



Trends towards the simplification of ESG reporting

Banque de France, Paris
Friday, 9 January 2026



Co-funded by the
European Union





Introduction of the ENGAGE for ESG initiative

Marco Angheben

European DataWarehouse





Energy Poverty in France

Arrears on utility bills	Inability to keep house adequately warm	Dwelling with leaking roof, damp walls or rotten frames
7.5 %	12.1 %	21.1 %

- **7.5%** of the total population was having arrears on their utility bills.
- **12.1%** of the total population was not able to keep their home adequately warm over the cold periods of the year.
- About **21.1%** of the total population was living in a dwelling with leaking floor, damp walls or rotten windows, frames or floor.

Source: Data as of 2023, [European Building Stock Observatory](#)



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ENGAGE for ESG initiative

EUROPEAN
DATAWAREHOUSE

 **HYPOPORT**

UCI

woonnu



Università
Ca'Foscari
Venezia


DEXAI
ARTIFICIAL ETHICS

- Launched in November 2022 and co-funded by the European Union with a LIFE grant.
- The ENGAGE for ESG initiative aims to provide a simple solution for ESG reporting for mortgages and home renovation loans.



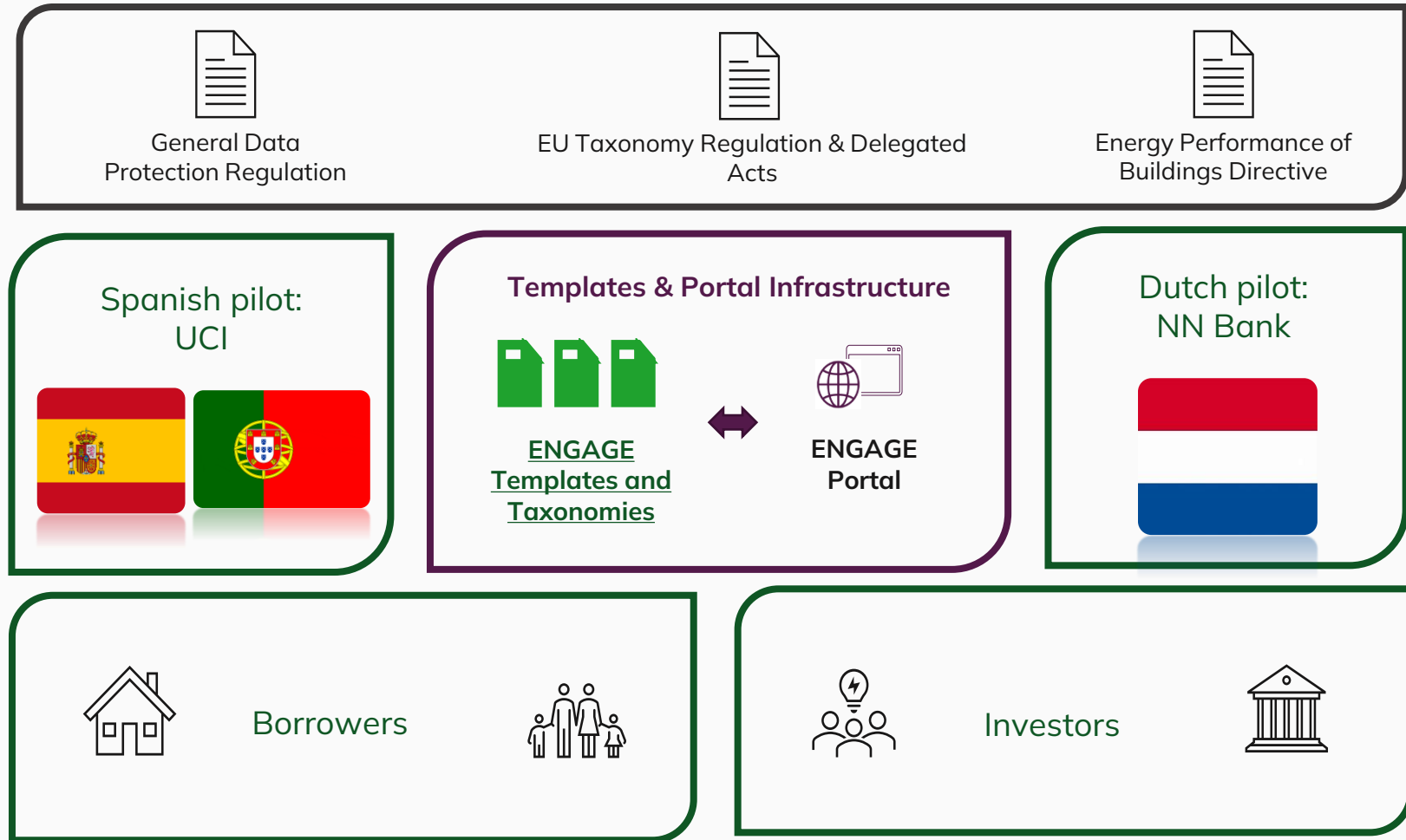
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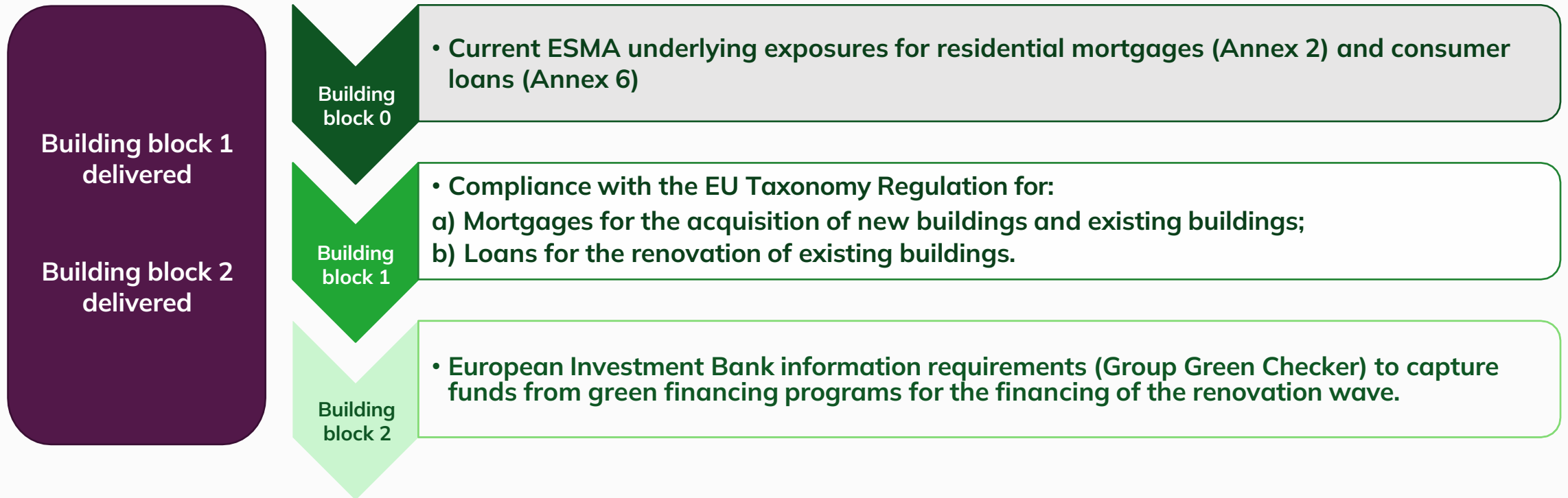
ENGAGE for ESG initiative description

Two main pillars:

1. A **disclosure template** for residential real estate data;
2. A **portal** to assess EU Taxonomy alignment and data quality.



The ENGAGE Templates: structure





The ENGAGE proposal: a limited number of data fields to check EU Taxonomy compliance

Green: the minimum data needed for SCC checks

Purple: minimum data for the DNSH check

Blue: PCAF / CO2 financed emissions

	FIELD CODE	CONTENT TO REPORT	Section 7.7.1 - EPC class A	Section 7.7.1 - Top 15%	Section 7.7.2 10% lower NZEB
Identifiers	EREC1	Unique Identifier			
	EREC2	Underlying Exposure Identifier Building block 0			
	EREC3	Collateral Identifier Building block 0			
	EREC4	General Activity Designation	Y	Y	Y
SCC 7.7	EREC5	Construction Year	Y	Y	Y
	EREC6	Construction permit application date			
	EREC7	Energy Performance Certificate (EPC) Class	Y		
	EREC8	Estimated or officially produced EPC	Y		
	EREC9	Issuance date of most recent EPC	Y		Y
	EREC10	EPC original Validity	Y		
	EREC11	EPC Methodology			
	EREC12	Energy Performance Certificate (EPC) Status			
	EREC13	EU-Equivalent EPBD-Regime			
	EREC14	Primary Energy Demand (PED) of the building			Y
	EREC15	Estimated or officially produced Primary Energy Demand (PED)			
	EREC16	Primary Energy Demand (PED) Based on Reference Building			
	EREC17	Primary Energy Demand (PED) Based on Building or Building unit			
	EREC18	Nearly zero-energy building (NZEB) threshold			Y
	EREC19	Climatic zone code			
	EREC20	Geographic Region - climatic zone			
	EREC21	Building unit in top 15% indicator		Y	
	EREC22	Top 15% Explanatory Variable			
	EREC23	Top 15% Object Reference Value		Y	
	EREC24	Top 15% Object Threshold Value		Y	
DNSH	EREC25	DNSH EO2 Indicator	Y	Y	Y
	EREC26	DNSH EO3 Indicator			
	EREC27	DNSH EO4 Indicator			
	EREC28	DNSH EO5 Indicator			
	EREC29	DNSH EO6 Indicator			
Renovation SCC	EREC30	Balance for renovation of existing buildings			
	EREC31	Balance of IMR of EE equipment			
	EREC32	Balance of IMR of RE equipment			
	EREC33	Balance of EE equipment			
	EREC34	Balance of RE equipment			
	EREC35	Large new constructions			
Financed Emissions	EREC36	Financed CO2-emission	Y	Y	Y
	EREC37	Surface Area	Y	Y	Y
	EREC38	GHG Data Score	Y	Y	Y
	EREC39	GHG Emission Factor	Y	Y	Y

11

10

10



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The ENGAGE Portal: high-level overview

- The ENGAGE Portal enables lending institutions to **upload and assess the alignment of their loan portfolios with the EU Taxonomy**.
- The Portal incorporates detailed **loan and collateral level checks**.
- Access to multiple stakeholders (internal reporting, rating agencies, investors, regulatory supervisors, etc.) upon invitation.
- The ENGAGE Portal allows users to assess multiple portfolios based on the EU Taxonomy.
- The Portal output is twofold:
 1. The **data quality feedback**;
 2. The **EU Taxonomy alignment report**.
- **Trial access** available subject to a standard legal arrangement (available upon request).

The screenshot displays the ENGAGE Portal interface. At the top, the ENGAGE logo is on the left, and navigation links 'LOG OFF | GET IN TOUCH | [LinkedIn icon] | CHANGE PASSWORD' are on the right. Below the logo, 'Programs' and 'Administrator' are listed. The main header is 'PROGRAMS' with a 'HOME | PROGRAMS' breadcrumb. A sidebar on the left shows a dropdown menu with 'Hypoport B.V.' selected, and below it, 'ENGAGE', 'Unión de Créditos Inmobiliarios', and 'Woonnu'. The main content area shows 'HYPOPORT B.V. ENGAGE' and a dropdown for 'ENGAGE PILOT PORTFOLIO'. Below this, a table lists 'Asset type' (RMBS), 'Country' (The Netherlands), 'Status' (Current), and 'Closing date' (11-2024). There is a section for 'ENGAGE Data Templates' with a file 'PoolABC_2024-10-20.zip', a 'Download report' button, and a date '10-2024'. An 'Add file' button is at the bottom right. The footer is divided into three columns: 'ENGAGE SOLUTION' (FAQS, DISCOVER ENGAGE, GET IN TOUCH), 'LEGAL INFO' (PRIVACY POLICY, TERMS & CONDITIONS, IMPRINT), and 'LOGIN AREA' (LOGIN, LOGIN REQUEST). At the bottom left is the 'Life' logo with the text 'Co-funded by the European Union'. At the bottom right is the ENGAGE logo and copyright text: '© Copyright 2022-2024 Engage for ESG Activation Investments. All Rights Reserved.'



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ENGAGE EU Taxonomy alignment report

Portfolio Name	Example Portfolio 2024
Portfolio Date (DD-MM-YY)	01-08-2024
Total # of Loans	1300
Total # of Building Units	1100
Total Balance	€444,600,000.00
TSC passed %	50.94%

			TSC assessment*								
Section	Economic Activity	Subsection	SCC (check passed)			DNSH* (check) passed			TSC Passed (SCC + DNSH)		
			# of loans	# of Building Units	Balance	# of loans	# of Building Units	Balance	# of loans	# of Building Units	Balance
7.7(1)	Acquisition and ownership of buildings	Buildings built before 31 December 2020: building has at least an Energy Performance Certificate (EPC) class A.	460	411	€133,400,000.00	414	370	€120,060,000.00	411	363	€119,190,000.00
7.7(1a)		Buildings built before 31 December 2020 - Alternative: building is within Top 15%	392	301	€113,680,000.00	353	271	€102,370,000.00	349	301	€101,210,000.00
7.7(2)		Buildings built after 31 December 2020	23	22	€6,670,000.00	21	20	€6,090,000.00	21	22	€6,090,000.00
Total			875	734	€253,750,000.00	788	661	€228,520,000.00	781	686	€226,490,000.00

This block displays the Technical Screening Criteria (TSC) assessment, per Economic (Sub) Activity. This section of the report displays the absolute number of loans, building units and corresponding balance that passed these checks.





ENGAGE EU Taxonomy alignment report

Portfolio Name	Example Portfolio 2024
Portfolio Date (DD-MM-YY)	01-08-2024
Total # of Loans	1300
Total # of Building Units	1100
Total Balance	€444,600,000.00
TSC passed %	50.94%

TSC pass Total Portfolio

SCC (check passed)			DNSH (check) passed			TSC Passed (SCC + DNSH)		
% of all loans	% of total Building u	% of total Balance	% of total loans	% of total Building u	% of total Balance	% of total loans	% of total Building u	% of total Balance
35.38%	37.36%	30%	31.85%	33.64%	27%	31.62%	33.00%	27%
30.15%	27.36%	26%	27.15%	24.64%	23%	26.85%	27.36%	23%
1.77%	2.00%	2%	1.62%	1.82%	1%	1.62%	2.00%	1%
67.31%	66.73%	57.07%	60.62%	60.09%	51.40%	60.08%	62.36%	50.94%

This block displays the Technical Screening Criteria (TSC) assessment, per Economic (Sub) Activity. This section of the report displays the relative (vis-à-vis the portfolio) number of loans, building units and corresponding balance that passed these checks.





ENGAGE for ESG: a tool for investors, rating agencies, regulators, and auditors

✓ The ENGAGE solutions help you:



Gain insights into RMBS, covered bonds, and residential real estate mortgage and home renovation loan portfolios



Collect granular ESG information to produce your ESG ratings



Access granular information to prepare reports and policy recommendations



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Free ENGAGE trial period until July 2026

Request
ENGAGE
Templates

- Version 1.2 of the ENGAGE Templates available now through [Request for Access to the ENGAGE Templates](#)
- **80 institutions** have requested access to the ENGAGE Templates

ENGAGE
Demonstration

- The ENGAGE Team is available for clarifications

Submission to
ENGAGE
Portal

- Signature of a [standard legal arrangement](#) for the safe processing of the data
- Possibility to submit the ENGAGE sample files various times enriching the information

Output
Reports

- For each sample file submission two reports are generated: 1) a data quality report; 2) an EU Taxonomy alignment report.





Stay Informed

- Scan the QR code to stay up to date on ENGAGE for ESG with all initiative updates, research insights, and upcoming events;
- Visit our [website](#);
- And follow us on [LinkedIn](#)!





The ENGAGE experience of UCI and NN Bank

Philippe Laporte (UCI)

Martijn Breed (NN Bank)





UCI At-A-Glance

More than 35 years of experience

Founded in 1989 and presence in Spain, Portugal and Brazil.

Our way of work

Transparency, quality, responsibility, accessibility and proximity define the way in which UCI works, with over 190,000 customers having placed their trust in the entity.

Recognised in the Real Estate Industry

A main recognised actor in the Real Estate Intermediation Industry.

Spain

Portugal

Brasil

Owned equally
by BNP Paribas
Group and Banco
Santander.

UCI





Since 2017, we've been boosting sustainability through a clear ESG roadmap

Aligned with the European Green Deal and the Paris Agreement, we've focused on helping to decarbonize the real-estate stock by promoting energy-efficient renovations through innovative financial solutions such as the Green Mortgage and condominium Loans.

We are leaders in the Spanish RE sustainable finance market.

Our approach demonstrates that achieving environmental goals is, at the same time, a responsible and profitable business model.





More than 30 years of experience in the Iberian Securitisation experience

More than € 17 bn placed issues, among which 16.6 bn of Spanish RMBS - the Prado and previous UCI programs- and 0.7 bn of Portuguese RMBS – the Belem programs.

All UCI RMBS transactions are available on European DataWarehouse.

Fondo de Titulización
RMBS GREEN PRADO XI
PROSPECTUS
€ 490,000,000

	up to the Step-Up Date (included)	from the Step-Up Date (excluded)	DBRS	Fitch
Class A: Secured Green Standard Bonds € 352,800,000	*EURIBOR 3M + 0.60 %	**EURIBOR 3M + 1.10 %	AAA(sf)	AAA(sf)
Class B Notes: Secured Green Standard Bonds € 78,400,000	*EURIBOR 3M + 1.00 %	**EURIBOR 3M + 1.00 %	AA(high) (sf)	AA+(sf)
Class C: € 26,900,000	2.00%		A(high) (sf)	A+(sf)
Class D: € 31,900,000	3.00%		NR	NR

* Floating Rate Notes: Eurobor means: (i) until the Step-up Date (included), the Reference Interest Rate, and (ii) from the Step-up Date onwards, the Capped Reference Interest Rate.
** Eurobor: Capped Reference Interest Rate is the lower of: (i) the Reference Interest Rate, and (ii) 6.00 per cent. per annum.

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**UNIÓN DE CRÉDITOS INMOBILIARIOS S.A.,
ESTABLECIMIENTO FINANCIERO DE CRÉDITO**

UCI

JOINT LEAD MANAGERS AND JOINT LEAD ARRANGERS AND GREEN AGENTS

BNP PARIBAS **Santander**
Corporate & Investment Banking

Back Up Servicer Facilitator **Santander** Paying Agent and Fund Account Provider **BNP PARIBAS**

Fund managed by:
 SANTANDER DE TITULIZACIÓN, S.G.F.T., S.A.

Prospectus registered in the Registers of the Comisión Nacional del Mercado de Valores (CNMV) on 23rd of March 2023

Term Verification Checklist
Fondo de Titulización
RMBS GREEN PRADO XI

PRADO COLLATERALISED SECURITIES FUND S.A.S.
07 March 2023

CRR ASSESSMENT
Fondo de Titulización
RMBS GREEN PRADO XI

PRADO COLLATERALISED SECURITIES FUND S.A.S.
07 March 2023

LCR ASSESSMENT
Fondo de Titulización
RMBS GREEN PRADO XI

PRADO COLLATERALISED SECURITIES FUND S.A.S.
07 March 2023

European Securities and Markets Authority

Deal included in ESMA's list of notified STS Securitisations

Deal reported in European Datawarehouse, Securitisation Repository under the EU Securitisation Regulation



With the Highest Score



Deals / RMBSE000088101620237
RMBS GREEN PRADO XI

Information Data & Documents Insights ECB Template ESMA Template Documents

Securitisation Identifier: 95980020140005209368N202301 | Selected PCD: 2023-09-13

File Name & Size Limit | Upload New | Publish

Download Feedback

Score
A1
ESMA Score

A
Data Quality Score
(Only visible to Data Owners & Providers)

Submission Status:
Your files have been Accepted with Warnings (WARN)

Next Steps:
No further action required.

Processing Steps

- Underlying Exposures (Published)
- Signature Validation
- File Validation
- Data Extraction
- PCD
- Trigger Data Processing Pipeline

Quick Statistics

ND Threshold Report

Asset Class	Threshold 1	Threshold 2	Result
Residential	0 / 30	0 / 30	ACPT

Performance Data

UCI has consistently achieved the highest score in every quarterly assessment for all its uploaded RMBS deals since the ESMA templates became mandatory

Deals / RMBSE00008810120225
RMBS BELEM No.2

Information Data & Documents Insights ECB Template ESMA Template Documents

Securitisation Identifier: 43340000LJ0E0V0Y0CAN202201 | Selected PCD: 2023-08-31

File Name & Size Limit | Upload New | Publish

Download Feedback

Score
A1
ESMA Score

A
Data Quality Score
(Only visible to Data Owners & Providers)

Submission Status:
Your files have been Accepted with Warnings (WARN)

Next Steps:
No further action required.

Processing Steps

- Underlying Exposures (Published)
- Signature Validation
- File Validation
- Data Extraction
- PCD
- Trigger Data Processing Pipeline

Quick Statistics

ND Threshold Report

Asset Class	Threshold 1	Threshold 2	Result
Residential	0 / 30	0 / 30	ACPT

Performance Data

Deals / RMBSE000088101202302
RMBS GREEN BELEM No.1

Information Data & Documents Insights ECB Template ESMA Template Documents

Securitisation Identifier: 43340000LJ0E0V0Y0CAN202301 | Selected PCD: 2023-08-31

File Name & Size Limit | Upload New | Publish

Download Feedback

Score
A1
ESMA Score

A
Data Quality Score
(Only visible to Data Owners & Providers)

Submission Status:
Your files have been Accepted with Warnings (WARN)

Next Steps:
No further action required.

Processing Steps

- Underlying Exposures (Published)
- Signature Validation
- File Validation
- Data Extraction
- PCD
- Trigger Data Processing Pipeline

Quick Statistics

ND Threshold Report

Asset Class	Threshold 1	Threshold 2	Result
Residential	0 / 30	0 / 30	ACPT

Performance Data

Deals / RMBSE000088101202304
FT RMBS PRADO X

Information Data & Documents Insights ECB Template ESMA Template Documents

Securitisation Identifier: 95980020140005209368N202301 | Selected PCD: 2023-09-13

File Name & Size Limit | Upload New | Publish

Download Feedback

Score
A1
ESMA Score

A
Data Quality Score
(Only visible to Data Owners & Providers)

Submission Status:
Your files have been Accepted with Warnings (WARN)

Next Steps:
No further action required.

Processing Steps

- Underlying Exposures (Published)
- Signature Validation
- File Validation
- Data Extraction
- PCD
- Trigger Data Processing Pipeline

Quick Statistics

ND Threshold Report

Asset Class	Threshold 1	Threshold 2	Result
Residential	0 / 30	0 / 30	ACPT

Performance Data

Deals / RMBSE000088101202303
RMBS PRADO VIII

Information Data & Documents Insights ECB Template ESMA Template Documents

Securitisation Identifier: 95980020140005209368N202301 | Selected PCD: 2023-09-08

File Name & Size Limit | Upload New | Publish

Download Feedback

Score
A1
ESMA Score

A
Data Quality Score
(Only visible to Data Owners & Providers)

Submission Status:
Your files have been Accepted with Warnings (WARN)

Next Steps:
No further action required.

Processing Steps

- Underlying Exposures (Published)
- Signature Validation
- File Validation
- Data Extraction
- PCD
- Trigger Data Processing Pipeline

Quick Statistics

ND Threshold Report

Asset Class	Threshold 1	Threshold 2	Result
Residential	0 / 30	0 / 30	ACPT

Performance Data

Deals / RMBSE000088101202304
RMBS PRADO VII

Information Data & Documents Insights ECB Template ESMA Template Documents

Securitisation Identifier: 95980020140005209368N202301 | Selected PCD: 2023-09-08

File Name & Size Limit | Upload New | Publish

Download Feedback

Score
A1
ESMA Score

A
Data Quality Score
(Only visible to Data Owners & Providers)

Submission Status:
Your files have been Accepted with Warnings (WARN)

Next Steps:
No further action required.

Processing Steps

- Underlying Exposures (Published)
- Signature Validation
- File Validation
- Data Extraction
- PCD
- Trigger Data Processing Pipeline

Quick Statistics

ND Threshold Report

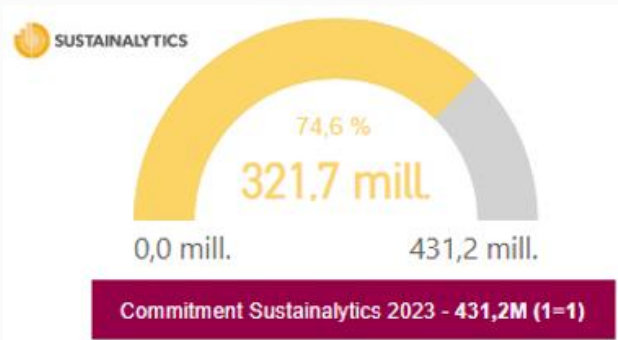
Asset Class	Threshold 1	Threshold 2	Result
Residential	0 / 30	0 / 30	ACPT

Performance Data



Delivery Status of Commitments

Active commitments (as of Nov-25)

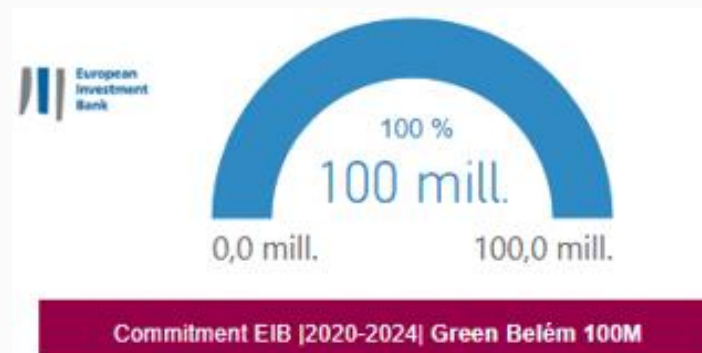


Completed commitments

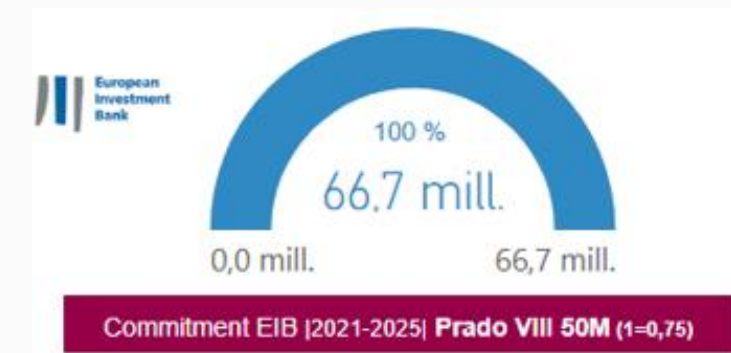
Completed Q4. 2023



Completed Q4. 2023



Completed Q4. 2024





With the backing of our investors, we developed a strategy based on solid commitments to launch and expand the Green Plan within the real-estate sector, with the aim of growing our business.

Green Belém

In 2020, we reached an agreement with EIB for the first issuance designed to boost our Green mortgage origination in Spain and Portugal.

Green portfolio

We are expanding our Green portfolio, with around 25% of new business origination aligned with the EU Taxonomy.

New RMBS Issue in Portugal:



RMBS Green Belém No.1



Investors

There is strong market appetite for sustainable products.

We structured and launched the first green securitisation fund (RMBS Belém 1), STS, Sustainability-labelled, and part of the EMF's EEMi initiative in collaboration with the EIB.

“Use of proceeds”.

A shift in the way mortgages and loans are marketed, ensuring they are aligned with sustainable criteria..

Business

UCI



UCI & EIB Journeys

May '20

EIB and Unión
de Créditos Inmobiliarios:
Portuguese RMBS Green
Belém No.1

Euronext 2021
Sustainable
Finance award



April '21

EIB and Unión
de Créditos Inmobiliarios:
Spanish RMBS Prado VIII

June '22

The European Commission
and EIB provide UCI with
€2.6 M to mobilize €46.5 M
for energy efficient housing.
ENGAGE for ESG project is
launched



March '23

Spain and Portugal: EIB
Group and ICO invest in UCI
securitisation fund (RMBS
Green Prado XI) for
renovating and building
residential homes using
sustainable criteria





The UCI Experience: Benefits and Challenges



BENEFITS

- Serves for **self-assessment** and to verify the percentage of information we have about these relevant points.
- **Enhances our data quality and accuracy.**
- Increases our **market visibility and reputation.**
- The Templates **mitigate our reporting process operational risk.**
- Gives us leverage to ask Spanish and Portuguese authorities to update mandatory property information.
- **Transparency, standardization, simplification,** EU taxonomy and EPBD aligned



CHALLENGES

The Spanish challenge is to release to the financial sector information needed to calculate certain classifications.

Spanish public information about the energy certification of buildings can be found at <https://www.miteco.gob.es/>.

The **Portuguese challenge** is aligning our internal data systems and processes with the ENGAGE Templates.

This requires an investment in IT infrastructure and human resources to map, extract, transform, and load our data into the ENGAGE Templates.

Portuguese public information about the energy certification of buildings can be found at <https://www.sce.pt/>.



Relevant case studies





Traffic Lights Classification



Economic Activity information	General Activity Designation	Construction Year	Top15 Denominator	Top15_Explanatory Variable	Top15 Methodology Description	Building unit in top-15% indicator	Top15_Object Reference Value	Energy Performance Certificate (EPC) class	Energy Performance Certificate (EPC) Validity Length
Energy Performance Certificate (EPC) Status	Primary Energy Demand (PED) of the building	Primary Energy Demand (PED) Based on Building or Building unit	Top15 Document Geographic Scope	Top15 Numerator	Description on how Minimum Safeguards are complied with	Estimated or officially produced (EPC)	Certificate (EEU-Equivalent EPC) Method / EPBD-Regime	Issuance date of most recent available (EPC) registration	Energy Performance Certificate (EPC) Methodology
Climatic zone code	Geographic Region - Climatic zone	Estimated or officially produced Primary Energy Demand (PED)	URL towards MSS Issuer Statement	Environmental Objective	Link alignment with the OECD Guidelines for Multinational Enterprises		Nearly zero-energy building (NZEB) threshold	Construction permit application date	
Top15_Document URL	Top15_Document Issuance Date	Top15_Object Threshold Value	Link towards UN Guiding Principles on Business and Human Rights	Link towards eight fundamental conventions	Top15_Document Name		Waiting for a unique definition/ Unification of criteria	Not available Some of the data was extracted manually for the case studies	

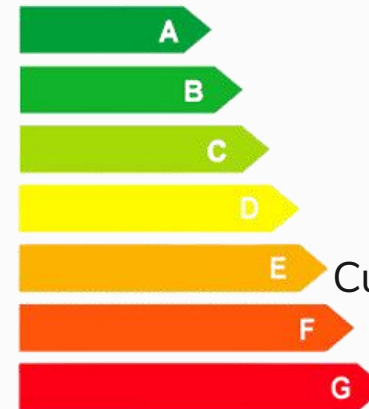


Building in Madrid

- External thermal insulation system (ETICS) on façades and courtyard walls.
- Accessibility improvements and conservation works in the ground floor entrance hall.



- Which section of the ENGAGE Templates is most relevant in this case and how do we see the actual data in the ENGAGE Templates?



Current EPC

Previous EPC





Building in Barcelona

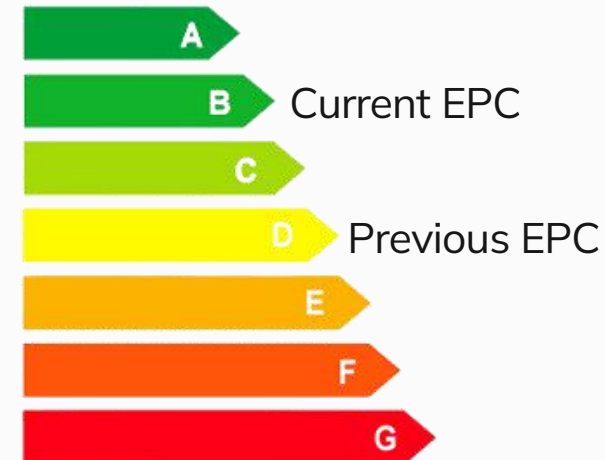
- Repair of deficiencies and improvement of energy efficiency on the main façade, courtyard, party wall, general roof, common terraces, and attic.
- Sanitation system installation.





Building in Valencia

- Structural rehabilitation: reinforcement of secondary structural elements and waterproofing of the roof.
- Replacement of windows and doors in common areas and the attic apartment (owned by the homeowners' association), external insulation of all façades, insulation of the main roof and rooftop utility room, and installation of solar panels for photovoltaic energy.
- Conservation repairs and accessibility improvements.





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Public-private collaboration, key of success/OSS





NN Bank - Introduction



- Introduction: Martijn Breed, 50yrs old, recently from C -> A+++
- 25 years of experience in the financial sector
- 20 years of experience in structured finance
- Started at NN Bank in 2012 as senior legal counsel
- Co-founder of Woonnu, the sustainable mortgage label of Nationale-Nederlanden Bank
- Current focus on ESG-related topics
- Representing NN Bank in several external ESG committees





Only a limited number of data fields are actually needed!

Only a limited number of data fields are actually needed!

In this example, of the ENGAGE v1.2 EREC file we see that only a limited number of data fields is needed for the economic activity 7.7 assessment checks:

- In green the minimum data needed for SCC checks
- In purple the DNSH check
- In light blue the PCAF / CO2 financed emissions

	FIELD CODE	CONTENT TO REPORT	Section 7.7.1 - EPC class A	Section 7.7.1 - Top 15%	Section 7.7.2 10% lower NZEB	DSA P&P 2.1	Available in EP-Online
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	EREC6	Construction permit application date					
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	EREC29	DNSH EO6 Indicator					
Renovation SCC	EREC30	Balance for renovation of existing buildings					
	EREC31	Balance of IMR of EE equipment					
	EREC32	Balance of IMR of RE equipment					
	EREC33	Balance of EE equipment					
	EREC34	Balance of RE equipment					
	EREC35	Large new constructions					
Financed Emissions	EREC36	Financed CO2-emission	Y	Y	Y		
	EREC37	Surface Area	Y	Y	Y		
	EREC38	GHG Data Score	Y	Y	Y		
	EREC39	GHG Emission Factor	Y	Y	Y		



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Deze woning heeft energielabel

A⁺



- 8.3 million homes
- 61% valid EPC
- 35% energy label A or better (A+, A++, A+++)



- Legislation allowing higher loans for sustainability
- Availability of low or no-interest loans (Warmtefonds)
- Government and local subsidies
- Mortgage interest discount for energy label A
- Online tools for cost indication of sustainability
- Banks highlighting the benefits of sustainability
- Banks assisting in finding sustainability partners





woonnu

- Interest rate discount per label improvement
- Pilot for full support in making homes sustainable
 - Customer journey from energy advice -> contractors -> new energy label -> subsidies
 - Immediate benefitting label A interest rate discount
 - Quote in advance guaranteeing costs
- Too little interest from financial advisers and customers



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Lack of willingness

Subsidies



Lower interest
rates



Lower energy costs



Comfortable living

~~Sustainable house~~

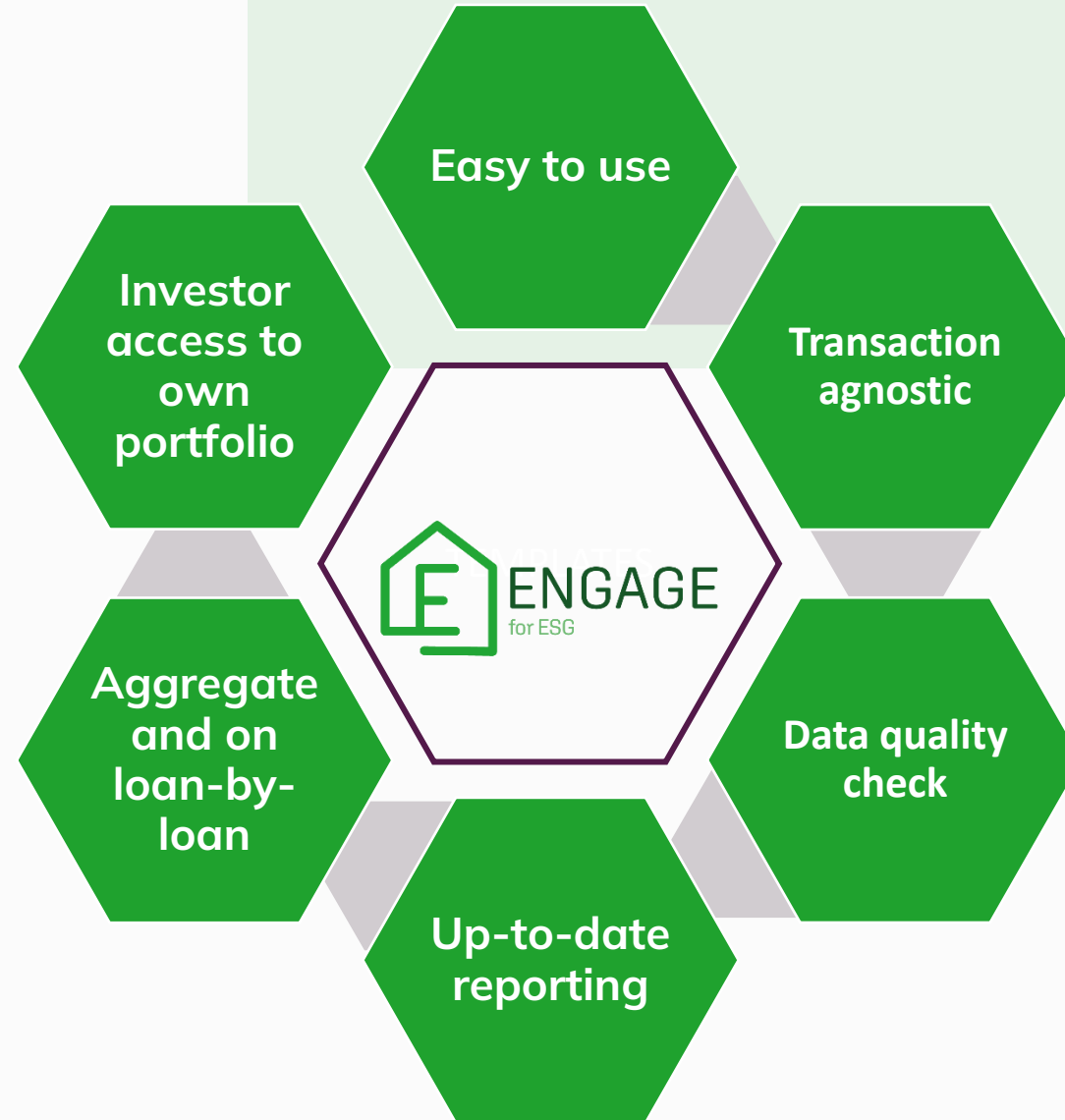


Green premiums for a better business case

- A lot of homes in the Netherlands need to be refurbished to a better energy label.
- Higher discounts on interest rates are needed to incentivize the customer and improve the business case.
- Green premiums from investors are needed and therefore, benefits should be created for investors (i.e. lower capital charges, guarantee schemes).
- Reliable reporting is needed to prove a mortgage loan (portfolio) qualifies as green.
- ENGAGE for ESG provides the ideal tooling to do so.
- We believe that ENGAGE for ESG can be an important piece of the puzzle towards an energy neutral housing stock in Europe.



ENGAGE for ESG – the solution to prove a portfolio is green



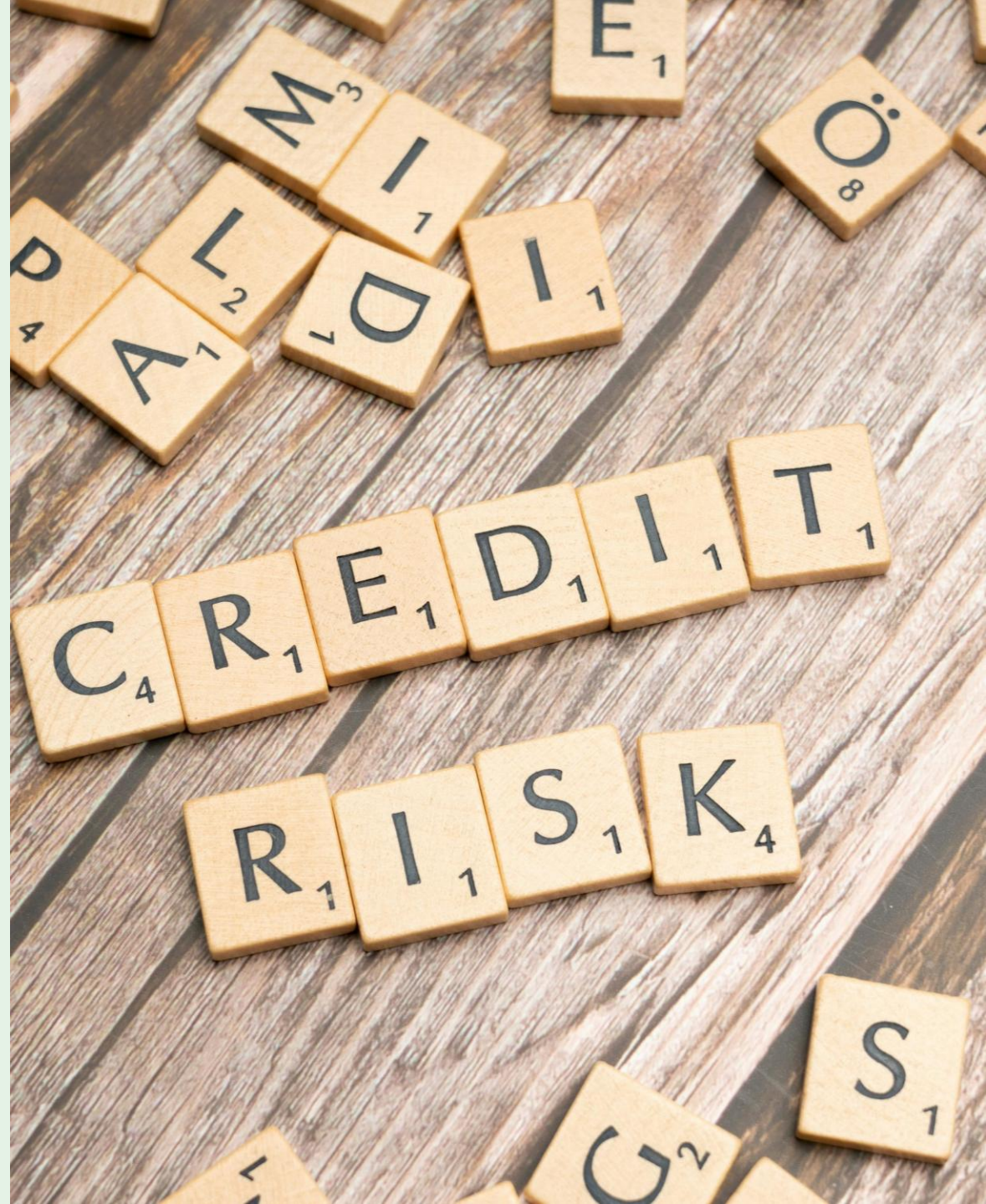
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Technical Report on Risk Mitigation Correlation Analysis

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Technical report on risk mitigation correlation analysis

Key features for France



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Objective of the report: to provide empirical evidence on the relevance of property's EE in predicting mortgage default risk.

Specifics of the French sample

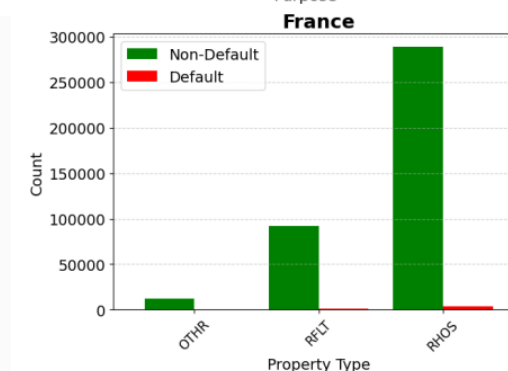
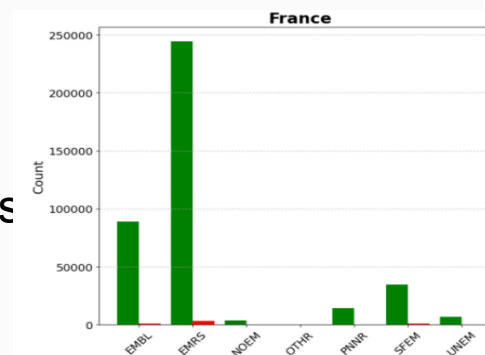
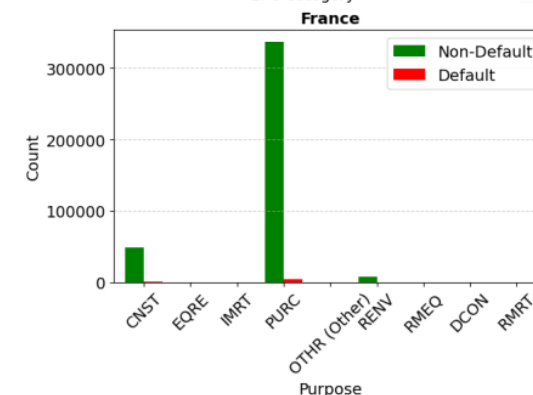
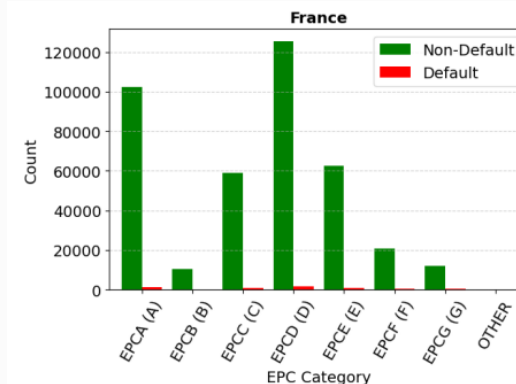
EPC categories: D-ranked properties predominant; defaults concentrated in F, G and "other" category.

Mortgage purpose: mainly purchase and construction, limited share for renovation, presenting highest default levels.

Property type: mainly detached or semi-detached houses, highest default degree.

Employment status: mainly private sector employees; highest default rates for unemployed and self-employed categories.

General trends in French mortgage market 2022-2023:
rising interest rates, fewer new loans, lower granted amounts
longer maturities, increase in defaults
(Inflation and higher property-related costs (ACPR, 2024)).





Technical report on risk mitigation correlation analysis

Key results



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- *Logit Regression Results*

⇒ Higher EPC value associated with lower probability of default.

- *Survivor Functions – Kaplan-Meier estimation*

⇒ Higher EE related to longest survival time.

- *Cox Proportional Hazards model*

⇒ Loans secured by low- efficiency properties faced a 43% higher default risk.

EE Value	Median Survival Time (Months)
High	47.0
Medium	39.0
Low	29.0
Other	18.0

Type	Variable	Name Variable	β (with EE)	β (without EE)
Constant	Constant		-4.2857 *** [0.96181]	-4.0139 *** [0.63081]
RREC10	Energy Performance Certificate Value	EE	-0.6944 *** [0.1741]	
Maturity-Origination Date	Maturity-Origination Date	(Maturity-Origination Date_4)	-0.8021 * [0.4524]	-0.7252 – [0.4519]
Property Type	Property Type	Residential Flat or Apartment	0.7908 *** [0.1377]	0.8818 *** [0.1353]
	Property Type	Multifamily House	0.4181 ** [0.1519]	0.3950 ** [0.1518]
Employment Status	Employment Status	Self Employed	1.1283 *** [0.3421]	1.1286 *** [0.3404]
	Employment Status	No Employment	-0.6444 ** [0.2876]	-0.6947 ** [0.2858]
	Employment Status	Student	0.3929 ** [0.1828]	0.3806 ** [0.1821]
	Employment Status	Other	1.5378*** [0.4562]	1.5067 *** [0.4549]
Primary Income	Primary Income	Primary obligor annual income	-0.2272*** [0.0675]	-0.2638*** [0.0592]
Interest Rate Type	Interest Rate Type	Fixed with future periodic resets	0.8693*** [0.2601]	0.8957 [0.2582]



Key results : relevance of EE variable

- *Comparison of the explanatory power of chosen models (“with EE” vs “without EE” specification)*

⇒ Higher pRs: greater explanatory power of the EE model.

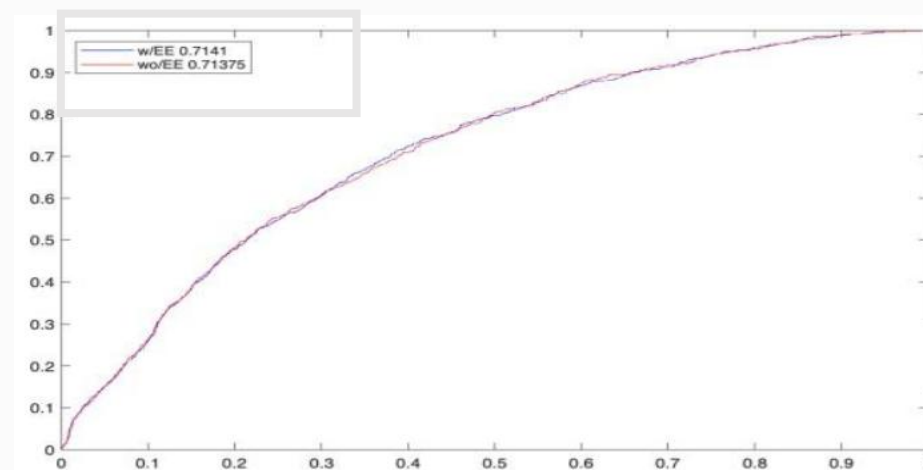
⇒ Less negative log-likelihood: greater accuracy of EE model in predicting the probability of default.

Types of models	Model with EE specification		Model without EE specification
Number of Observations	256603		
Number of Events	350		
pRs	0.02686865		0.01717916
Loglikelihood	-2587.3952		-2613.1579

- *Model’s performance (France)*

Model with EE: higher AUC

=> better discriminatory power = improved performance.



- *Cox Proportional Hazards (PH) model*

⇒ Model 5 (includes EE, loan characteristics, FE) better model.

	(1)	(2)	(3)	(4)
Summary Statistics	(5)			
Observations	10690	10690	10690	10690
Events observed	5345	5345	5345	5345
SE	Rob.	Rob.	Rob.	Rob.
C-index	0.61	0.63	0.65	0.67
Partial AIC	92345.43	92281.13	91816.49	90672.66
log-likelihood r. test	747.11 on 3 df	813.41 on 4 df	1284.04 on 7 df	2435.87 on 11 df
				3104.38 on 19 df



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