BUILDING BETTER TOGETHER

How to Mitigate Climate Change Risk with Insurance

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Climate Risk and EU Green Mortgage Portfolios

Mortgage portfolios account for €7 trillion (33%) of EU banking assets, yet 97% of EU buildings are energy-inefficient, exposing banks to €900B+ in climate-linked losses since 1980*.

- Global warming and climate-change risks are a fundamental "systemic" shift for our planet
- Climate risk protection via traditional insurance covers is no longer sustainable in the long-term
- Direct and indirect exposures: the built environment & the financial sector as an example
- The new frontier: adaptation, mitigation paired with a new insurance approach

Integrating climate risk management into mortgage portfolios isn't just regulatory compliance – it's a strategic lever for de-risking and value creation.

Climate Risks in Mortgage Portfolios

For years, the real estate and insurance sectors relationship has been relatively stable, with balance asset owners managing risks while delegating a portion to insurers.

New Physical Risks:

- Floods, wildfires, and heatwaves devalue properties and increase default risks. ECB data shows banks charging 0.15–0.3% higher premiums in high-risk zones.
- Example: Italian banks now adjust loan terms for properties in Venice's flood-prone areas.*

New Transition Risks:

- Stranded assets: Buildings below "C" energy ratings face 20 30% value declines by 2030 under EU taxonomy rules.
- Carbon tax escalation could raise energy bills by 15%, impacting borrower solvency.

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*ECB Working Papers n 3036

Extreme Climate Events: a New Norm

Annual Global Mean Temperature Anomalies, relative to 1850-1900.



"Annual Clobal Mean Temperature Anomalies, Relative to 1850-1900." World Meteorological Organization. (2024)



Total Precipitation (2024 Jan-Sep), relative to 1991 to 2020.

Global Total Loss from Natural Disasters.



"Global Total Loss from Natural Disasters." Munich Re. (2024)



Total insured losses from natural disasters reached in 2024*

*Sustainability-Linked Insurance: REWARDING CLIMATE RISK ADAPTATION

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One Asset Impaired: the Stakeholders' Indirect Exposure

Limitations of Traditional Climate Risk Insurance

Insurance activated by the asset owner may not fully restore the asset's condition or the owner's financial stability.

Other stakeholders—such as lenders and supply chain partners—can suffer significant indirect losses, further worsening their own risk exposure.

Unless specific recovery ratios or indemnification clauses exist between asset owners and stakeholders, these parties remain fully exposed to losses.

Indirectly impacted stakeholders have no contractual rights to additional asset protection, leaving them vulnerable without recourse.

Regulatory Landscape & Market Solutions

Key Drivers:

Mortgage Portfolio Standards (MPS): Voluntary adoption under EPBD Delegated Act (2025) to align with NZBA targets.*

EBA Guidelines: Mandate climate stress testing and PCAF/SBTi metrics for financed emissions.

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^{*} Climate & Energy Partners – the EPBD Delegated Act process to synchronize regulatory developments, climate initiatives, and EU technologies – EBA Final Report 2025

Regulatory Landscape & Market Solutions

Case Study*:

Banks deemed "adequate" in ECB's 2023 review increased climate premiums by 40% postsupervision.

Toolkit:

Green Supporting Factor: Lower capital charges for energy-efficient mortgages (e.g., Hungary's 10% reduction**).

Securitization: Green RMBS issuance grew 58% in 2024, attracting ESG investors.

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** The Irish Green Building Council – making a case for green mortgages certified greenhouses May 2020

An example: the Built Environment Additional New Metric to Evaluate Climate Risks Impact

The built environment:

- 80% of the need till 2025 is already built
- Financial leverage
- Traditional metrics: loan/value; borrower's credit rating
- Investors more sensible to climate exposures
- Lending entities required to protect their balance sheet from climate risks

A new metric is being introduced. **Cvar: climate value at risk**. Designed to provide a forwardlooking and return-based valuation assessment to measure climate related risks and opportunities in an investment portfolio.

Risk Transfer Costs Influenced by Adaptation and Mitigation

Adaptation: investments into transitioning to a lower carbon economy.

Mitigation: investments directed at prevention or minimize the impact of climate risks.

Both investment types -

- Strengthen the asset resilience to climate risks
- Involve different stakeholders' interests

By aligning insurance innovation with climate scenario analysis (e.g. 2C vs 4C pathways), lenders can proactively manage both acute and chronic risks to mortgage portfolios.

Enablers to Maximize Cost Effective and Cost-Efficient Insurance Covers

What is needed:

- Data
- Triggers
- Monitoring technology
- Sound understanding of sustainable trigger levels
- Parametric insurance approach

The finance sector has already the aggregate exposures, based on the required regulatory disclosure and reporting activity.

It allows for lenders to cover the risk of collateral devaluation from unmitigated physical damage.

Cost Sharing as a New Approach to Make Insurance Cover Sustainable and Effective



How to flatten the curve:

- Adaptation and resilience mechanism
- Cost sharing for mitigation and adaptation intervention: public+private+community

Investing in adaptation measures is essential to lower overall risk costs. Beyond insurance, greater resilience reduces losses, speeds up business recovery, and can enhance brand and investor perception.

Risk Sharing as a New Approach to Make Insurance Cover Sustainable and Effective

Risk pooling across geographies is a proven strategy to mitigate climate-related financial exposures.*

Risk Pooling Mechanisms How it works:

- Multiple entities (banks, insurers, governments) aggregate risks across regions to reduce volatility.
- Geographic diversification ensures simultaneous disasters are statistically unlikely, lowering capital reserves needed for payouts.

Key benefit:

Reduces required reserves up to 45–55% for catastrophic events compared to isolated risk management

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*Royal Geographical Society Disaster Risk Pooling Enabling Mutual Cross-border Resilience April 2024 by The Foreign Commonwealth Office, Oxford University, The World Bank

Risk Sharing Application to EU Green Mortgages Proposed Architecture

Geographic Diversification in Practice Multi-state wind risk pooling (US Gulf Coast study):

| Portfolio | 100-Year Loss Reserve | Efficiency Gain |
|-------------------------|-----------------------|-----------------|
| Individual states | \$130B | Baseline |
| Multi-state aggregation | \$71B | 45.4% reduction |

Regional pools: Aggregate mortgages across EU climate zones (e.g., Baltic floodplains + Mediterranean wildfire zones).

Parametric triggers: Use ECB climate data (e.g., >35°C days/year) for automatic portfolio protection payouts.

Capital relief: Basel IV allows 10–15% risk-weight reduction for pooled green assets.

Example: A bank with €50B in green mortgages could lower climate capital buffers by €375M annually through cross-border pooling.

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*Royal Geographical Society Disaster Risk Pooling Enabling Mutual Cross-border Resilience April 2024 by The Foreign Commonwealth Office, Oxford University, The World Bank

Insurance and the Green Mortgage Initiative

Innovative insurance can complement green mortgages and underpin climate resilience, by offering premium discounts for energy efficient or climate resilient homes.

For example:

Premiums linked to green certifications (e.g. BER A-rated homes) reducing the borrower's financial burden and default risk

Dynamic pricing tied to retrofits (e.g. flood barriers), which enhances properties resilience and creditworthiness over time

Parametric Insurance Approach

Initially used for insuring Extreme Weather Events, this approach should be applied to a broader type of risks, like those regarding EEM.

Parametric insurance triggers automatic payouts based on predefined climate metrics (e.g. flood depth, wind speed, earthquake severity) rather than traditional claims assessment.

This helps borrowers quickly repair climate damaged properties, preserving asset value and stabilizing LTV ratios.

Some Examples of Insurance Innovative Covers Based on a Parametric Approach

Insurance linked securities (e.g. catastrophe bonds) allow lenders to transfer climate risks to capital markets.

By securitizing portfolio exposed to extreme weather events, for instance, banks mitigate potential losses from property value declines, indirectly protecting LTV ratios.

Same instrument can be applied to protect LTV at aggregate level.

These instruments also incentivize insurers to price risk more accurately, improving longterm modelling and lenders to be more accurate in calculating the CVaR of their portfolio.

Innovative Insurance Policies to Cover Secondary Risks and Indirect Exposures at Portfolio Level

- Innovative policies can offset secondary risks like rising insurance premiums in high risk zones.
- Premium subsidies for borrowers in floodplains who adopt resilience measures, preventing forced sales due to unaffordable coverage.
- (Re)insurance pools to stabilize premiums, reducing volatility in LTV calculations.

The financial sector can transfer its indirect exposure at aggregate level with a risk pooling based solution, strengthening their balance sheet climate resilience, optimizing capital allocation and increasing investors' confidence.

A Sustainability-linked Insurance Approach: a Real Example in APAC

Leading asset owners in APAC are already investing in adaptation to reduce long-term climate risk. The question now is how insurers will evolve - rewarding proactive resilience rather than only reacting to past losses.

In Hong Kong, one leading asset owner saw its insurance premiums jump by 117% in the aftermath of Super Typhoon Mangkhut in 2018.

Following its resilience focused insurance approach, the asset owner reduced its insurance premiums by 11.7% in 2025 compared to 2024.

This material cost saving can be critical to driving further resilience building.

This sustainability-linked insurance approach can also apply to new developments and retrofits that mitigate growing physical climate risks and require insurance coverage.

Closing Call-to-Action

The ECB's Anil Kashyap reminds us: '*Climate risk is financial risk*.' Banks that act now will future-proof assets and lead the low-carbon transition.

A 4-step roadmap

- 1. Adopt MPS →
- 2. Measure PCAF emissions →
- 3. Set SBTi targets →
- 4. Structure new insurances

with 2026/2030 milestones.



Thank you

Questions?

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