



ENGAGE for ESG: a simple solution for ESG reporting

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Today's Speakers



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Business School



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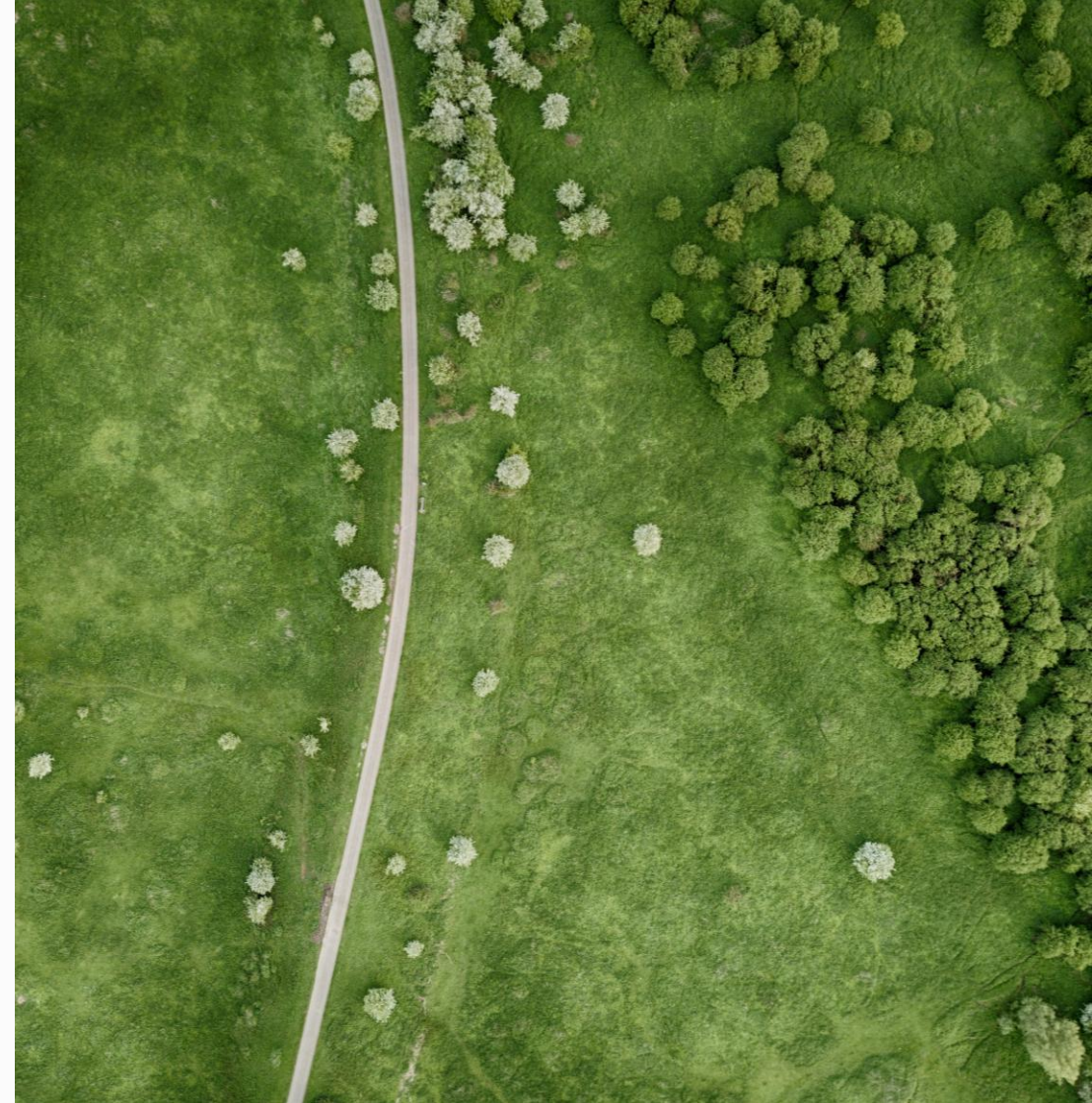


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Agenda

- I. Welcome and introduction
- II. Climate stress testing for mortgage default probability
- III. The ENGAGE Templates version 1.2 and the ENGAGE Portal
- IV. How to get involved in ENGAGE for ESG





I. Welcome & Introduction

Marco Angheben

European DataWarehouse





ENGAGE for ESG initiative

- Co-funded by the European Union with a LIFE grant
- Six consortium partners from across Europe
- **Scope:** ENGAGE for ESG aims to provide:
 - A. A **simple solution** for **ESG reporting**
 - B. For **mortgages** and **home renovation loans** to check **alignment** with:
 1. the **EU Taxonomy Regulation**;
 2. in compliance with the **Energy Performance of Buildings Directive**; and
 3. the **General Data Protection Regulation**.

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Venezia



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ENGAGE for ESG: a comprehensive solution

"We do not know what data is needed for EU Taxonomy Alignment"

"What data is needed to gain insights into the renovation potential?"

"How does this portfolio compare to other portfolios?"

"Which portfolio has the best renovation performance?"

"We have a mandate to fund EU Taxonomy aligned renovation investments but we have a challenge in identifying eligible investments"

Physical risks

Green Asset Ratio calculation

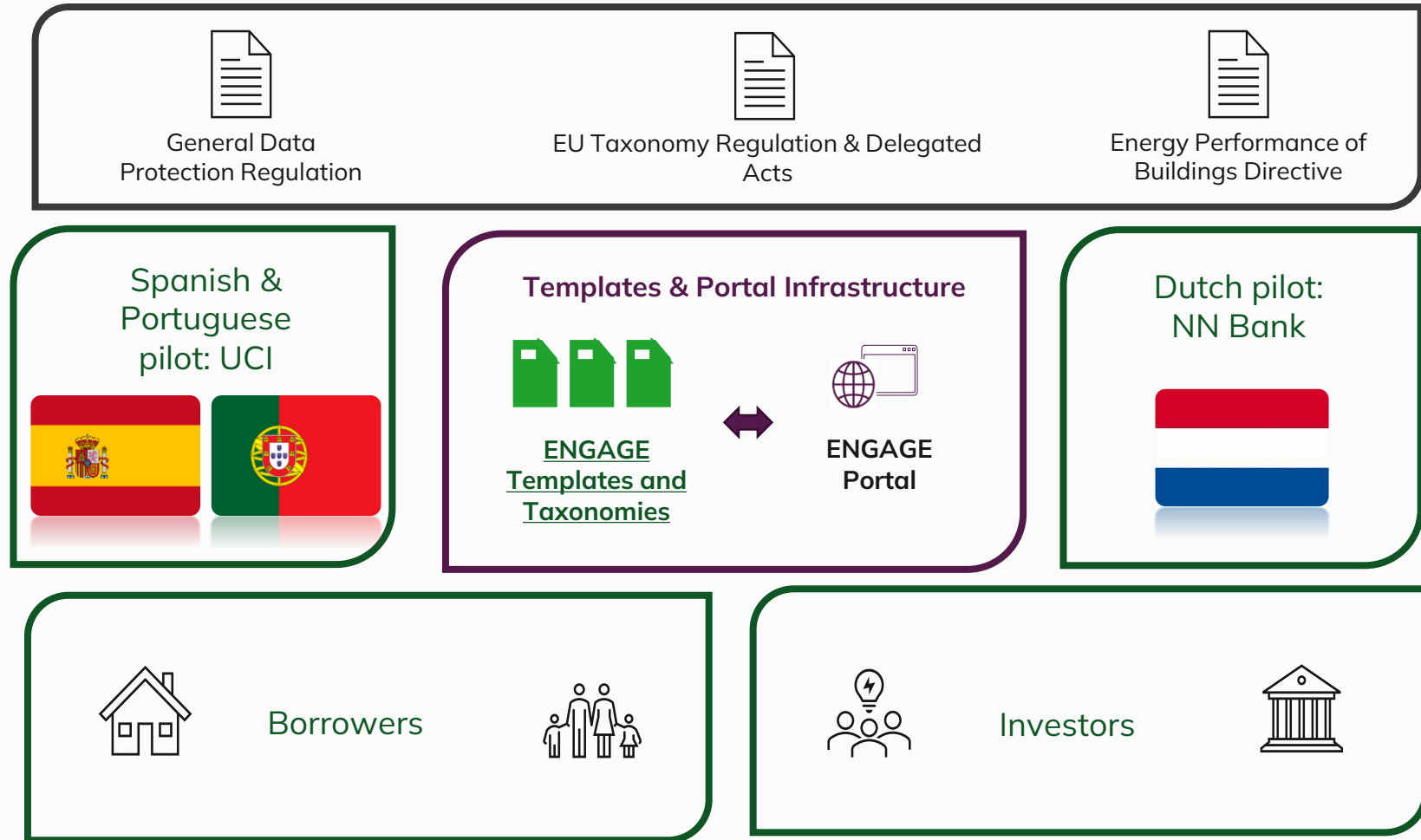
Transition risks management



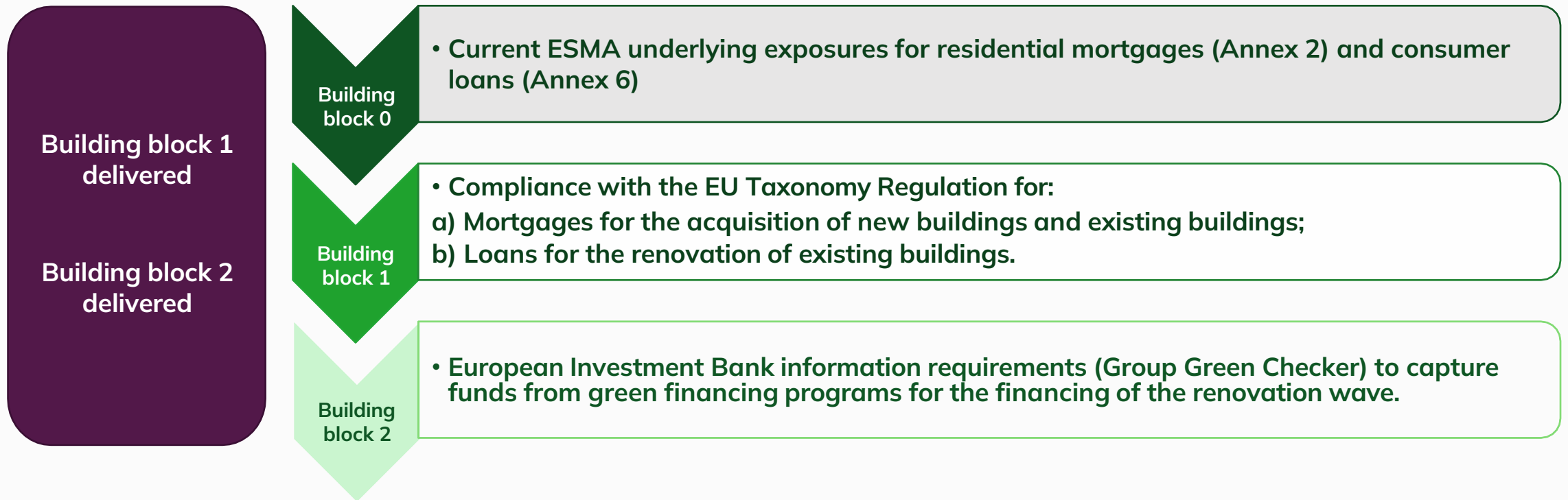
ENGAGE for ESG initiative description

Two main pillars:

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



The ENGAGE Templates: structure





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**.
- **Free access** available subject to a legal arrangement.

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 table showing a file 'PoolABC_2024-10-20.zip' with a 'Download report' button and a date '10-2024'. An 'Add file' button is at the bottom right of this section. The footer is divided into three columns: 'ENGAGE SOLUTION' with links 'FAQS', 'DISCOVER ENGAGE', and 'GET IN TOUCH'; 'LEGAL INFO' with links 'PRIVACY POLICY', 'TERMS & CONDITIONS', and 'IMPRINT'; and 'LOGIN AREA' with links 'LOGIN' and 'LOGIN REQUEST'. At the bottom left is the 'Life' logo with the text 'Co-funded by the European Union'. At the bottom center is a disclaimer: '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.' 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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New ENGAGE user onboarded!

- The Belgium-based social lender Onesto joined the ENGAGE community in October 2025, becoming a user of the ENGAGE Templates and Portal.
- Joris Piette, Project Manager and COO at Onesto, stated: “By working with the *ENGAGE Templates and Portal*, we gain a crucial puzzle piece in our mission to make sustainable homeownership attainable for low-income first-time buyers. The structured ESG data and Taxonomy insights from *ENGAGE* allow us to connect impact measurement to real people’s housing journeys — ensuring that sustainability and affordability go hand in hand.”





II. Climate stress testing for mortgage default probability

Raffaella Calabrese

University of Edinburgh





Climate stress testing for mortgages

Luca Zanin - Prometeia

Raffaella Calabrese - University of Edinburgh

Connor Innes Thorburn - Prometeia

Agenda

nda

- Introduction
- Literature review on climate stress testing
- Purpose
- Methodological framework
- Data collection
- Model of credit scoring
- Design of scenarios
- From damage index to climate-adjusted LTV
- Stress test for mortgage PD
- Conclusions

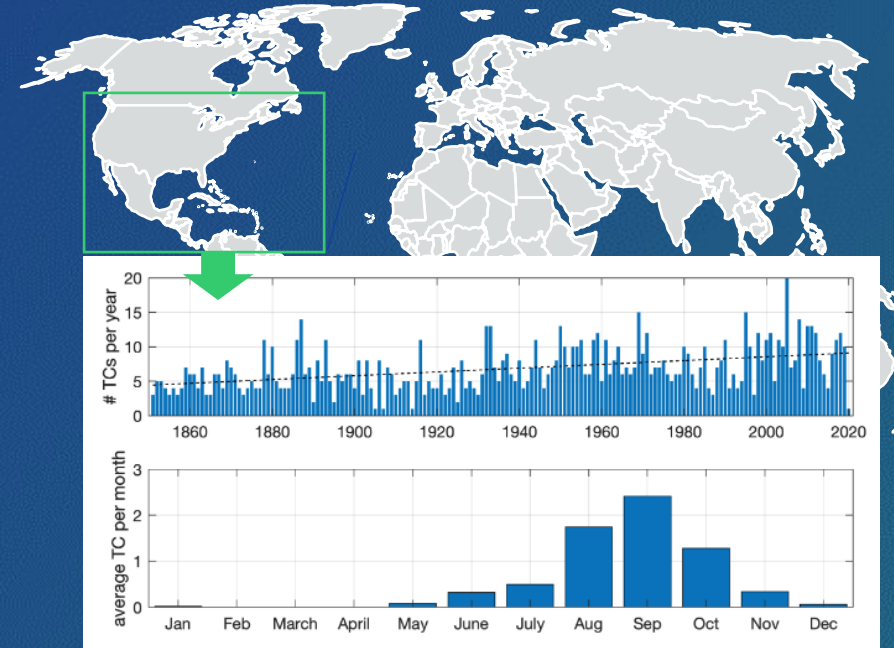
Introduction

Extreme weather events, such as tropical cyclones, floods, and heavy rains, occur more frequently and intensely in the United States than in the past owing to global warming (IPCC, 2023)



Policymakers, central banks, regulatory authorities, and practitioners have expressed concerns about the potential risks that extreme weather events may pose to economic activity and asset values, ultimately threatening financial stability

Trends of tropical cyclone activity in the U.S.



Stress testing

Stress testing exercises are an important tool for financial institutions to evaluate their portfolio vulnerability to **adverse scenarios**, especially **when outside the range of historical events**.

Climate stress testing involves assessing financial institutions' **resilience to climate-related risks**

Literature review on climate stress testing

Focus

We focus on a climate stress testing framework for mortgage portfolios

The **real estate properties** used to **secure mortgages** can be threatened for their **location** by severe damage from acute weather events with cascading effects on the **mortgage default risk**.

Some examples from literature and practitioners

Author(s)	Some main features	Some main limitations
Wong and Ho (2023)	The PD and the LGD are estimated by designing predetermined and hypothetical extreme weather events.	The scenarios are not designed using science-based climate or statistical models
Caloia and Jansen (2021)	The design of the stressed flood depth scenario derived from guidance from a Dutch government expert group on flood incidence and related inundation depths.	The scenarios by return periods are not designed using, for example, hydrodynamic models , allowing estimating location-specific flood depths
Federal Reserve Board (2023)	The first exercise of climate stress tests for the six largest U.S. Banks. One of the goals is to evaluate the impacts of extreme events on residential real estate assets of the mortgage portfolio (PD). The FRB recommended that banks consider including tropical cyclone events with a return period of 1-in-100 years and 1-in-200 years in the Northeastern U.S.	No larger return period events are considered No uniform scenarios

Lack of a common framework

Purpose



This study aims to **overcome some of these limitations** by proposing a methodology for **assessing the change in the default probability** of mortgage loans affected by extreme weather events (tropical cyclones) with **large return periods, such as up to 1-in-1,000 years**

Moreover, we aim to address the following two research questions:



The first is whether the **default risk** in different geographical areas shows **heterogeneous exposure to tropical cyclones**.



The second research question is focused on **insurance coverage** to understand if and to what extent it **contributes to mitigating the effects of physical risk** on mortgage defaults.

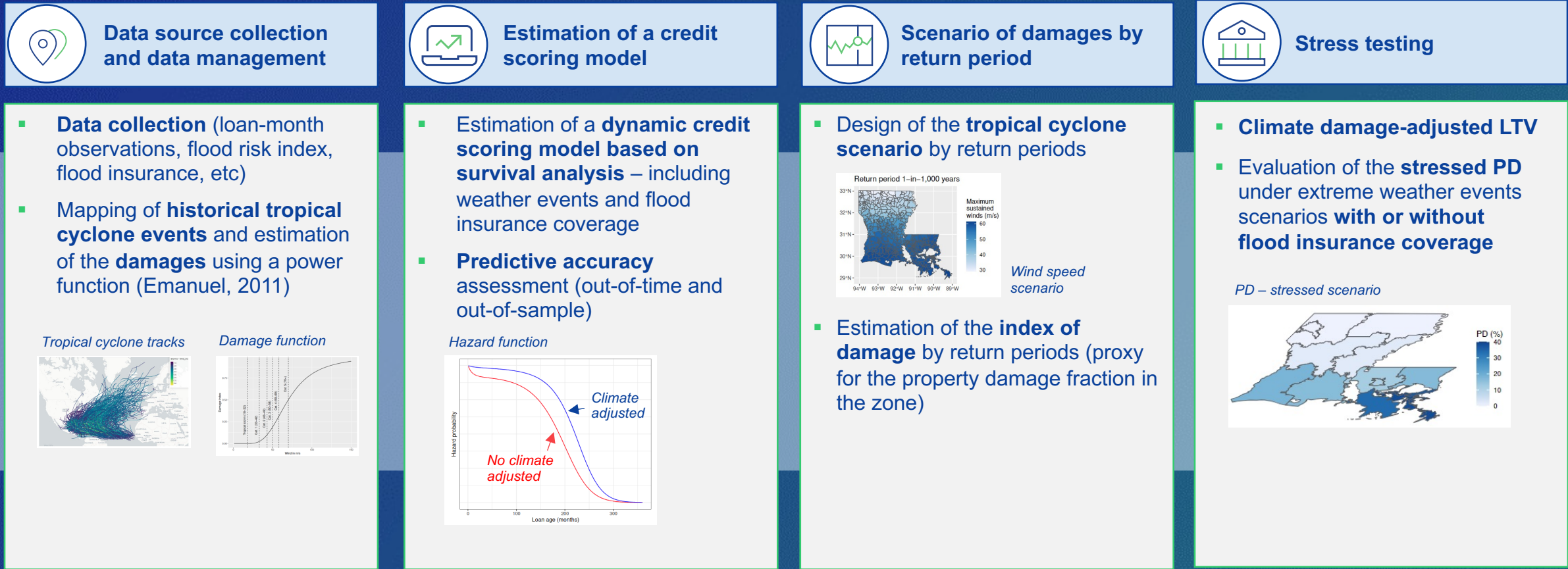


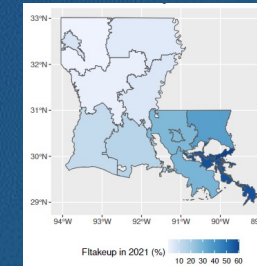
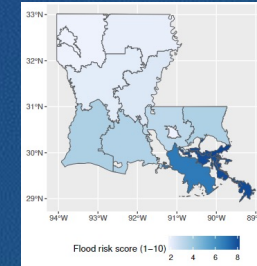
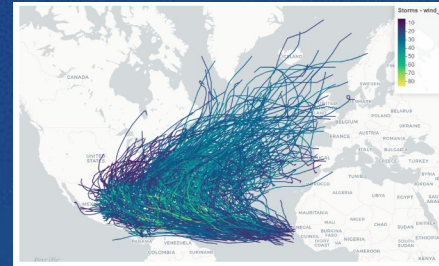
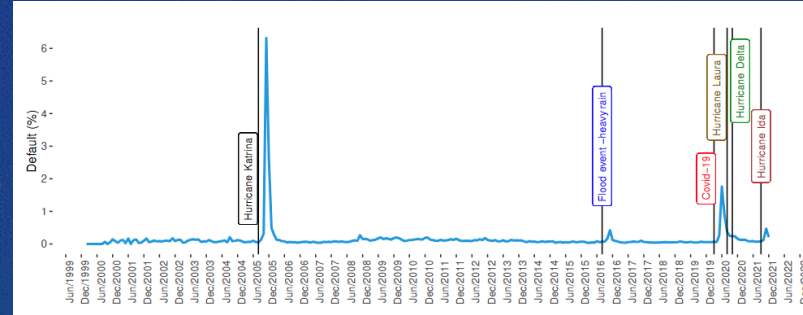
For the empirical analysis, we apply the suggested climate stress testing framework to a **portfolio of mortgages** provided by Freddie Mac in **Louisiana**, a U.S. state affected by **devastating hurricanes in the last decades** (e.g., Hurricane Katrina in August 2005; Hurricane Laura in August 2020; and Hurricane Ida in August 2021)

Methodological framework



We designed a climate stress testing framework based on the following steps:





Model of credit scoring



Methodology

The dependent variable of a credit scoring model is

$$Y_{it} = \begin{cases} 1 & Y_{it}^* > 0 \\ 0 & \text{otherwise} \end{cases}$$

→ mortgage default based on the 90+ day delinquency

The model is defined as

$$Y_{it}^* = \alpha + \underbrace{\phi(d)^T \beta_0}_{\text{Hazard function}} + \underbrace{z_{tot}^T \beta_1 + x_{it-k}^T \beta_2 + w_{it-k}^T \beta_3}_{\text{Static and time-varying variables}} + \underbrace{c_{it-k}^T \beta_4}_{\text{Weather and insurance variables}} + \epsilon_{it}$$

We estimate the model using a logit link function (Bellotti and Crook, 2013)

Results from survival models

Variables	Base model		Base model+Climate-related variables	
	Estimates	Std. Error	Estimates	Std. Error
Intercept	-4.9471***	0.3179	-6.4038***	0.3199
Loan age	-0.0061	0.0069	-0.0086	0.0069
Loan age (squared)	0.0001**	0.0000	0.0001*	0.0000
Loan age (log)	1.3245***	0.2442	0.9445***	0.2433
loan age (log squared)	-0.1599**	0.0639	-0.0578	0.0638
Occupancy type (Base: Primary residence)				
Investment property	0.2286***	0.0418	0.2396***	0.0415
Second home	-0.0331	0.0697	-0.0436	0.0699
Nr. of units	0.3259***	0.0297	0.2280***	0.0308
Mortgage characteristics				
FICO score	-0.0102***	0.0001	-0.0092***	0.0002
LTV _{t-3}	0.0149***	0.0008	0.0196***	0.0008
Spread IR _{t-3}	0.0267**	0.0126	0.0951***	0.0127
DTI	0.0185***	0.0009	0.0177***	0.0009
Loan motivation (Base: Purchase)				
Refinance - cash out	0.2900***	0.0257	0.2979***	0.0259
Refinance - no cash out	0.1692***	0.0251	0.1791***	0.0252
Nr. of borrowers	-0.4601***	0.0206	-0.4707***	0.0207
Macroeconomics + insurance				
Unemployment rate _{t-3}	0.2685***	0.0045	0.2856***	0.0046
Floodtakeup _{t-3}			-0.0229***	0.0006
Tropical cyclones damages + major flood event + flood risk				
Flood event 2016 _{t-3}			2.0452***	0.0863
Damage index _{t-3}			0.1404***	0.0026
Flood risk			0.2270***	0.0049
Deviance explained (%)	6.43		9.02	
Loan-month observation (Nr.)	6,742,194		6,742,194	

Model of credit scoring – predictive accuracy



Out-of-time

Model	Base model+	AUC	H	KS	F-score	ACC
Survival model	No climate-related variables	0.6912	0.1016	0.2971	0.0055	77.0132
	Climate-related variables	0.7117	0.1280	0.3263	0.0063	81.0094
Binomial model (link = Logit)	No climate-related variables	0.6736	0.0885	0.2729	0.0051	75.2346
	Climate-related variables	0.6997	0.1164	0.3127	0.0060	79.0430
Binomial model (link = Probit)	No climate-related variables	0.6744	0.0896	0.2770	0.0051	74.6558
	Climate-related variables	0.7005	0.1175	0.3103	0.0058	77.0727

The training sample encompasses loans observed from 2000 to 2020. The test sample looks one year ahead (2021)

- Models incorporating climate-related variables (extreme events, risk exposure, and mitigation risk measures) **outperform those that exclude them.**

- The **survival model outperforms the logit and probit models** without duration time.

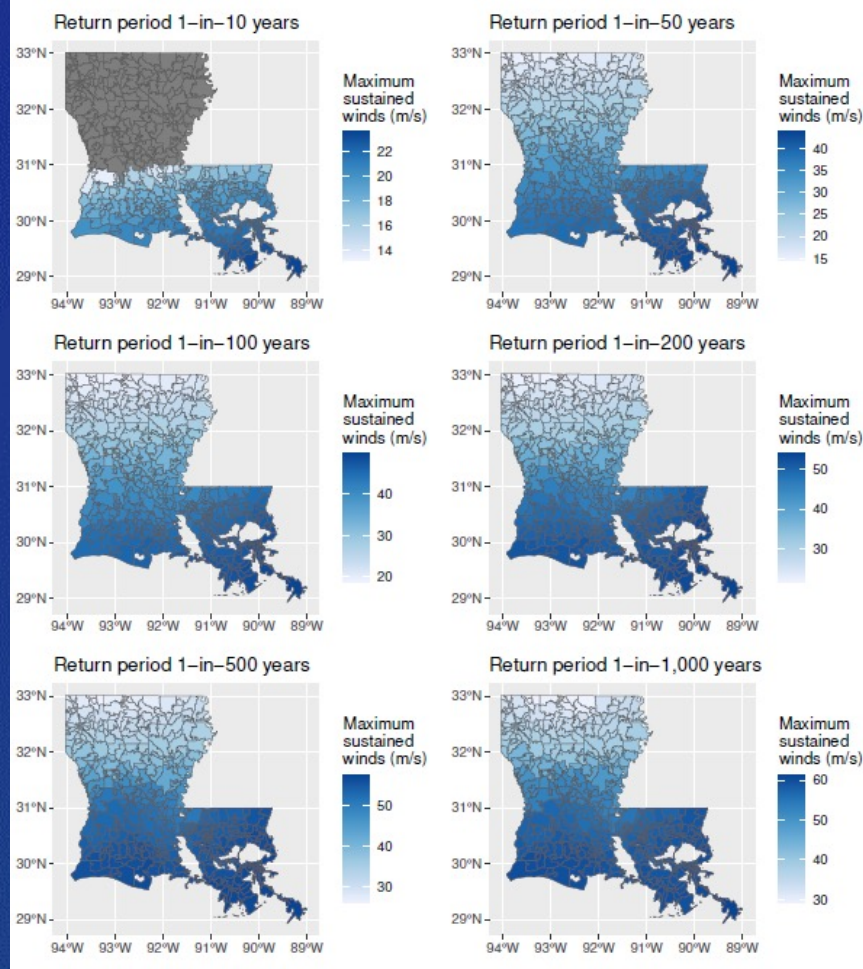
Out-of-sample

Model	Base model+	AUC	H	KS	F-score	ACC
Survival model	No climate-related variables	0.7630	0.1956	0.3955	0.0068	69.4748
	Climate-related variables	0.7967	0.2576	0.4414	0.0076	72.2825
Binomial model (link = Logit)	No climate-related variables	0.7559	0.1864	0.3826	0.0066	69.1860
	Climate-related variables	0.7869	0.2472	0.4258	0.0074	72.0425
Binomial model (link = Probit)	No climate-related variables	0.7565	0.1870	0.3833	0.0065	68.3752
	Climate-related variables	0.7902	0.2539	0.4308	0.0073	71.3284

The average predictive accuracy measures are derived from five-fold out-of-sample cross-validation, with each test sample size constituting one-fifth of the ID loans

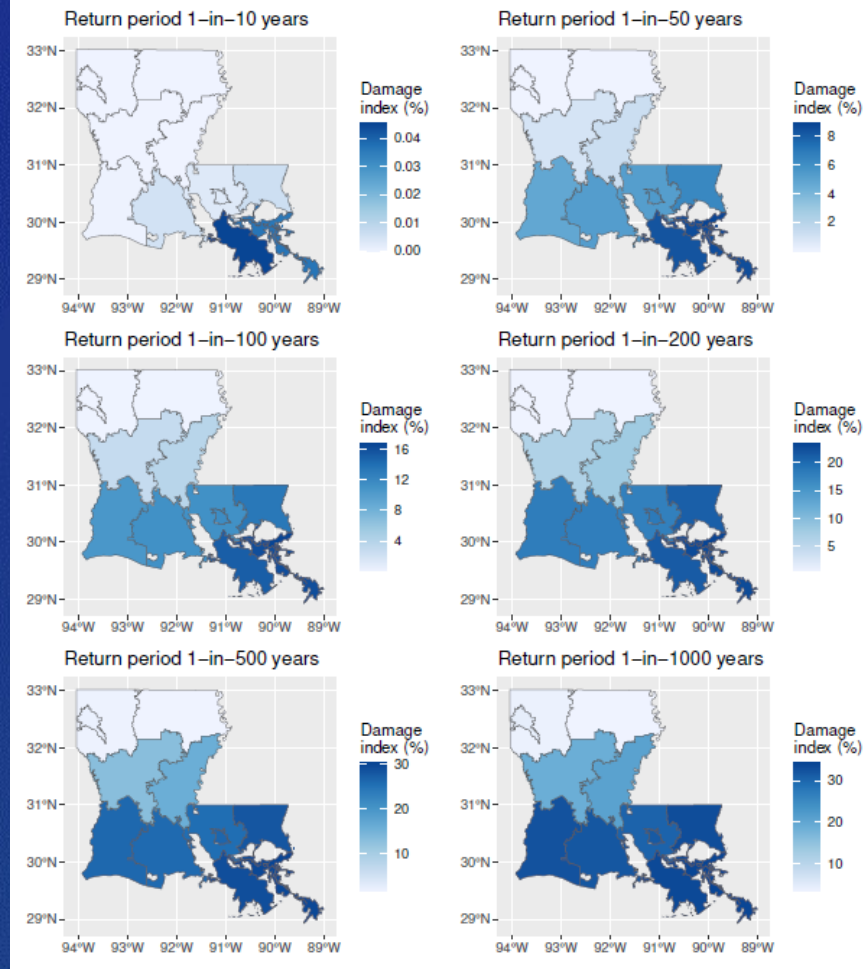
- These findings not only validate the existing literature on the enhanced predictive accuracy of credit risk when integrating climate-related variables but also underscore the growing **preference for survival models over traditional scoring models** (such as logit and probit models)

Design of scenarios – tropical cyclone wind speed



- We considered using the **Synthetic Tropical cyclOne geneRation Model** (STORM) proposed by Bloemendaal et al. (2020) to generate wind speed scenarios for tropical cyclones.
- As elaborated in Meiler et al. (2022), the scenarios obtained from **STORM incorporate a greater number of high-impact events** (specifically, Hurricanes categories 3-5) compared to alternative solutions (e.g., CLimate ADaptation (CLIMADA) platform and the Columbia HAZard model). This unique feature enables us **to generate the most severe scenarios of tropical cyclones**, facilitating a thorough evaluation of their impact on mortgage defaults.
- **Coastal zones** have emerged as the areas **most affected by severe tropical cyclones**

Design of scenarios – damage index



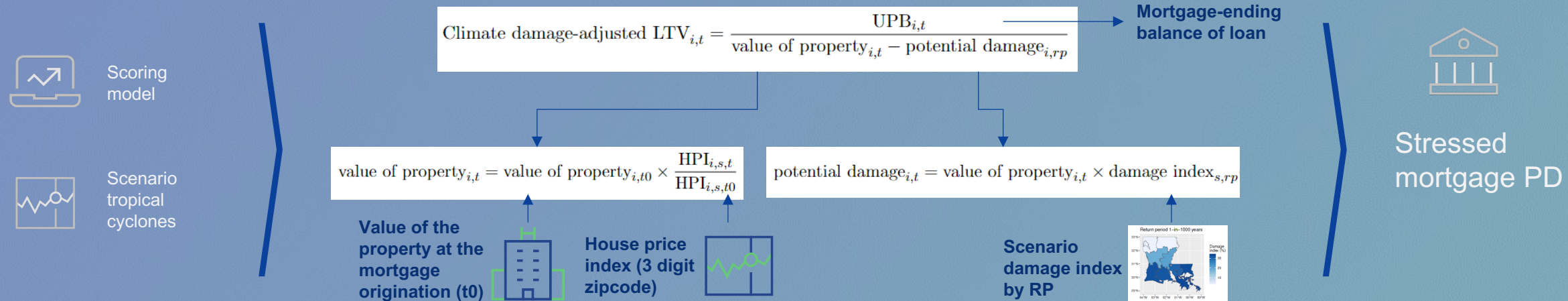
- The **damage index is at the five-digit ZIP code level**. As the information on mortgages is provided at the three-digit ZIP code level, **we compute a weighted average to obtain the wide damage index at the three-digit ZIP code level** using the number of properties is provided by First Street Foundation
- Consistently with the wind speed scenarios, **the most substantial damage is expected in coastal areas**. This occurs when hurricanes intensify by absorbing heat from warmer ocean waters via air-sea heat fluxes, making landfall on the mainland with heightened energy levels

From damage index to climate-adjusted LTV



Damages from tropical cyclones, encompassing wind speed, heavy rain/flooding, and storm surges, **affect the value of the impacted properties**.

The decline in property value contributes to a rise in the loan-to-value (LTV) ratio, consequently elevating the probability of default on mortgages. For a damage index with return period rp , **we estimate a simplified climate damage-adjusted LTV ratio** associated with each mortgage i as follows:



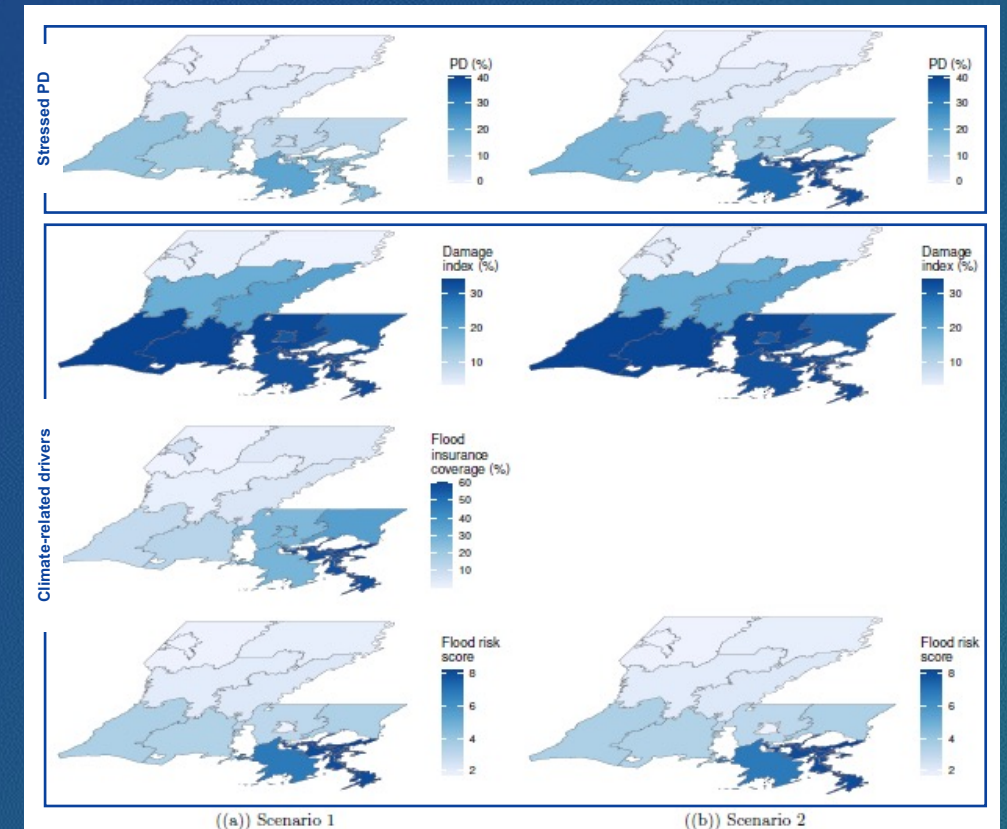
Stress test for mortgage PD



Scenario	Scenarios predicted PD (%)				
	with current (%) of insurance coverage on flood risk				
	Mean	P50 th	P95 th	P97 th	P99 th
Baseline	0.0782	0.0574	0.2091	0.2491	0.3507
RP 1-in-10 years	0.0784	0.0575	0.2097	0.2497	0.3520
RP 1-in-50 years	0.2055	0.1354	0.6106	0.7527	1.0979
RP 1-in-100 years	0.5858	0.3565	1.8987	2.3584	3.4035
RP 1-in-200 years	1.6604	1.0700	5.3277	6.5459	9.1542
RP 1-in-500 years	4.9574	3.4922	15.0860	18.0101	23.8237
RP 1-in-1,000 years	9.9810	7.7341	28.1505	32.1224	39.9288

Scenario	Scenarios predicted PD (%)				
	without an insurance coverage on flood risk				
	Mean	P50 th	P95 th	P97 th	P99 th
RP 1-in-10 years	0.1760	0.1129	0.5324	0.6648	0.9774
RP 1-in-50 years	0.5306	0.2565	1.9356	2.4174	3.5373
RP 1-in-100 years	1.5782	0.6815	6.1391	7.6390	10.9140
RP 1-in-200 years	4.2422	2.0653	15.9236	19.2984	26.1142
RP 1-in-500 years	10.9998	6.7615	36.5067	42.1965	51.5627
RP 1-in-1,000 years	19.3382	14.8431	54.2235	59.8746	68.3952

Scenarios of default probability for various return periods of tropical cyclone wind speeds



The mean probability of default is computed at the three-digit zip code level in Scenarios 1 and 2. **Scenario 1** includes flood insurance coverage, while **Scenario 2** excludes it. The analysis focuses on a tropical cyclone event with a return period of 1-in-1,000 years

Conclusions

We apply the proposed climate stress test framework to a mortgage portfolio in Louisiana, a region frequently affected by major tropical cyclones in the U.S.

Main findings:

- We found that damage from **tropical cyclones with larger return periods** significantly **increased the default probability**.
- The effects of tropical cyclones on the **default risk** of mortgage loans are **spatially heterogeneous**.
- The findings highlight the crucial role of **flood insurance in mitigating default risk** in high-risk flooding locations

Implications for a wider group of stakeholders:



- **Financial institutions and regulators** can use our proposal to **identify mortgage loans that are most vulnerable** to extreme climate events. This would support lenders in adopting a more reliable approach for **prudential risk management**.
- Lenders can share their default risk assessment with **borrowers** who would be able to make more **informed decisions on the risk of buying a property in risky areas** and potentially purchase **insurance to mitigate losses** from catastrophic events.
- **Policymakers** can consider these findings to **allocate public funds** in a more effective way **to protect homeowners** living in high-risk areas.





III. The ENGAGE Templates v1.2 and the ENGAGE Portal

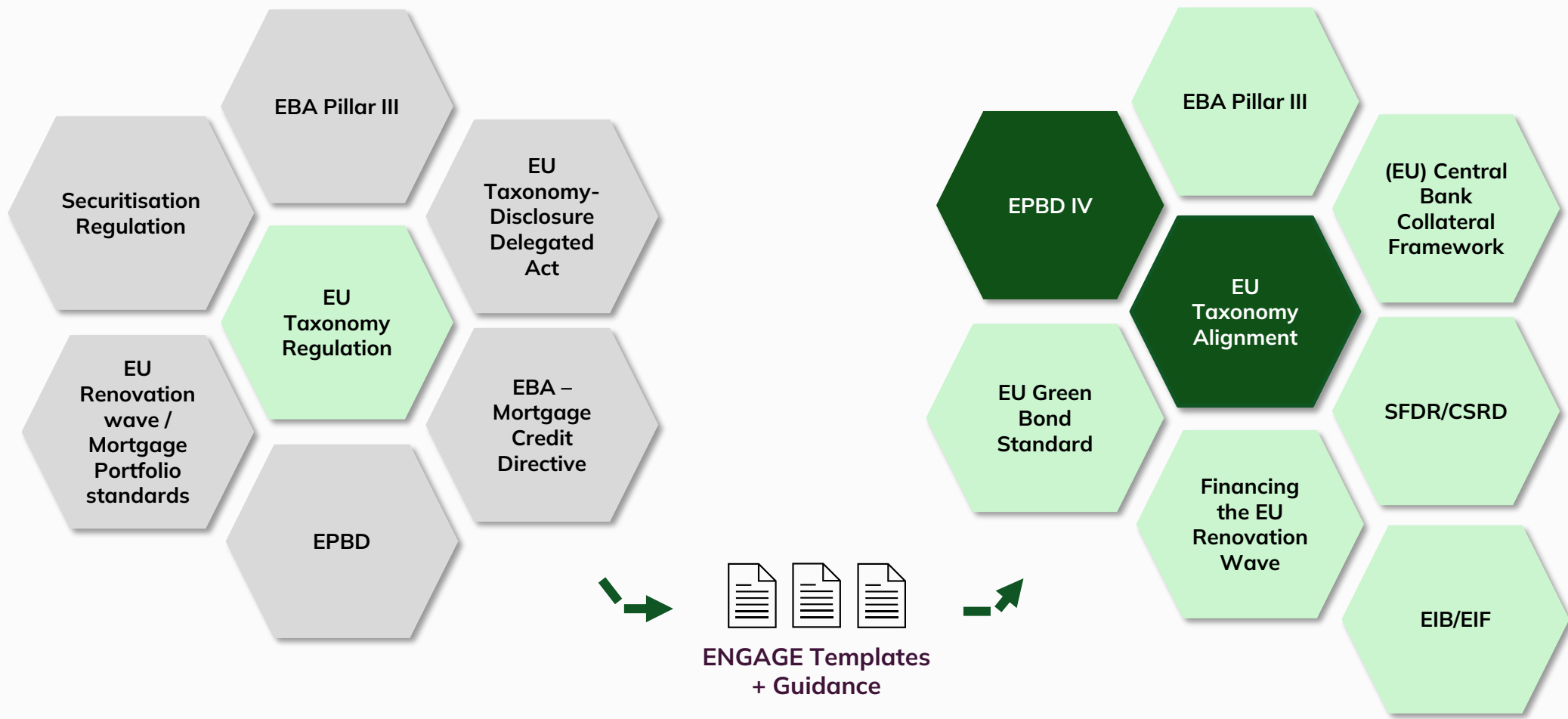
Vincent Mahieu

Hypoport





ENGAGE for ESG regulatory background



The EU Taxonomy is the common denominator of many ESG regulations



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The EU Taxonomy – Scope for ENGAGE for ESG

In short:

- The **EU Taxonomy** is a regulation that constitutes the cornerstone of the EU Sustainable Finance Action Plan.
- The EU Taxonomy provides a **common language** and uniform criteria to identify the extent to which economic activities may be considered environmentally sustainable.
- Its aim is to reorientate **capital flows towards lower-emission economic activities** that will help decarbonise the economy.
- The EU hopes to reach **its 2030 climate targets** and the **ultimate goal of net-zero greenhouse gas emissions by 2050**.
- The EU Taxonomy defines the **minimum criteria that economic activities should comply with in order to be considered environmentally sustainable**.



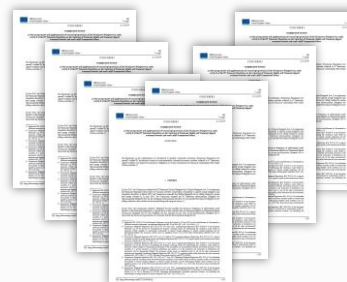
Taxonomy
Regulation



Climate
Delegated Act



Annex I –
CC Mitigation



Multiple Commission Notice –
Guidance Documents (Q&A's)

EU Taxonomy Alignment Steps

Substantial Contribution

+

Do No Significant Harm

+

Minimum Safeguards

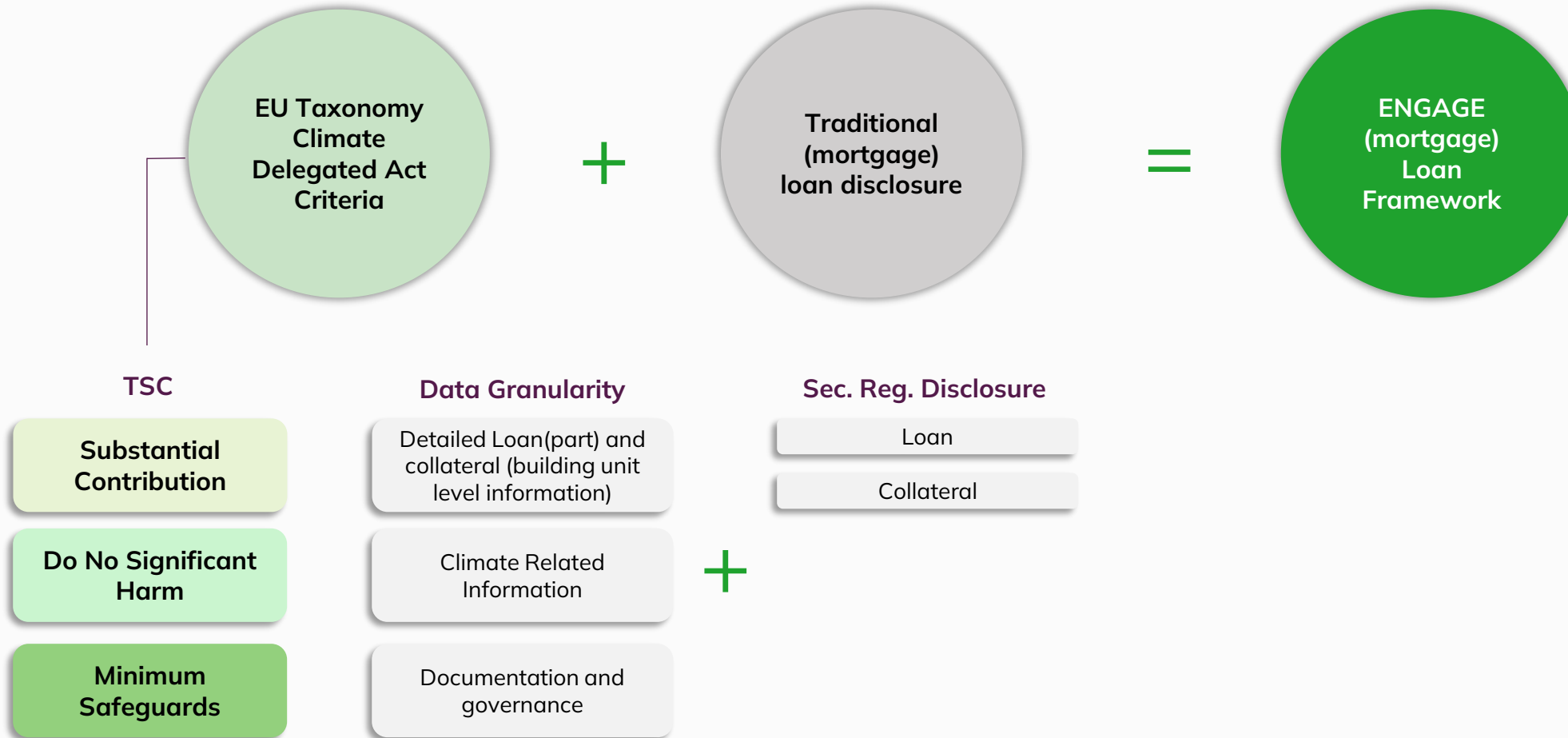
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Sustainable Activity

Additional
Technical
Screening
Criteria
Available

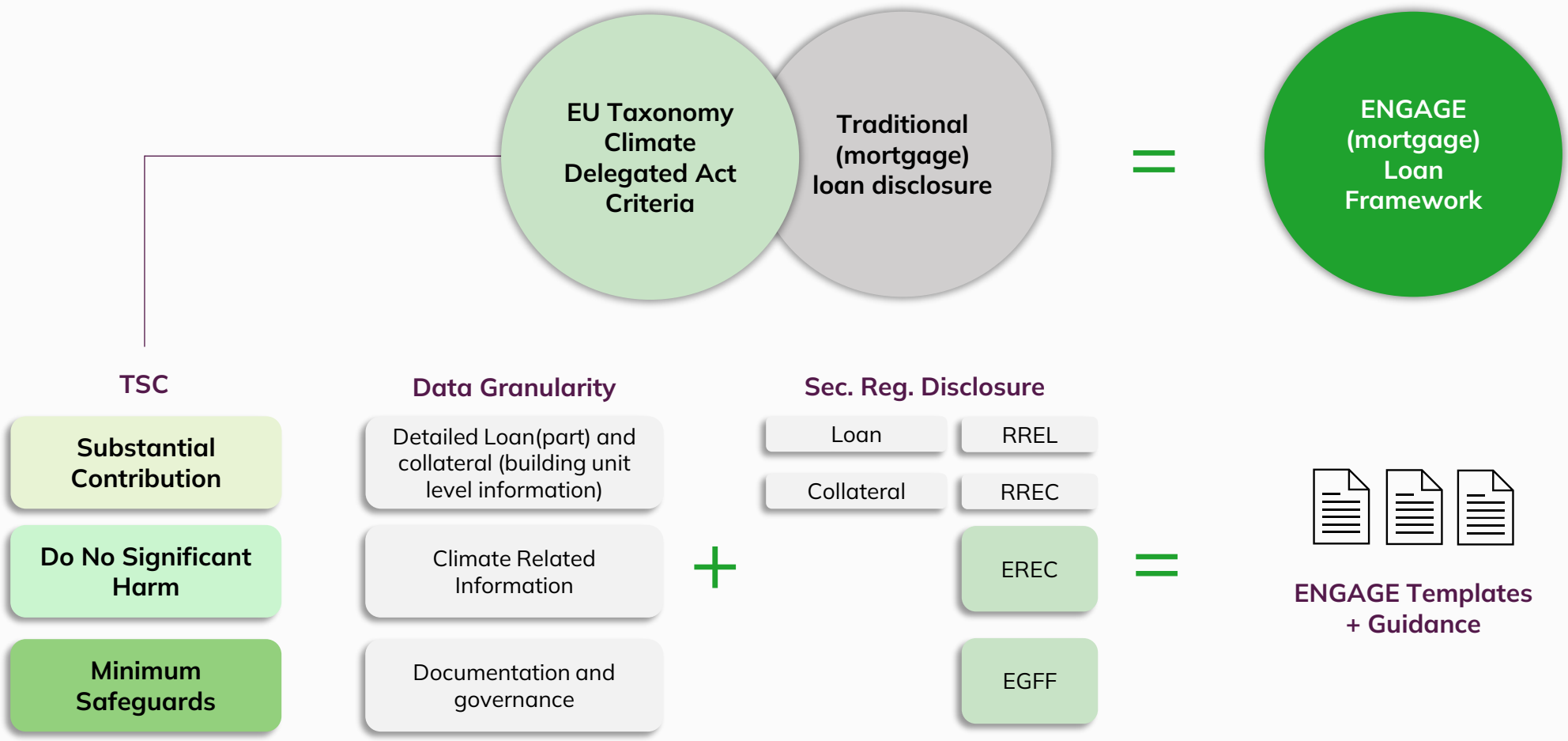


The EU Taxonomy – Scope for ENGAGE for ESG





The EU Taxonomy – Scope for ENGAGE for ESG



Combining the (implicit) data requirements of the EU Taxonomy with the common mortgage loan disclosure format(s).



The ENGAGE Templates

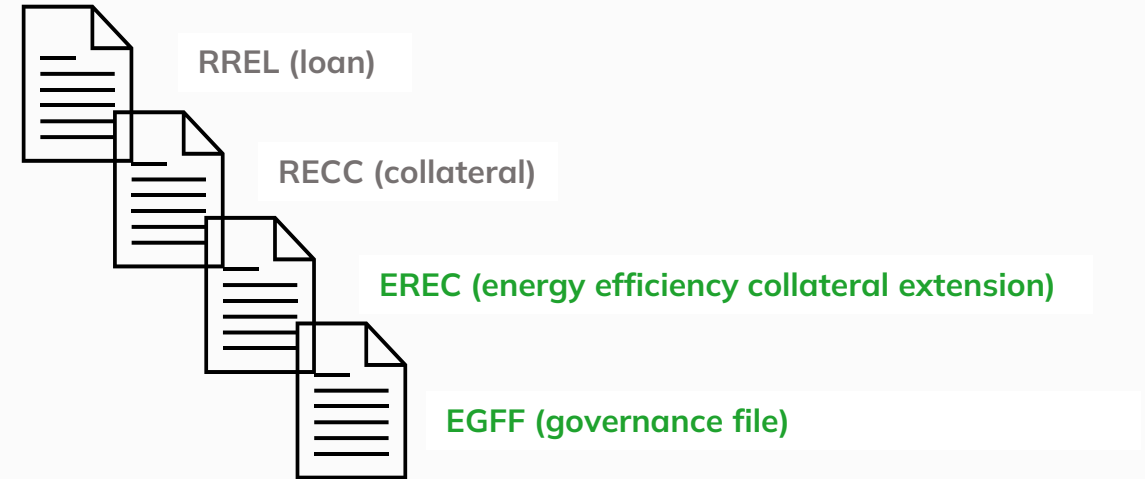
Templates

TEMPLATE IDENTIFIER	SECTION	FIELD CODE	FIELD NAME	SET-UP	SET-UP	SET-UP	Building Stock & Assets for Energy	Minimum	Section 2.1 & 2.2	Section 2.3 & 2.4	Section 2.5 & 2.6
ENG-001-01-001-001-001	Technical Activity	ENG01	Energy Activity Description	103	103	(SPT)			X	X	X
ENG-001-01-001-001-001	Building Information	ENG02	Construction Year	103	103	(SPT/00000)			X	X	X
ENG-001-01-001-001-001	Building Information	ENG03	Construction period application date	103	103	(SPT/00000)			X	X	X
ENG-001-01-001-001-001	Energy Performance Certificate (EPC) Data	ENG04	Energy Performance Certificate (EPC) Data	103	103	(SPT/00000)			X	X	X
ENG-001-01-001-001-001	Energy Performance Certificate (EPC) Data	ENG05	Energy Performance Certificate (EPC) Data	103	103	(SPT)			X	X	X
ENG-001-01-001-001-001	Energy Performance Certificate (EPC) Data	ENG06	Energy Performance Certificate (EPC) Data	103	103	(SPT/00000)			X	X	X
ENG-001-01-001-001-001	Energy Performance Certificate (EPC) Data	ENG07	Energy Performance Certificate (EPC) Data	103	103	(SPT/00000)			X	X	X
ENG-001-01-001-001-001	Energy Performance Certificate (EPC) Data	ENG08	Energy Performance Certificate (EPC) Data	103	103	(SPT/00000)			X	X	X
ENG-001-01-001-001-001	Energy Performance Certificate (EPC) Data	ENG09	Energy Performance Certificate (EPC) Data	103	103	(SPT)			X	X	X
ENG-001-01-001-001-001	Energy Performance Certificate (EPC) Data	ENG10	Energy Performance Certificate (EPC) Data	103	103	(SPT)			X	X	X
ENG-001-01-001-001-001	Energy Performance Certificate (EPC) Data	ENG11	Energy Performance Certificate (EPC) Data	103	103	(SPT/00000)			X	X	X

Guiding Documentation



Sample files



Available upon request



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Economic Activities – Scope for ENGAGE

When developing **version 1.2** of the ENGAGE Templates, the ENGAGE Consortium has considered:

- ✓ ENGAGE data framework is an **add-on to existing market best practices**
- ✓ By **identifying common denominators** among regulatory disclosure templates, financial institutions can simplify and streamline their (often costly) reporting processes.
- ✓ ENGAGE data **framework** is **scalable** and **modular**.
- ✓ New in ENGAGE Templates v1.2:
 - ❑ SCC 7.1
 - ❑ SCC 7.2, 7.3 + 7.6
 - ❑ CSRD – Financed CO² emissions
 - ❑ Annex 6 version for unsecured renovation loans
 - ❑ EIB Group Green Checker fields

In the future, the ENGAGE Templates aim to cover relevant elements for EPBD IV and the EU Green Bond Standard

		Substantial Contribution	Do No Significant Harm					Minimum Safeguards
			(2)	(3)	(4)	(5)	(6)	
New buildings	7.1	Added in V1.2						v1.1
	7.2	Added in V1.2						
	7.3	Added in V1.2						
Renovations*	7.4							
	7.5							
	7.6	Added in V1.2						
	7.7	V1.1						
Existing/new buildings								

*The ENGAGE v1.2 version (Annex 6) focuses only on renovations



The ENGAGE Templates: how it works

Building Block

- Fields marked with **0** denote the **original ESMA disclosure format**.
- Fields marked with **1** indicate the **ENGAGE Add-On** fields.

Fields used for Taxonomy TSC assessment

- Fields with **N** are not optional for the TSC assessment for that economic activity.
- Fields with **Y** are not needed per se for the specific check, for that economic activity.

ND Options for the BUILDING BLOCK 0		ND Options for the BUILDING BLOCK 1				Building block 1: Field Optional for the calculation of:				Building block 1: Field Optional for the calculation of:	
ND1-ND4 allow	ND5 allow	ND1-ND7 allow	ND5 allow	FORMAT	Building block 0: Minimum level fields for	Minimum Safeguards	Section 7.7.1 - EPC class	Section 7.7.1 - Top 15	Section 7.7.2 or 7.1 - PED 10% lower NZ	DNSh 7.7	DNSh 7.1

We have transparently indicated per economic activity which data fields the ENGAGE Portal applies in the TSC assessment.



ENGAGE Output: EU Taxonomy Alignment Report

Section	Economic Activity	Subsection
7.1	Construction of new buildings	
7.2(1)	Renovation of existing buildings	Major Renovations
7.2(2)		Reduction of (net) Primary Energy Demand
7.3	Installation, maintenance and repair of energy efficiency equipment	
7.4	Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings)	
7.5	Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings	
7.6	Installation, maintenance and repair of renewable energy technologies	
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.
7.7(1a)		Buildings built before 31 December 2020 - Alternative: building is within Top 15%
7.7(2)		Buildings built after 31 December 2020

● New Constructions

● Renovations

● Existing/new buildings

ENGAGE Output

1. ENGAGE EUT Alignment report

This report provides a comprehensive overview of the portfolio's underlying exposures in the EUT assessment:

- Each (sub) section of the EU Taxonomy's economic activities is broken down into (partial) alignment.
- Offers greater granularity than DDA templates.
- Enables deeper insights into the nuances of the TSC, including SCC and DNSH.

The output is broken down in loans, collateral building (units), and balance.

2. EU Taxonomy Data Quality report

We have also developed an EU Taxonomy Data Quality report for mortgage loans, offering detailed insights into data completeness and portfolio quality.

We have transparently indicated per EUT economic activity which data fields the ENGAGE Portal applies in the TSC assessment.



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ENGAGE: EU Taxonomy Alignment Report



Portfolio Name
Portfolio Date (DD-MM-YY)

Example Portfolio 2024
01-08-2024

Total # of Loans
Total # of Building Units
Total Balance
TSC passed %

1300
1100
€444,600,000.00
50.94%

			TSC assessment*						TSC pass Total Portfolio											
Section	Economic Activity	Subsection	SCC (check passed)			DNSH* (check) passed			TSC Passed (SCC + DNSH)			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	% of all loans	% of total Building	% of total Balance	% of total loans	% of total Building	% of total Balance	% of total loans	% of total Building	% of total 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	35.38%	37.36%	30%	31.85%	33.64%	27%	31.62%	33.00%	27%
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	30.15%	27.36%	26%	27.15%	24.64%	23%	26.85%	27.36%	23%
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	1.77%	2.00%	2%	1.62%	1.82%	1%	1.62%	2.00%	1%
Total			875	734	€253,750,000.00	788	661	€228,520,000.00	781	686	€226,490,000.00	67.31%	66.73%	57.07%	60.62%	60.09%	51.40%	60.08%	62.36%	50.94%

Example of breakdown for Economic Activity 7.1 (Acquisition & Ownership of Real Estate)



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ENGAGE: EU Taxonomy Alignment Report



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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.



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
<i>Identifiers</i>	EREC1	Unique Identifier			
	EREC2	Underlying Exposure Identifier Building block 0			
	EREC3	Collateral Identifier Building block 0			
	EREC4	General Activity Designation	Y	Y	Y
<i>SCC 7.7</i>	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	
<i>DNSH</i>	EREC25	DNSH EO2 Indicator	Y	Y	Y
	EREC26	DNSH EO3 Indicator			
	EREC27	DNSH EO4 Indicator			
	EREC28	DNSH EO5 Indicator			
	EREC29	DNSH EO6 Indicator			
<i>Renovation SCC</i>	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			
<i>Financed Emissions</i>	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



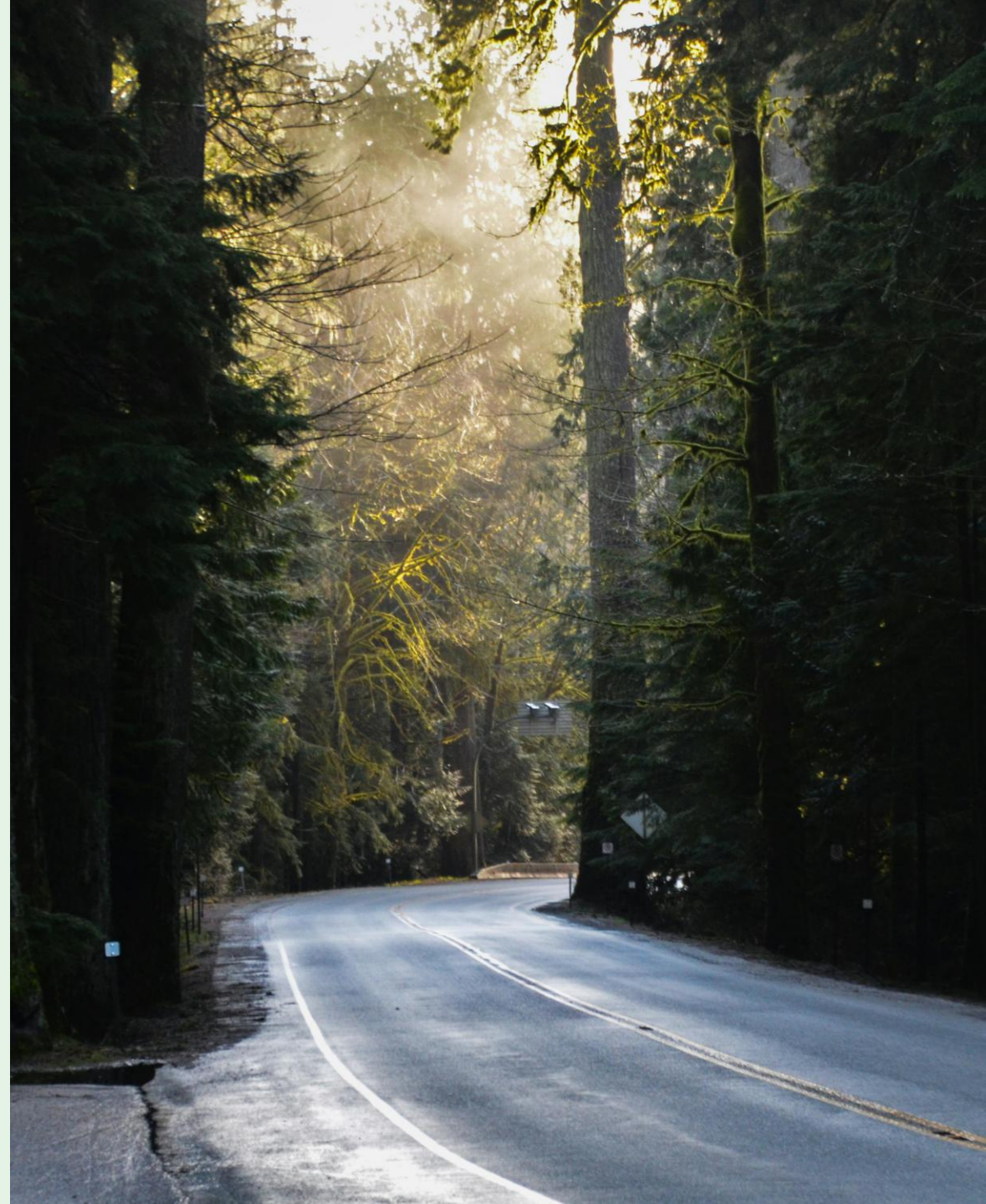
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V. How to get involved

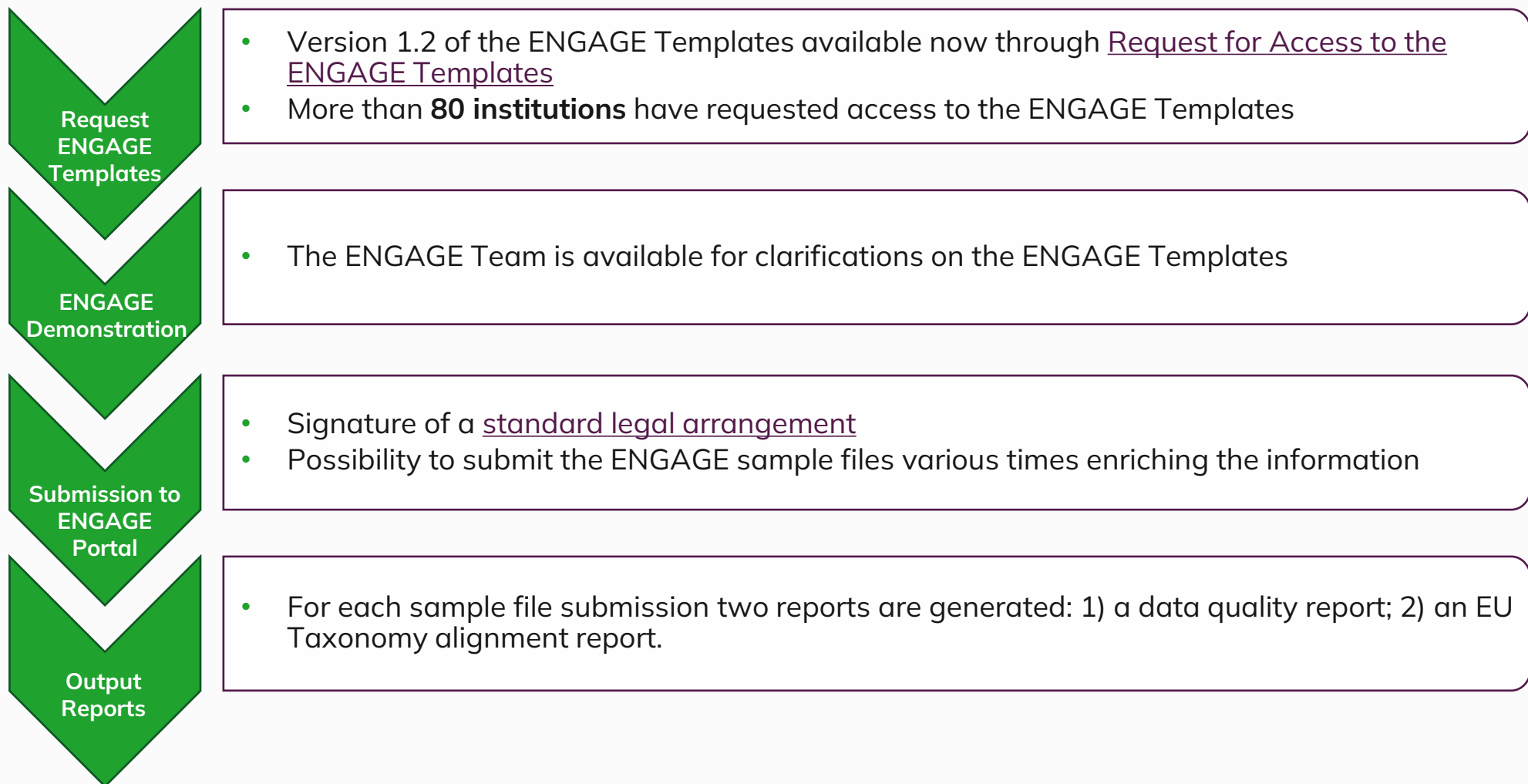
Marco Angheben

European DataWarehouse





Free ENGAGE trial period until June 2026





Why become a Trial User via the Portal





Upcoming events

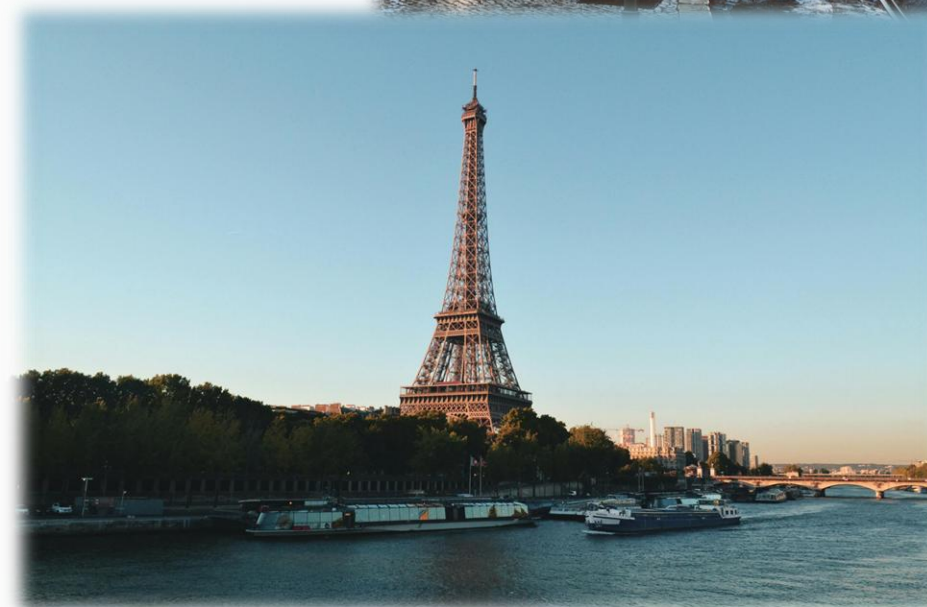
Let's meet in Lisbon and Paris!

European DataWarehouse's 2025 Portuguese Securitisation Event

- **Date:** Monday, 17 November 2025 at 14:00 (local time)
- **Venue:** Banco de Portugal, Lisbon, Portugal
- Register [here!](#)

European DataWarehouse's 2026 French Securitisation Event

- **Date:** Friday, 9 January 2026 at 14:30 (local time)
- **Venue:** Banque de France, Paris, France
- More details to come – Stay tuned!



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