



Introducing **ENGAGE:** A Solution for EU Taxonomy Compliance

14 July 2023



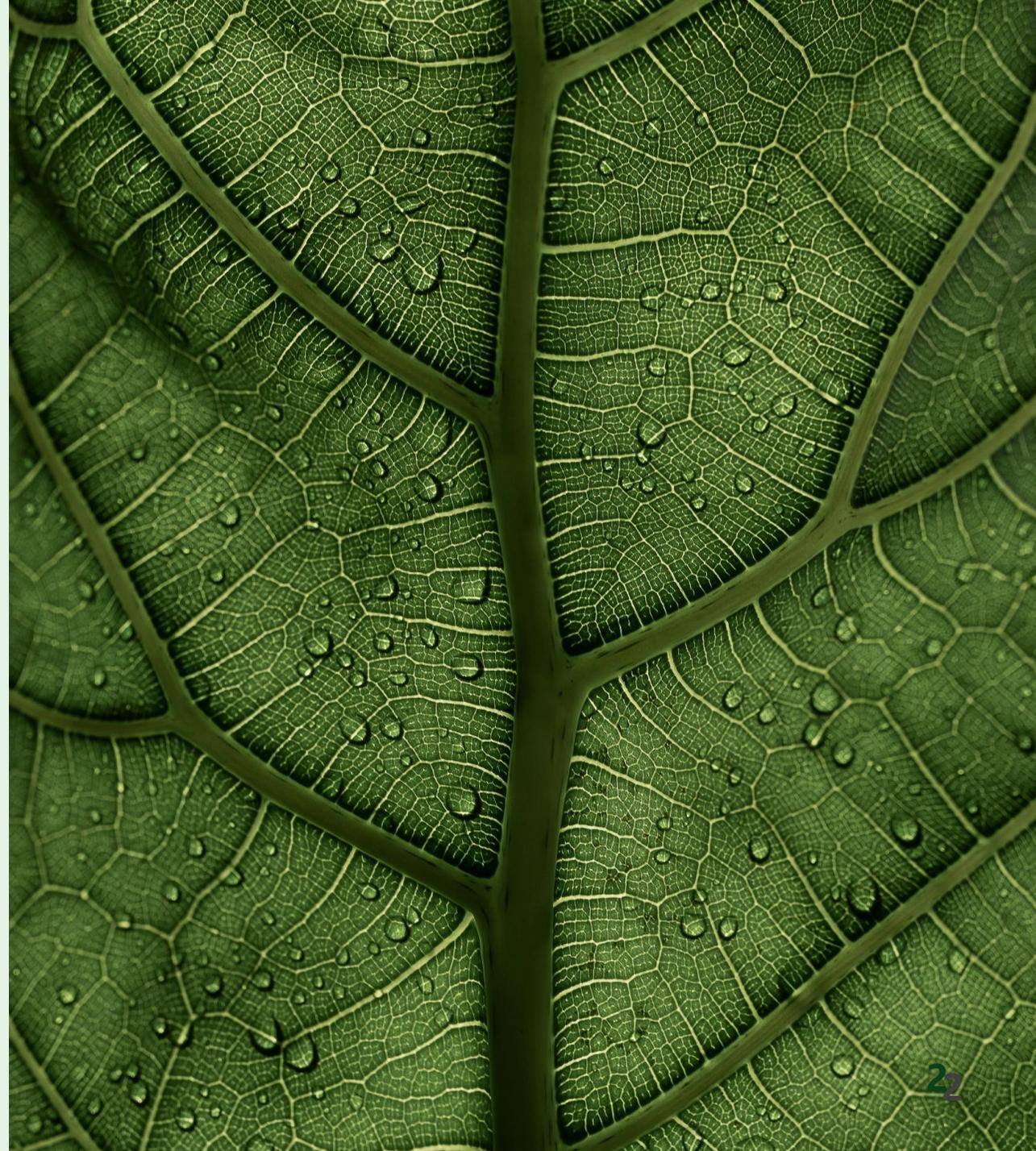
Co-funded by the
European Union





Introduction

Marco Angheben, European DataWarehouse





ENGAGE Description

- **Name:** Engage for ESG activation investments (ENGAGE)
- Co-funded by the European Union with a LIFE grant
- **Duration:** 1 November 2022 – 31 October 2025
- Six consortium partners across Europe
- **Scope:** ENGAGE aims to provide a data disclosure format solution for mortgage funding and home renovations, encompassing the key European ESG regulations.





EUROPEAN DATAWAREHOUSE

ESMA-designated Securitisation Repository and Eurosystem repository for ABS & pools of additional credit claims



IT company, developers of software solutions for the financial sector



Università
Ca'Foscari
Venezia

Pioneer university in sustainable finance programmes and research

UCI

Specialist entity in sustainable financing for mortgages and loans in the Spanish market. Leader of the Spanish pilot

woonnu

Innovative sustainable mortgage loan originator in the Dutch market. Leader of the Dutch pilot



Experts in ensuring compliance of new technologies with legal and ethical standards



Energy Efficiency for the EU Building Stock

In the EU's 27 countries there are...



445
million people



247
million dwellings



**Buildings account for
40% of EU energy use
& 36% of GHG
emissions**

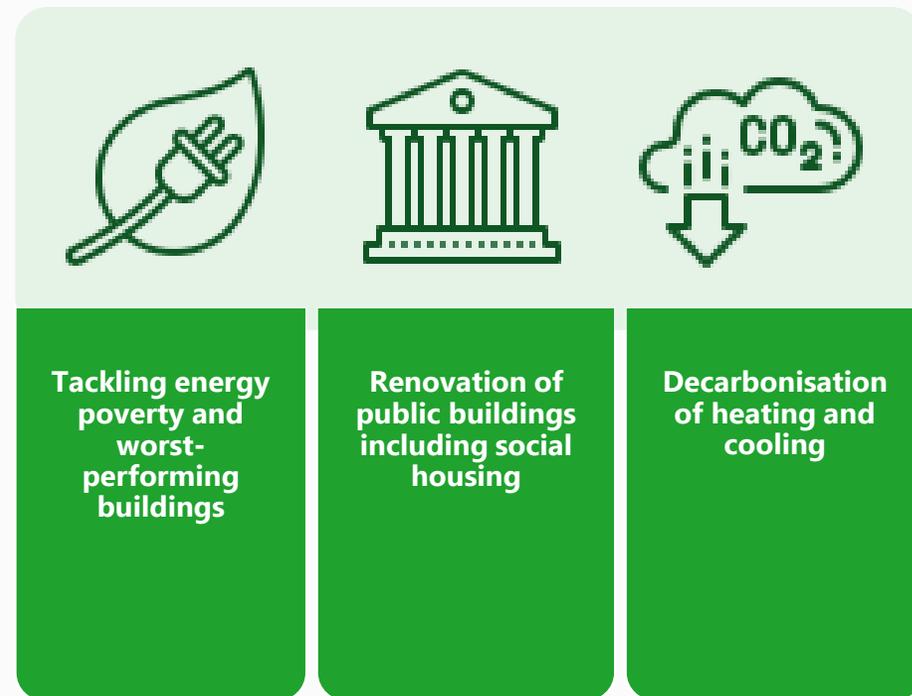
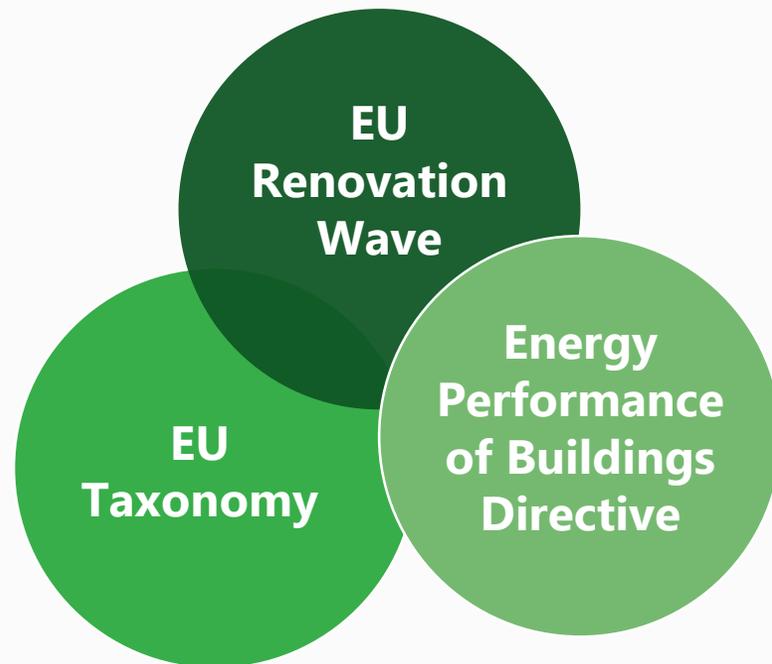
**> 220 million of
which were built
before 2001**



Source: European Commission

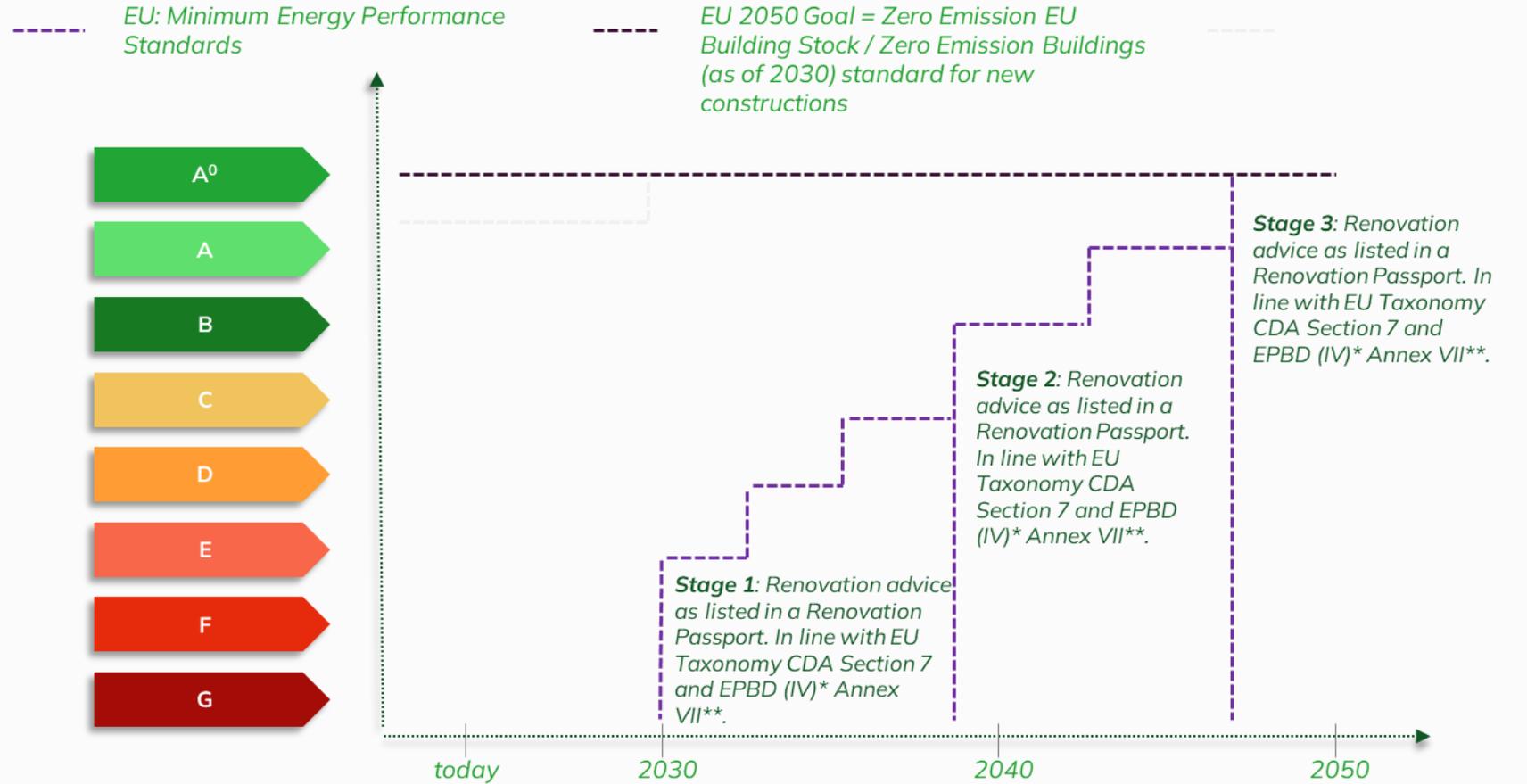


Energy Efficiency Regulations





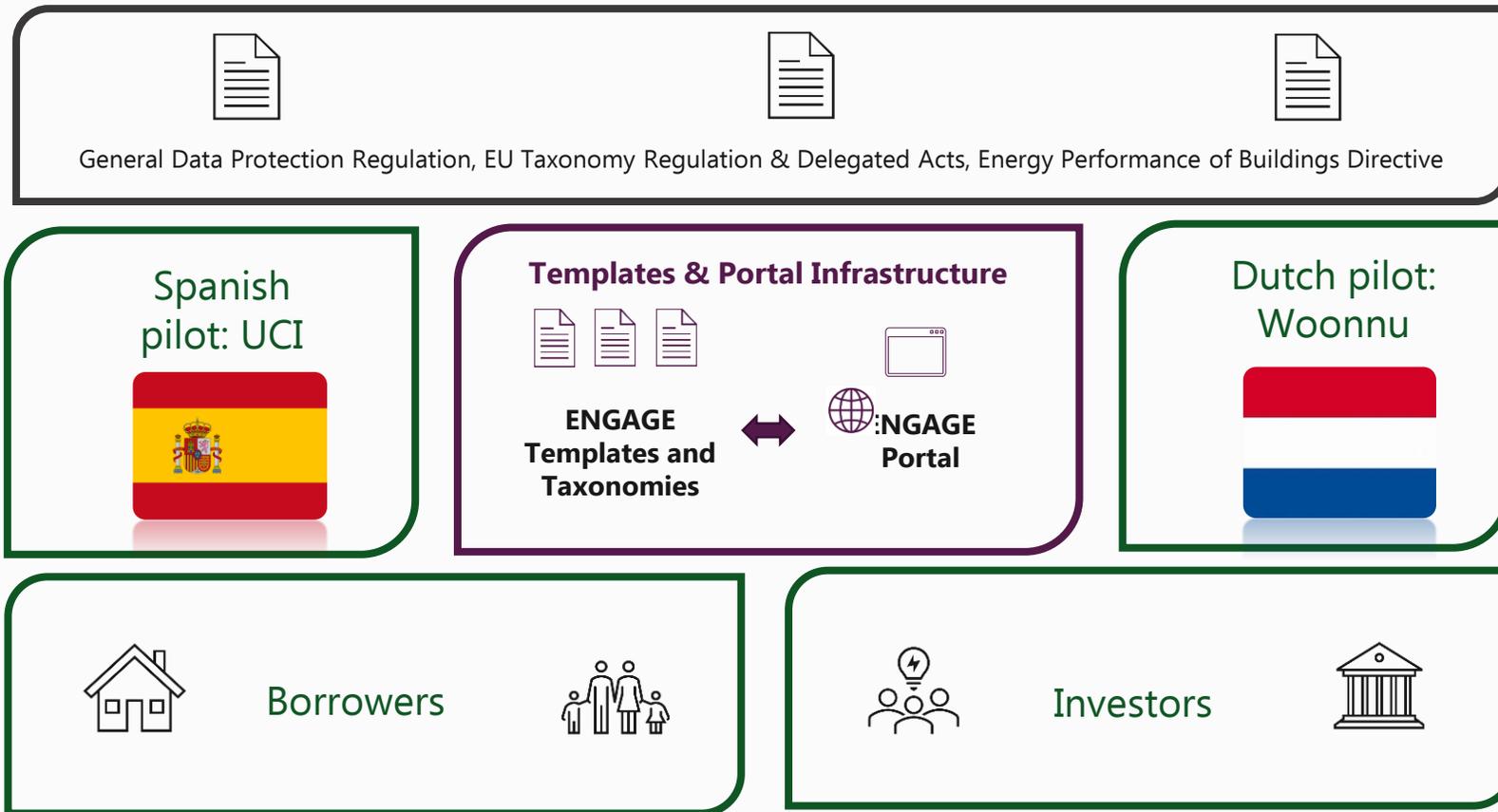
Reaching the EU 2050 Zero Emission Building Stock Target



* Which aligns with MEPS (Article 9) and national building renovation plan (Article 3).
** Annex VII of EPBD IV: Comparative methodology framework to identify cost optimal levels of energy performance requirements for buildings and building elements.
*** EPC scale as proposed in EPBD IV council proposal



ENGAGE: The High-Level Concept



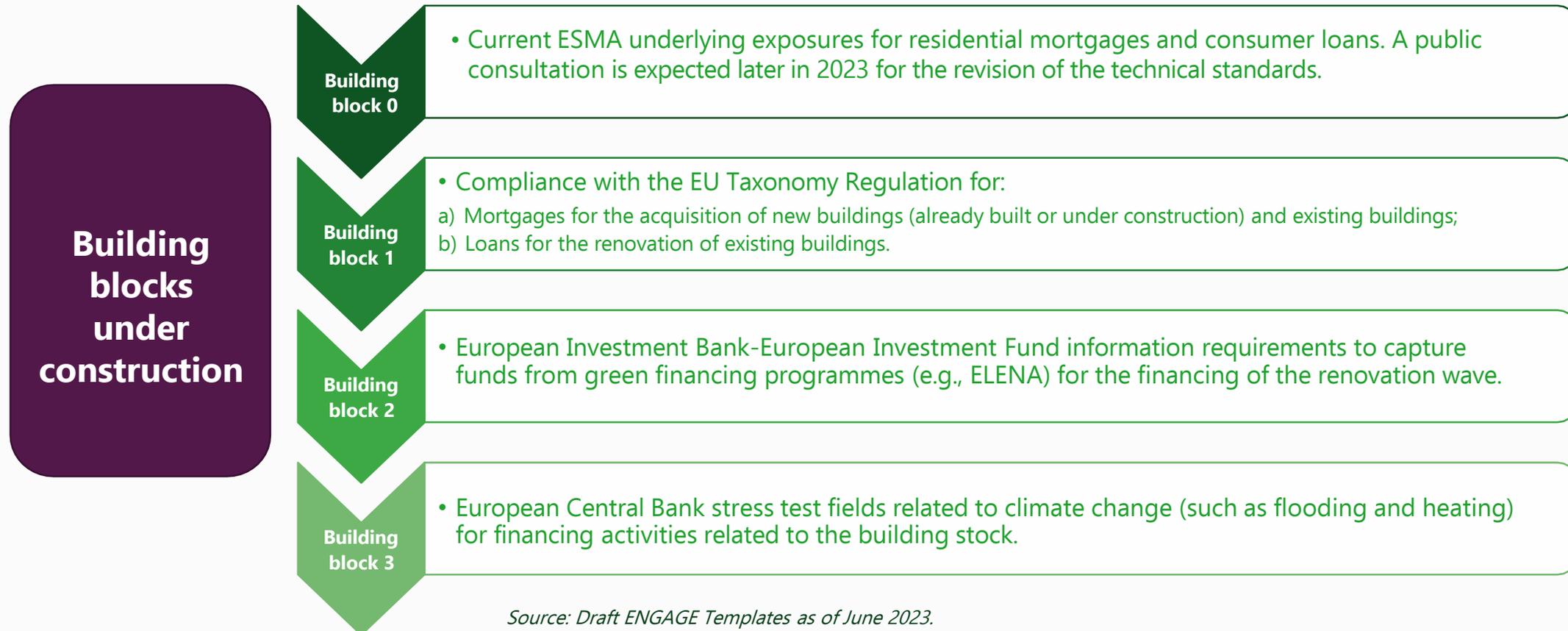


ENGAGE Templates

- ENGAGE will leverage the existing ESMA technical standards on disclosure requirements currently under revision, and more specifically:
 - Annex 2: Underlying exposures – residential real estate
 - Annex 6: Underlying exposures – consumer
- Additional fields that will be added across sections (under consideration):
 - **Documentation:** minimum social safeguards, ESG information, EU Green Bond Standard adherence.
 - **Assets - Collateral:** Energy Performance Data (EPC) including emissions and consumption, EPC issuance date, climate risk related information.
 - **Liabilities:** use of proceeds.

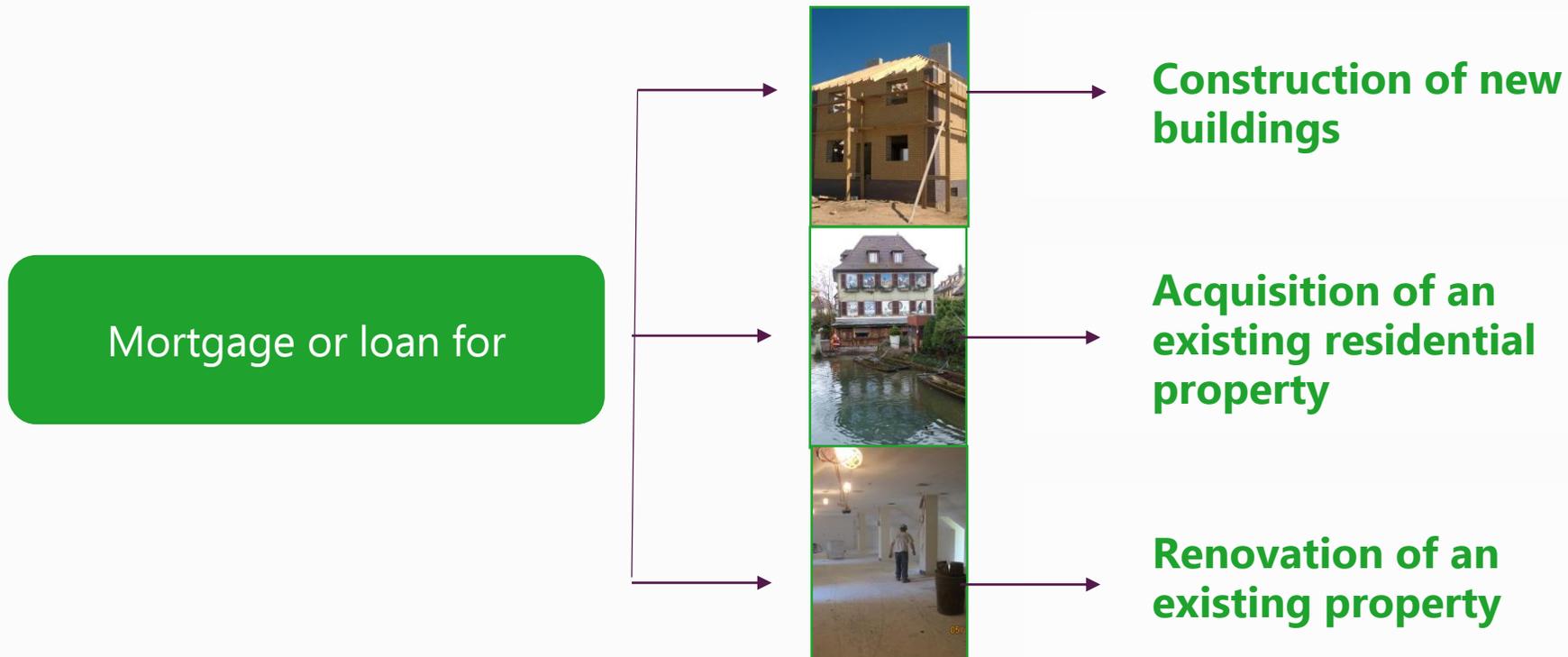


Current ENGAGE Templates Logic





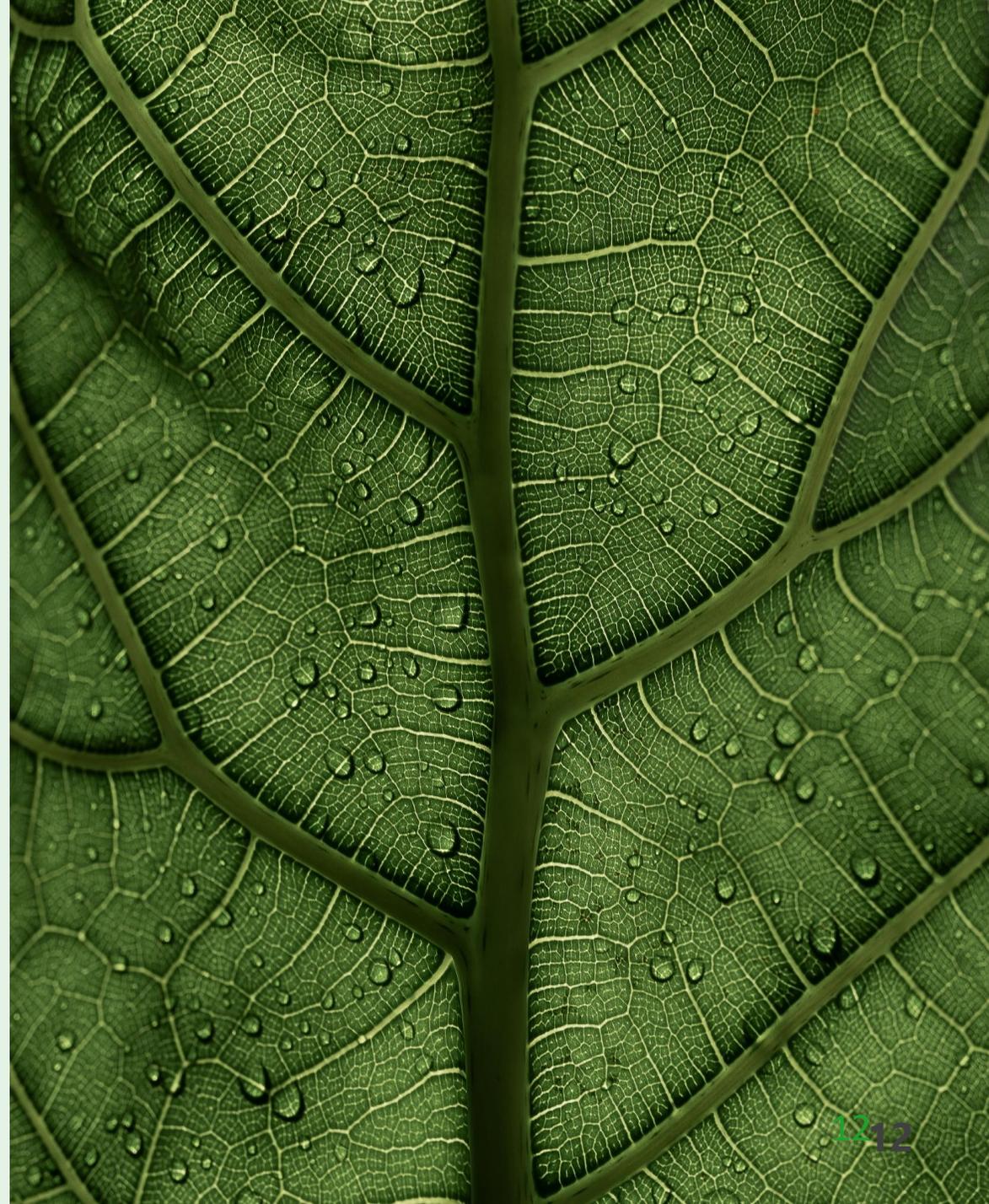
Proposed Structure for the EU Taxonomy Building Block





Enhancing Home Mortgage Credit Risk through the EU Taxonomy

Michele Costola, Ca' Foscari University





Energy Efficiency & Mortgage Default

- The literature has started to investigate the relationship between the **energy efficiency** of residential buildings and the **credit risk** of home mortgages, and evidence of this relationship does exist.
- Findings show that attribute “energy efficiency” improves the risk models in predicting the probability of default (Billio et al., 2021; Billio et al., 2022; Guind and Korhonen, 2022).
- Three potential channels:
 - **Personal Traits** of the borrowers captured by the choice of an EE building (e.g., Environmental Awareness);
 - Improvements in building performance that help free up a borrower’s **disposable income** (lower utility bills);
 - The positive effect on the dwelling value and thus on the **loan-to-value ratio**.



Measuring the Probability of Default

- The probability of default for a borrower can be estimated using information that incorporates various factors, including borrower's information and other controls such as the geographical area, real estate data, and macroeconomic variables.
- Energy efficiency data has recently been included as well. For instance, if we consider the logistic regression: $P(\text{Default}) = \text{logit}^{-1} (\beta_0 + \beta_{EE} \cdot EE + \beta_X \cdot X + \beta_Z \cdot Z)$
- Where:
 - EE represents the energy efficiency data,
 - X represents the borrower's information,
 - Z represents other control variables, and
 - β_0 β_{EE} β_X β_Z are the estimated coefficients.





Energy Efficiency Data (I)

- The measurement of energy efficiency data in default studies has primarily centred around the **Energy Performance Certificate** (EPC) rating classes.
- The current approach, which primarily focuses on EPC **rating classes**, if available, provides a general indication of a property's energy efficiency. However, it may not capture the **nuanced differences** that exist within each class.
- To overcome this limitation, the **EU Taxonomy** offers an opportunity to improve the data collection by considering more **granular information** in a revised the template.



Energy Efficiency Data (II)

- By incorporating additional factors, a more **comprehensive and accurate assessment** of energy efficiency can be achieved.
- This enhancement of energy efficiency data is not only relevant for research purposes but also has significant implications for the **financial industry**, including **banks, financial intermediaries**, and other stakeholders.
- In the financial industry, accurate assessment of **default risk** is crucial for making informed lending decisions.



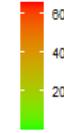
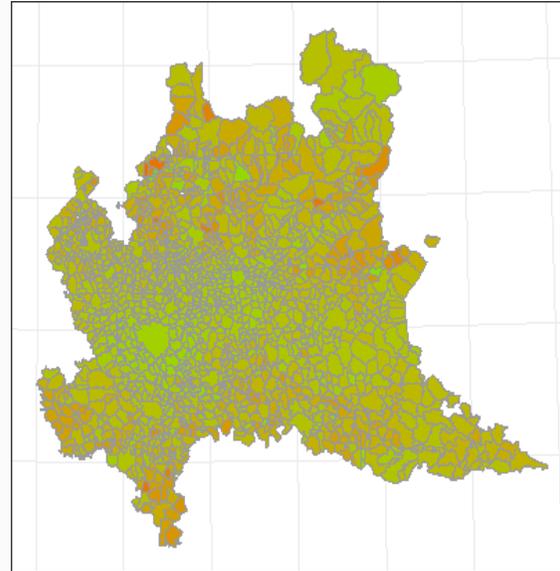
Energy Efficiency Data (III)

- Incorporating more detailed energy efficiency data can provide a **better understanding** of the underlying **risk associated** with mortgage loans.
- By considering granular energy efficiency information, financial institutions can **refine their risk models** and develop more accurate default probability estimates. This, in turn, enables them to make more precise pricing decisions and effectively manage their loan portfolios.
- Improved data collection and standardized frameworks, such as the EU Taxonomy, facilitate **comparability across studies** and enhance the industry's ability to assess default risk associated with energy efficiency.

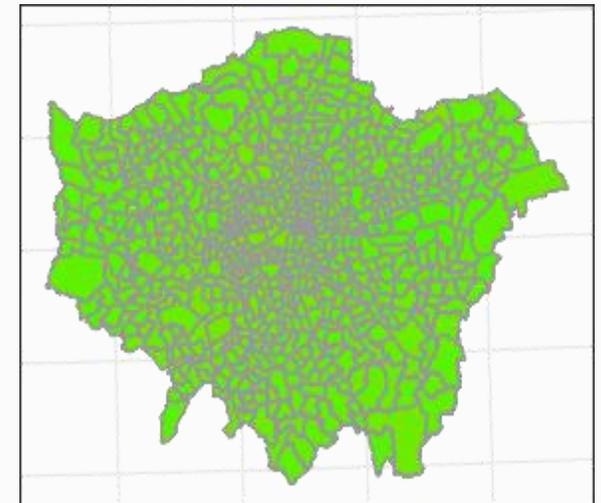
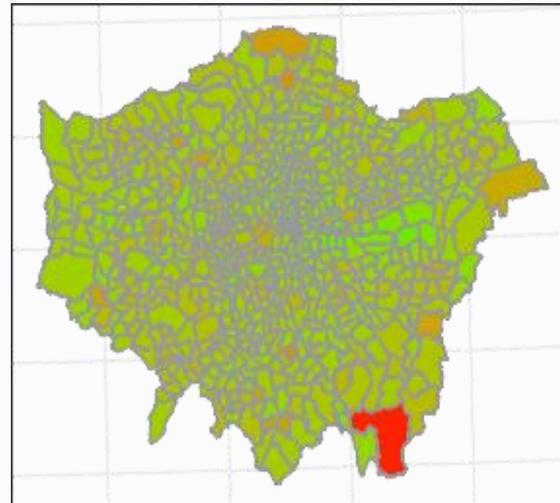
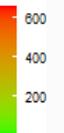
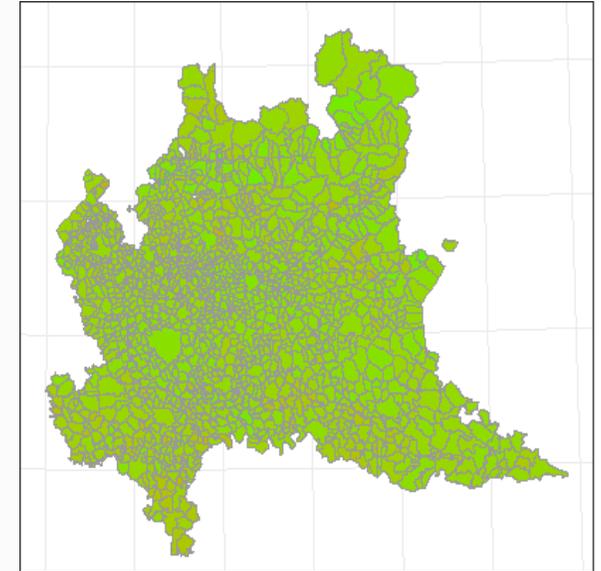


ENGAGE Scenario Analysis

Actual



Forecast based on ECP data





Conclusions

- The inclusion of **energy efficiency information**, such as the **Energy Performance Certificate (EPC)**, can provide valuable insights into the underlying risk associated with the properties.
- The **EU Taxonomy** presents an opportunity to enhance the **credit risk** measurement incorporating more detailed and granular data.
- Incorporating additional factors, such as specific energy-saving measures and building characteristics, can lead to a more **comprehensive and accurate assessment** of energy efficiency.
- Improved energy efficiency data will benefit the **monitoring activity** of the existing European building stock and will have significant implications for the **financial sector**, enabling better **risk management** and **lending decisions**.



Website:

engage4esg.eurodw.eu/



Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

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