energy and climate plan for the period 2021-2030, July 2024, page 141.



04

From principles to practice: banks' role in green lending

4.1 GLP: a voluntary standard

While no universally applied standards or labels for green loans exist, the Green Loan Principles (GLP) provide the closest equivalent. Developed by the Loan Market Association, the Asian Pacific Loan Market Association and the Loan Syndication and Trading Association in 2018, these international principles define the fundamental characteristics of green loans as:

> *"[...] any type of loan instruments and/or contingent facilities (such as bonding lines, guarantee lines or letters of credit) made available exclusively to finance, re-finance or guarantee, in whole or in part, new and/or existing eligible Green Projects and which are aligned to the four core components of the GLP."*[22]

[22] Loan Market Association, Green Loan Principles, February 2023.

The GLP aim to support market participants in classifying and evaluating green loans while ensuring transparency, integrity and disclosure. To be classified as green, a loan must align with the GLP's four core pillars, as summarized in Figure 6.

Although the GLP's definition does not explicitly mention mortgages as instruments, the financing of energy efficiency-related projects and green buildings are counted as eligible green projects under the GLP's use of proceeds pillar.

The ABBL/KPMG Survey's findings regarding the definition of "green mortgages" show a stark contrast between the respondents. Half the banks define green mortgages based on the definition provided in GLP, EU Taxonomy alignment or collateral/building's energy performance (e.g. renewable energy installations or energy-efficiency renovation works). However, the other half have not yet established a definition, either because they are waiting for regulations to provide one or they do not yet offer such a product.

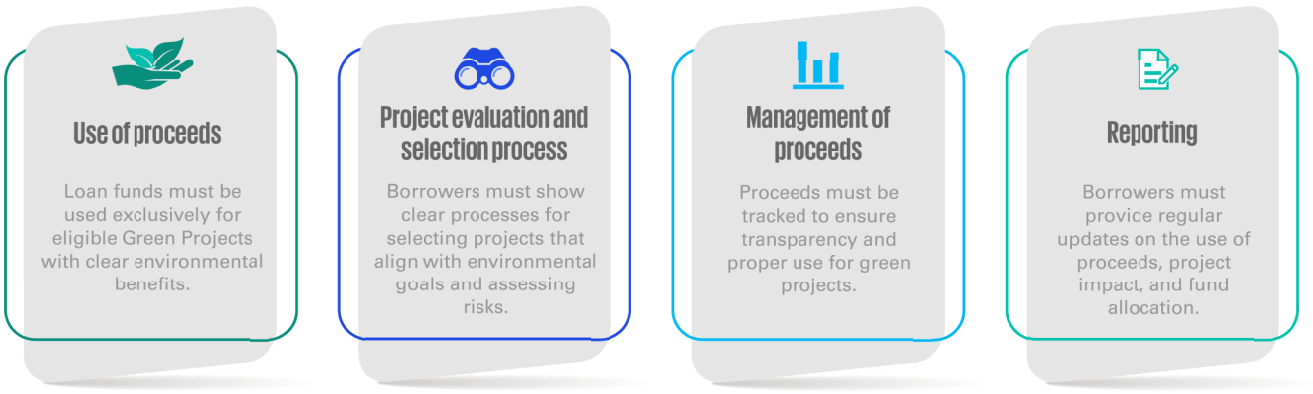


Figure 6: the GLP's core components. Source: Loan Market Association, Green Loan Principles, February 2023.

4.2 EBA Report on green loans and mortgages

In 2023, the EBA published a report responding to the European Commission's call for advice on green loans and mortgages.[23]

The report found that most EU credit institutions used internal standards to define green lending and green mortgages. In addition, they generally leveraged industry practices like the GLP to provide green loan financing projects that met pre-defined eligibility criteria for their environmental benefits.

Regarding the EU Taxonomy, few banks used both its TSC and its DNSH principle, with some institutions only leveraging the TSC for specific areas like renewable energy, green buildings or clean transportation. Where the use of proceeds was not known, banks sometimes granted general-purpose green loans to companies deriving most of their revenue from economic activities defined as sustainable.

Since 2023, rising interest rates and real estate prices have significantly dampened client appetite for renovations, making it harder for banks to secure loans. With limited financing opportunities, competition has intensified, particularly for energy-efficient buildings, which remain scarce.

A valuation gap is also emerging, as higher EPC-rated homes command premium prices, limiting access for many buyers. This trend may widen inequalities in housing quality and energy efficiency.

[23] EBA, EBA Report in response to the call for advice from the European Commission on green loans and mortgages, December 2023.

4.2.1 Who benefits from green lending?

The EBA's report showed that households benefitted the most from green lending in the EU, primarily from financing residential real estate. Over 98% of green lending to households focused on purchasing energy-efficient homes or financing the construction and refurbishment of properties that meet sustainability criteria, such as high EPC ratings.

While less frequent, renovation loans were also offered, typically aiming for at least a 30% reduction in the building's energy consumption or carbon emissions compared to pre-renovation levels. Green loans for movable property, including zero-emission or low-emission vehicles (e.g. electric cars and bicycles), and other assets (e.g. energy-efficient home appliances or solar panels) made up the remainder of the green lending provided to households.

Small and medium-sized enterprises (SMEs) also benefitted from green loans in different ways and extents. Over 42% of green lending to retail SMEs[24] was directed towards acquiring, constructing or renovating energy-efficient commercial real estate (CRE) using sustainability criteria similar to those of household loans. A quarter of green loans to retail SMEs financed movable property, including electric cars and freight trucks.

Green lending to non-retail SMEs followed a similar pattern, with more than half of green loans directed toward CRE with a focus on energy efficiency improvements for industrial or commercial buildings. Only 2% of loans to non-financial corporates (NFCs) were classified as green loans by banks, a third of which was directed towards energy-efficient CRE. The greatest portion of green lending to NFCs was allocated to other use-of-proceeds loans, at about 44%.

[24] The EBA's report refers to retail SMEs as defined by article 147 paragraph 5(a)(ii) of the Capital Requirements Regulation, namely banks' exposures to SMEs considered as retail class because they do not exceed €1 million.

4.2.2 Toward a green loan label?

Inconsistent practices in classifying green loans have led to market fragmentation. To solve this, the EBA proposes to introduce a high-level definition for green loans, drawing inspiration from the GLP and the European Green Bond Standard and referring to the EU Taxonomy's TSC:

Loan type and asset perimeter

- All types of loans and advances with known use of proceeds.
- E.g. a term loan, investment loan, project financing, refinancing loan, financial and operating leasing, syndicated loan, revolving credit facility, factoring and forfaiting, and working capital when the use of proceeds is known.
- Loans and advances to households, retail and non-retail SMEs, and large corporates.

Newly originated loans, loan stock and grandfathering

- Loan proceeds should be allocated in alignment with the applicable TSC when the loan is originated and until maturity.
- When TSC are modified after the loan origination and before its maturity, the outstanding amounts should be identified as green until a certain point, after which the banks should ensure the loan aligns with the amended TSC to maintain its green definition.
- Loans already granted could be classified later as green, but only if their proceeds become aligned with the EU Taxonomy (e.g. if a residential building becomes sustainable through renovation).

Use of proceeds

- Allocation to economic activities aligned with the EU Taxonomy until their maturity.

Capital expenditure

- Flexible conditions for green loan proceeds allocated for capital expenditure where their EU Taxonomy alignment can be achieved within a reasonable time from their origination.

In its report, the EBA also provided advice on how a review of the Mortgage Credit Directive (MCD) could boost the uptake of green mortgages in the EU:

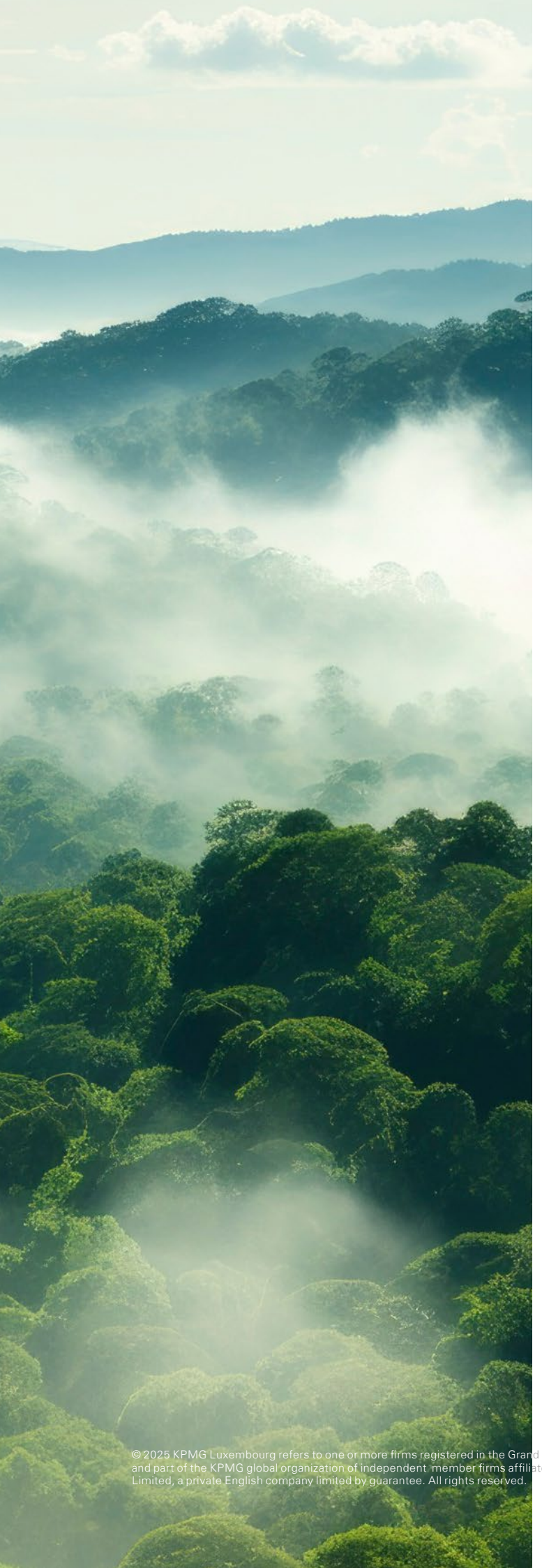
1) **Incorporation of green mortgages**
   The MCD should recognize green mortgages, including key sustainability features like energy performance, and align with the broader sustainable finance framework.

2) **Pre-contractual information**
   The European standardized information sheet should include the property's EPC and other sustainability features in its key pre-contractual information to help borrowers understand how energy efficiency affects loan terms.

3) **Staff competence requirements**
   Banks' staff should receive additional training to sufficiently advise clients on green mortgages. Minimum competence criteria in sustainable finance, climate risks and green loans could be added to Annex III of the MCD.

05

Impact on the banking sector: increased reporting requirements for residential assets



As previously discussed in Section 2.2, credit institutions must now disclose further ESG-related information regarding their own operations, business activities and impacts.

This section outlines the disclosures of the main EU regulatory reporting requirements for banks related to green mortgages: the EU Taxonomy, CSRD and Pillar 3 reporting.

5.1 EU Taxonomy

The EU Taxonomy aims to provide a common classification system defining sustainable economic activities. This regulation is key for banks and companies to define their environmental strategies and decarbonization transition strategies based on objective technical criteria.

It also intends to provide market transparency on investments in identified environmental objectives. Banks need to disclose key metrics, such as the Green Asset Ratio (GAR),[25] which represents the percentage of the banks' total assets that finance EU Taxonomy-aligned activities.

Computing their GAR can be challenging for banks as they need visibility and transparency on the renovation loans and loans collateralized by the immovable property they have granted. According to the ABBL/KPMG Survey, the information that banks collect from their clients for EU taxonomy reporting purposes include:

- The EPC (as planned and as built)
- Other sustainability certifications, such as LENOZ, BREEAM, LEED and DGNB,[26] if available
- The type of installations, maintenance, and repairs according to the EU taxonomy criteria.

Additionally, the interviewed banks acknowledged the need for clear internal data classification to automatically identify which financing products addressed the nuances between acquisition rather than renovation, or installation and maintenance.

The EPC is pivotal to assess the alignment of loans collateralized by residential and commercial immovable properties to the EU taxonomy, as it includes essential, reliable and up-to-date information as shown in Figure 7. Such assessments have driven banks to offer financial incentives to clients with the objective of collecting the EPC related to the properties, and some of the respondent banks have launched extensive campaigns in this regard.

EPC Information	Format
Building size	m2
Building construction date	DD/MM/AA
Building type	Text
Energy performance	kWh/m2
Primary energy demand	kWh/m2
Energy class	A/B/C/D/E/F/G/H/I
EPC issuance date	DD/MM/AA
EPC expiration date	DD/MM/AA

Figure 7: the GAR-related information provided in EPCs and its format

[25] EUR-Lex, Commission Delegated Regulation (EU) 2021/2178 of 6 July 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council, 6 July 2021, page 40.

[26] The Lëtzebuerger Nohaltegkeets-Zertifizéierung (LENOZ), the Building Research Establishment Environmental Assessment Methodology (BREEAM), Leadership in Energy and Environmental Design (LEED) and Deutsche Gesellschaft für Nachhaltiges Bauen (DGNB).

Based on the ABBL/KPMG Survey's results, **all respondent banks have made inroads in preparing and implementing the GAR for real estate assets, collecting and storing EPCs on their mortgage loans**. However, they are still investigating how to assess the EU Taxonomy's TSC for building acquisition. According to the European Commission's fact sheet on the EU Taxonomy's uptake, "Banks are starting to use the Taxonomy in their lending strategies and in their assessment of companies' investment plans".[27] However, based on the ABBL/KPMG Survey, the companies aiming to meet specific investors' needs and environmental targets and reflecting it through the EU Taxonomy disclosures are mostly large corporate clients as of now.

[27] European Commission, "The EU Taxonomy's uptake on the ground," accessed 21 March 2025.

5.2 CSRD, non-financial reporting and transition plans

In January 2025, the CSRD entered into force for certain companies across Europe, with new obligations aiming to bring sustainability reporting and financial reporting on equal footing.

The CSRD's disclosure requirements call for a clear transition roadmap for reducing financed emissions — that is, the emissions directly linked to their lending portfolios. This transition plan not only details the strategic, operational and financial measures needed to reduce GHG emissions but also should explain how financial institution's current portfolios of mortgages and investments will evolve to support sustainability goals.

For banks, the transition plan is particularly relevant because it bridges the gap between traditional financial activities and emerging green financing approaches. In practice, to create a robust transition plan, banks must:

1) Integrate climate risk assessments into their underwriting, credit risk and investment processes
2) Conduct scenario analyses and stress testing to evaluate portfolio resilience under various climate transition pathways
3) Set clear numerical targets – such as reducing financed emissions or increasing their green mortgage share – with associated timelines and progress metrics.

Consequently, one of the most effective ways for banks to achieve their decarbonization targets is by financing low-carbon, energy-efficient buildings through green mortgages.

Banks can also support the decarbonization trend by implementing green criteria in their loan screening processes, financing retrofitting projects, and tracking energy efficiency metrics. By doing so, banks are encouraged to develop standardized key performance indicators (KPIs) to assess buildings' performance and efficiency and finance adaptive strategies that enhance properties' resilience. This mitigates the risk of stranded assets – or assets that significantly lose value due to evolving regulations or market trends.

Moreover, as part of the CSRD disclosure requirements, banks must include a table outlining their total amount of real estate assets by energy efficiency class, further underscoring their commitment to sustainability.

Voluntary frameworks can enhance the credibility and standardization of the carbon footprint measurements of financial institutions. For instance, the Partnership for Carbon Accounting Financials' (PCAF) Global GHG Accounting and Reporting Standard for the Financial Industry[28] allows banks to standardize calculations related to green mortgages and investment portfolios, provide stakeholders with comparable data on financed emissions and integrate these metrics into their transition plans as key progress indicators toward achieving low-carbon objectives.

[28] PCAF, „The Global GHG Accounting and Reporting Standard for the Financial Industry," accessed 21 March 2025.

5.3 Pillar 3 reporting on ESG risk

Together with the CSRD and EU Taxonomy frameworks, the Pillar 3 disclosure requirements mandate financial institutions to transparently report their ESG risk exposure, fostering greater market discipline and stakeholder confidence.

Specifically, the EBA's Final draft implementing technical standards on prudential disclosures on ESG risks requires banks to report, among others, the following information[29] related to mortgage lending and sustainable real estate:

- The collateral's energy efficiency and the EPC rating for mortgage loans in the objective of assessing the transition risk for the bank, in the *Template 2: Banking book – Climate change transition risk: Loans collateralised by immovable property – Energy efficiency of the collateral*
- The exposures to loans collateralized with immovable property, and repossessed real estate collateral vulnerable to chronic and acute climate-related hazards in the *Template 5: Climate change physical risk: Exposures subject to physical risk.* Here, the banks must consider the underlying asset's geography in line with the Task Force on Climate-Related Financial Disclosures' (TCFD) recommendations, and identify possible climate hazards using national or dedicated databases, such as the Global Drought Risk platform.
- The Green Asset Ratio and its details on the EU Taxonomy objectives of climate change mitigation or adaptation in the *Template 6: Summary of GAR KPIs.*

[29] EBA, Final Report: Final draft implementing technical standards on prudential disclosures on ESG risks in accordance with Article 449a CRR, 24 January 2022.

06

Further business application and impacts

6.1 Valuation of real estate

Considering ESG factors in real estate valuation has gained increasing significance for banks and financial institutions, especially regarding mortgages and loans secured not just by real estate but also by tangible assets, such as plant and equipment, infrastructure, transportation assets, and utilities.

Given that these financial commitments are often over the medium to long term, there is a rising risk of assets losing their value over time due to insufficient regard for sustainability factors. Consequently, lenders must proactively ensure that valuers expressly integrate sustainability considerations into property valuations.

In recent years, the valuation industry's awareness of this topic has rapidly increased.

In 2023, the Royal Institution of Chartered Surveyors' (RICS) sustainability and ESG professional standard "Sustainability and ESG in commercial property valuation and strategic advice"[30] indicated that in valuation reports, valuers should collect and disclose information on how ESG considerations were treated in their approach, calculations and commentary.

In 2024, the International Valuation Standards Council (IVSC) published a perspectives paper on ESG and real asset valuation[31] outlining that

[30] RICS, Sustainability and ESG in commercial property valuation and strategic advice, originally published in December 2021 as a guidance note but reissued in May 2023 as a professional standard.

[31] IVSC, IVSC Perspectives Paper – ESG and Real Asset Valuation, 23 September 2024.

the valuer should be aware that ESG can represent either risks or opportunities associated with the subject asset. It also stated that the valuer should not invent the asset's ESG characteristic but interpret the collective actions of market participants instead.

In response to this dynamic topic, both the IVSC's standards[32] and RICS' Valuation Global Standards[33] have been revised, effective from January 2025.

The RICS' Valuation Practice Guidance Application 8 (VPGA 8) regarding the valuation of real property interests states that valuers should:

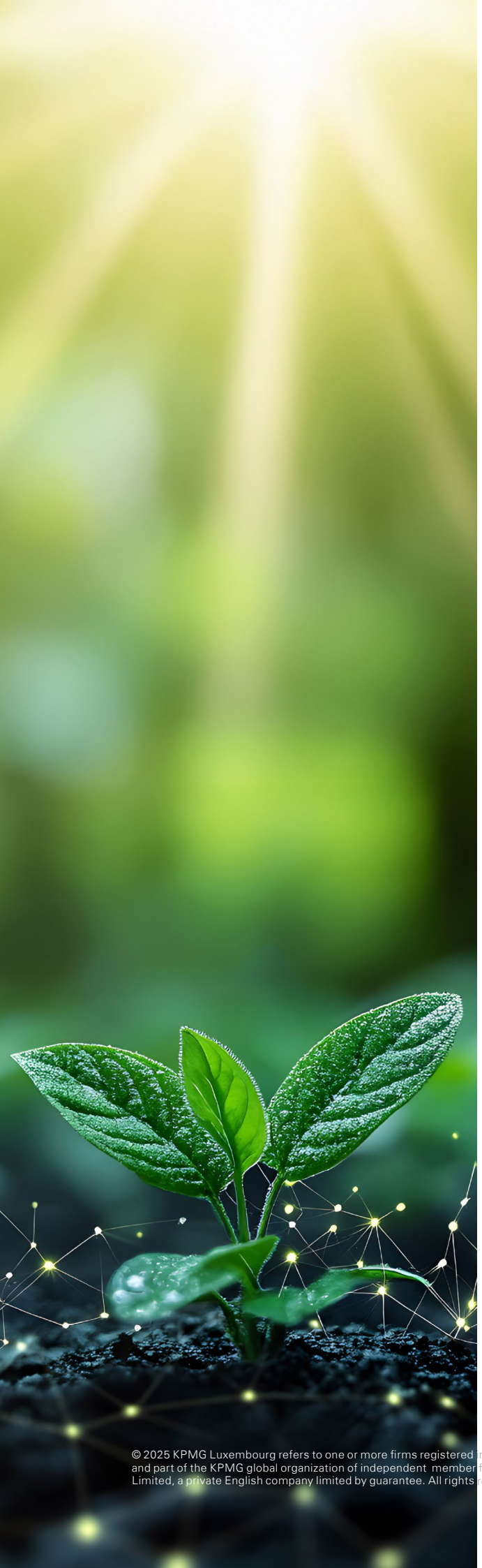
- Assess the extent to which the subject property meets sustainability and ESG criteria expected within its market context
- Describe collected sustainability-related property characteristics and attributes
- Provide an opinion on the relationship between sustainability factors and valuation
- Offer an opinion on the potential impact of these factors on relative property values over time.

VPGA 8 further suggests that sustainability characteristics should only impact reported value if supported by existing market evidence or if market participants expressly consider these factors in their bids. While the RICS acknowledges that VPGAs are not mandatory, they are considered best practices for professional valuers.

Nonetheless, there is an overall perception among real estate market participants that ESG does and will continue to have an impact on property values, albeit the data to assess it is not yet readily available in the majority of EU markets. As ESG reporting and data disclosure requirements are continuously evolving, valuers must follow best practice to achieve better conformity and transparency in determining and reporting property values.

At the same time, it's worth emphasizing that the valuer is not a market maker. Instead, the valuer's role is to mirror the market and interpret the possible actions of market participants. Therefore, a collective effort from all industry participants is crucial to ensure the measurability of ESG factors in valuations.

[32] IVSC, New edition of the International Valuation Standards (IVS) published, 24 January 2024.
[33] RICS, RICS Valuation – Global Standards (Red Book), effective from 31 January 2025.



6.2 Risk management

These advancements create attractive investment opportunities for banks, with green loan issuance for the sustainable real estate sector a strategic prospect. However, such new products and investment opportunities require banks to assess and monitor the associated risks.*

For a bank lending to real estate customers, the fundamental risk profile of sustainable real estate closely mirrors that of conventional real estate investments. Traditional risks assessed at the bank level toward its customers and products, including credit, liquidity and climate-related factors, remain comparable across both green and standard real estate assets. A closer examination of physical risks[34], such as flooding risk, indicates that these events' financial impact has already been considered in the risk assessment of the real estate credits to date, and is nearly identical for both green and standard real estate investments, the difference mostly lying in the valuation of the asset over the long-term.

[34] As defined in CSSF Circular 21/773
* This discussion paper is not intended to provide an exhaustive overview on banks' obligations related to ESG risks.

In addition, green real estate is expected to benefit from preferential financing conditions to foster the green transition. The advantage of unlocking new financing revenues for a bank mitigates the inherent industry risks, particularly those related to credit and liquidity, thereby contributing to new and higher lending revenues and increased financial resilience of a credit institution. In the long term, integrating sustainability into real estate investment strategies ensures the continuity of the mortgage lending business model in an evolving economic and sustainable landscape.

Even though green real estate investments generally require higher initial capital commitments from the borrower, their long-term financial viability remains robust due to the EU's strong regulatory support and financial incentives. Incentive-based financial instruments, such as sustainability-linked loans (SLLs), align interest rates with ESG performance, enhancing these investments' profitability. These mechanisms, which reinforce the economic feasibility of green investments while promoting environmental responsibility, are encouraging banks to create new revenue streams.

In terms of supervisory expectations, the EBA requires banks to systematically treat ESG risks as core components of credit risk management[35]. As such, banks should embed them in their credit risk appetite, policies and procedures, in order to holistically assess how their borrowers' financial condition can be affected by ESG factors. **Importantly, banks should also consider how ESG factors impact the value of collateral, for example, by taking into account the energy efficiency of buildings.**

Overall, green real estate projects demonstrate good resilience to risk exposure due to their focus on sustainability, energy efficiency building matching the evolving regulatory framework on the climate transition. The banks shall bet on the long-term asset value and adapt the creditworthiness of their borrowers to include such factors. Given these advantages, prioritizing green loans over conventional real estate financing strengthens the bank's resilience and supports the alignment of the bank to its strategic interests, ensuring both financial stability and compliance with evolving sustainability regulations.

[35] European Banking Authority, Guidelines on Loan Origination and Monitoring (EBA/GL/2020/06), 29 May 2020, https://www.eba.europa.eu/regulation-and-policy/credit-risk/guidelines-loan-origination-and-monitoring.

07 Main challenges and solutions

In their interviews, the respondent banks of the ABBL/KPMG Survey outlined the top-three challenges they face or foresee regarding green mortgage lending. Our analysis of the discussion points led to the following three main solutions, as outlined in Figure 8.

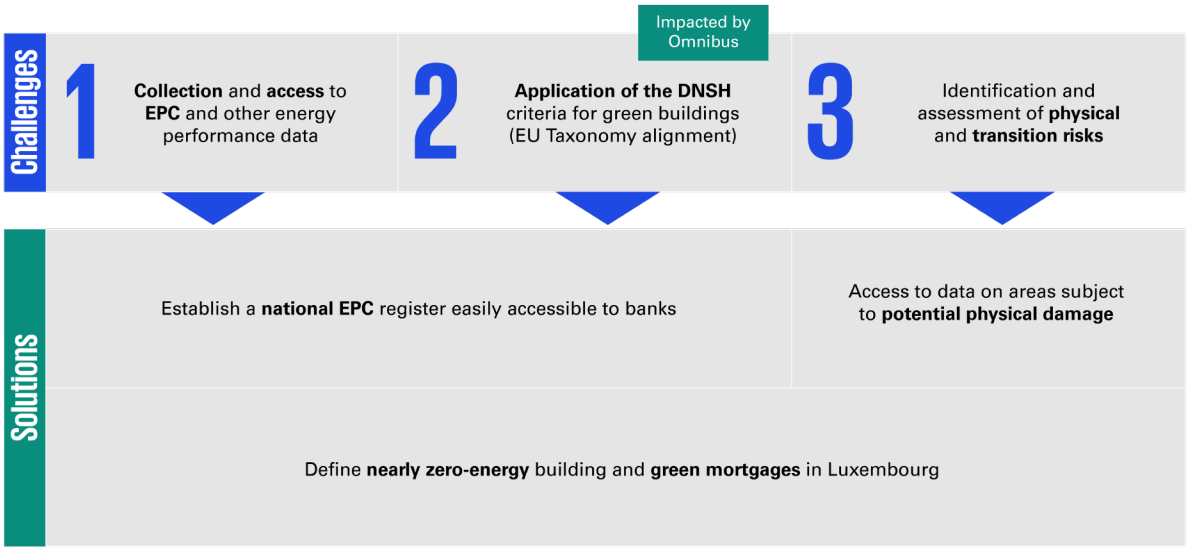


Figure 8: the three main challenges and solutions identified from the ABBL/KPMG Survey interviews

As outlined in section 3.2, banks' processes for acquiring building EPCs are currently arduous, requiring clients to provide these certificates. In addition, banks struggle to ensure that the data collected is up to date. Therefore, establishing a national EPC register that is easily accessible to banks is essential.

This centralized EPC database would streamline the process of obtaining accurate and up-to-date energy performance data, enabling banks to assess the energy efficiency of properties more efficiently. By having reliable access to this information, banks can better support their clients in making informed decisions about green mortgages, ultimately promoting energy-efficient housing in Luxembourg. This national register will also support banks' assessment of financed dwellings' EU Taxonomy alignment, ensuring the same assumption applies across the country.

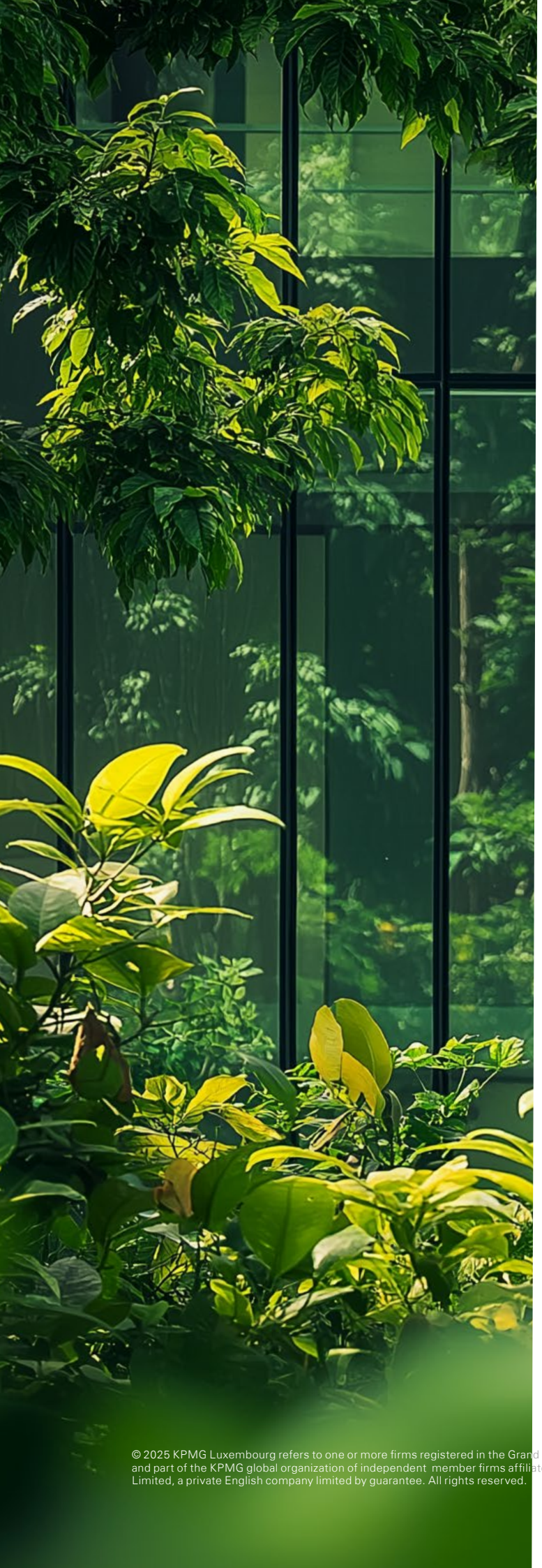
As of publication date, the European Commission has announced the revision of the EU Taxonomy's DNSH criteria, aiming to simplify the framework and to help financial institutions to overcome the challenge related to the application of DNSH criteria of high energy performance buildings.

Platforms like Geoportal Luxembourg offer valuable geographic information that can help banks evaluate the potential risks associated

with properties. By leveraging this data, banks can already make more informed lending decisions and better advise their clients on mitigating these risks, ensuring the long-term resilience of green mortgage portfolios. Nonetheless, further guidance is needed on identifying and assessing physical and transition risks specifically for buildings, such as more granular and forward-looking flooding data and damage functions tailored to the Luxembourg territory.

Finally, the interviewed banks emphasized the need for a clear definition of a green mortgage in Luxembourg. This definition is crucial for banks to avoid the risk of greenwashing while aligning with sustainability goals. It should incorporate social considerations alongside environmental factors, ensuring these products promote not only ecological sustainability but also inclusive and fair access to housing finance.
This holistic approach supports banks in their efforts to contribute to a more sustainable and equitable future.

08 What's next?



Green lending is becoming a pivotal instrument in financing Europe's sustainable economic transition, and it possesses significant growth potential. On one hand, households especially benefit from green lending through financing energy-efficient residential real estate, while, on the other hand, corporates can leverage the green loans to finance their large-scale real estate projects.

However, challenges persist hindering green lending's expansion. We expect public policies to play an instrumental role in shaping the green lending landscape, encouraging expedited building renovations with the objective of a 16% decrease in the average primary energy use of the entire residential building stock by 2030 (in comparison with 2020) and a zero-emission building stock by 2050.

While all new buildings are already classified as Class A, the real challenge lies in addressing the existing building stock for which energy efficiency data is still largely missing.

Overall, to meet Luxembourg's ambitious goal of achieving net zero emissions by 2050, collective effort from all stakeholders is essential. Green lending is to be incentivized to ensure affordability by leveraging subsidized interest rates, extended repayment terms, or blended finance solutions combining public and private funding. Everyone must contribute to this transformation to ensure a sustainable future.

09 Glossary

ABBL: Association des Banques et Banquiers du Luxembourg
BREEAM: the Building Research Establishment Environmental Assessment Methodology
BTAR: the Banking Book Taxonomy Alignment Ratio
Climate Law: Luxembourg's law of 15 December 2020 on climate
CO_2: carbon dioxide
CRE: commercial real estate
CSRD: Corporate Sustainability Reporting Directive
DGNB certification: the certification of the Deutsche Gesellschaft für Nachhaltiges Bauen (the German Sustainability Building Council)
DNSH: the "Do No Significant Harm" principle of the EU Taxonomy
EBA: European Banking Authority
EEA: European Environmental Agency
EPBD: Energy Performance of Buildings Directive
EPC: Energy Performance Certificate
ESG: environmental, social and governance
European Green Deal: a set of policy initiatives by the European Commission aimed at making the EU climate-neutral by 2050
EU Taxonomy: the EU Taxonomy for Sustainable Activities is a classification system that defines environmentally sustainable economic activities within the EU
GAR: the Green Asset Ratio of the EU Taxonomy
GHG: greenhouse gas emissions, which are gases like CO_2, methane and nitrous oxide that trap heat in the Earth's atmosphere, leading to global warming
GLP: Green Loan Principles
Green ENEFF: Green Energy Efficiency Financing
Green loan: a loan for environmentally sustainable projects
IEA: International Energy Agency
IPCC: Intergovernmental Panel on Climate Change
IVSC: International Valuation Standards Council
LEED: the Leadership in Energy and Environmental Design green building rating system
LENOZ: the Lëtzebuerger Nohaltegkeets-Zertifizéierung, Luxembourg's sustainability certification for residential buildings
MCD: Mortgage Credit Directive
MEPS: Minimum Energy Performance Standards
NECP: National Energy and Climate Plan for each EU Member State
NFCs: non-financial corporates
NFRD: Non-Financial Reporting Directive
Paris Agreement: international climate agreement that aims to limit global warming below 2°C, with efforts to keep it below 1.5°C
PCAF: Partnership for Carbon Accounting Financials
Pillar 3 reporting: a financial risk disclosure framework under Basel regulations
RICS: Royal Institution of Chartered Surveyors
SMEs: small and medium-sized enterprises
TSC of the EU Taxonomy: Technical Screening Criteria of the EU Taxonomy
UNEP: United Nations Environment Programme
VPGA: RICS' Valuation Practice Guidance Application

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