

*Influence & Impact
of
Climate risk
on the
Market Conduct
of
Banks*



AGENDA

- ❖ Frameworks Defining a Bank's Market Conduct
- ❖ Climate Regulatory Frameworks
- ❖ Climate Regulation Roadmap
- ❖ Climate related Impact on Banking Dynamics
 - Short-Term
 - Long-Term
- ❖ Challenges in Transition
 - Process
 - People
- ❖ Balance Sheet Projection & Analysis
- ❖ Extracts from Annual Reports



Frameworks SA Banks Market Conduct

❖ Financial Sector Conduct Authority (FSCA)

Oversees market conduct, consumer protection, and fair treatment of customers.



❖ South African Reserve Bank (SARB)

Sets prudential standards and monitors the soundness of banks.



❖ Treating Customers Fairly (TCF)

TCF is a global principle that promotes fair treatment of customers.



❖ Banking Association South Africa (BASA)

The industry body develops codes of conduct and best practices for its member banks.



❖ Conduct of Financial Institutions (COFI) Bill

Proposed legislation aims to streamline and strengthen the market conduct framework for all financial institutions, including banks.



Climate Regulatory Frameworks for SA Banks

- ❖ **SARB (Prudential Authority)** actively working on comprehensive framework

Actively monitoring climate-related risks and their potential impact on the financial system

- ❖ **Task Force on Climate-related Financial Disclosures (TCFD)**

Created in 2015 by the Basel-based Financial Stability Board (FSB)

Widely adopted internationally and provides a robust framework for climate-related financial disclosures

- ❖ **Principles for Responsible Banking (PRB)**

Developed by United Nations Environment Programme Finance Initiative (UNEP FI)

Provides guidance on how banks can align their business activities with the **Paris Agreement on Climate Change** and contribute to sustainable development

Programme themes

Elements of the SARB's climate change programme

1

REGULATORY FRAMEWORK

Assess and amend the regulatory framework to account for climate-related risks

2

SUPERVISORY FRAMEWORK

Assess and amend the supervisory framework to account for climate-related risks

3

STRESS TESTING

Integrate climate risk in the SARB's stress test capacity

4

MACROPRUDENTIAL FRAMEWORK

Apply the macroprudential monitoring framework to increase climate resilience

5

STRUCTURAL CHANGES

Understand the implications of the climate transition for price and financial stability

6

MONETARY POLICY GUIDELINES

Develop guidelines for monetary policy to respond to physical and transition-related risks

7

NET ZERO FOR CENTRAL BANKS

SARB actions to reduce its own carbon footprint

The SARB is focused on:

- ❖ ensuring that financial institutions and markets consider climate-related risks in their operations;
- ❖ understanding the impacts of climate change on inflation and financial stability and taking appropriate actions to mitigate against these risks; and
- ❖ greening its own operations.

Guidance on climate-related governance and risk practices for banks (G2/2024)

- Places the responsibility of climate-related risks (CRRs) on a bank's board of directors
- CRRs must be incorporated and integrated into the bank's established risk framework
- CRRs integrated into bank's Internal Capacity Adequacy Assessment Process (ICAAP)
- Scenario analysis and stress testing to develop a "forward-looking view" of CRRs
- Sets out the responsibilities of the bank's compliance and internal audit functions in respect of CRRs

Guidance on climate-related disclosures for banks (G3/2024)

- Describe the **climate resilience of the bank's strategy and business model** taking into account climate-related scenario analysis
- Describe the extent to which, and how, processes for CRRs are integrated into and inform the bank's overall **risk management**
- Disclose **metrics and targets** that enable stakeholders to evaluate the bank's exposure, measurement and management of CRRs
- Disclose **Scope 1, 2, and 3 GHG** emissions in accordance with the Greenhouse Gas Protocol

Identifying
Assessing
Prioritising
Managing
Mitigating
Monitoring

Basel Committee's initiatives on climate-related financial risks

13 Jun 2025	<u>A framework for the voluntary disclosure of climate-related financial risks</u> Type: O Other Status: Current Topics: Disclosure
16 Apr 2024	<u>The role of climate scenario analysis in strengthening the management and supervision of climate-related financial risks</u> Type: C Consultative Status: Closed Topics: Climate-related financial risks, Supervisory cooperation
06 Dec 2023	<u>The effects of climate change-related risks on banks: a literature review</u> Type: WP Working papers Status: Current Topics: Climate-related financial risks, Credit risk
29 Nov 2023	<u>Disclosure of climate-related financial risks</u> Type: C Consultative Status: Closed Topics: Climate-related financial risks
21 Nov 2023	<u>Newsletter on the implementation of the Principles for the effective management and supervision of climate-related financial risks</u> Type: N Newsletters Status: Current Topics: Climate-related financial risks, Supervisory cooperation
08 Dec 2022	<u>Frequently asked questions on climate-related financial risks</u> Type: F FAQs Status: Current Topics: Climate-related financial risks
15 Jun 2022	<u>Principles for the effective management and supervision of climate-related financial risks</u> Type: G Guidelines Status: Current Topics: Basel core principles, Climate-related financial risks, Governance
16 Nov 2021	<u>Principles for the effective management and supervision of climate-related financial risks</u> Type: C Consultative Status: Closed Topics: Basel core principles, Climate-related financial risks, Governance
14 Apr 2021	<u>Climate-related risk drivers and their transmission channels</u> Type: O Other Status: Current Topics: Climate-related financial risks
14 Apr 2021	<u>Climate-related financial risks - measurement methodologies</u> Type: O Other Status: Current Topics: Climate-related financial risks
30 Apr 2020	<u>Climate-related financial risks: a survey on current initiatives</u> Type: O Other Status: Current Topics: Climate-related financial risks, Credit risk, Liquidity risk, Macroprudential / systemic importance, Market risk

CLIMATE REGULATORY ROADMAP

- 1) Disclosures
- 2) Risk Management
- 3) Prudential Exposures
- 4) Stress-Testing
- 5) Product Standards
- 6) Greenwashing
- 7) Supervisory Reporting
- 8) Monitoring CRRs





In this section

Overview	Our approach to the transition	We aim to achieve net zero in our financed emissions by 2050, and in our own operations and supply chain by 2030.	▶ Page 45
	Understanding our climate reporting	To achieve our climate ambition we need to be transparent on the opportunities, challenges, related risks and progress we make.	▶ Page 46
Supporting our customers	Sustainable finance and investment	Our ability to help finance the transformation of businesses and infrastructure is key to building a sustainable future for our customers and society.	▶ Page 49
	Financed emissions	We aim to align our financed emissions to achieve net zero by 2050 and support our clients on their transition.	▶ Page 53
Embedding net zero into the way we operate	Net zero in our own operations	Part of our ambition to be a net zero bank is to achieve net zero carbon emissions in our operations and supply chain by 2030.	▶ Page 63
	Managing climate risk	We manage climate risk across all our businesses in line with our Group-wide risk management framework. Enhancing our climate change stress testing and scenario analysis capability is crucial in identifying and understanding climate-related risks and opportunities.	▶ Page 65
	Sustainability risk policies	Our sustainability risk policies seek to ensure that the financial services that we provide to customers do not result in unacceptable impacts on people or the environment.	▶ Page 66
Partnering for systemic change	Supporting systemic change to deliver net zero	We collaborate with a range of partners to support the development of an enabling environment and mobilise finance for nature and climate.	▶ Page 68
Our approach to climate reporting	Task Force on Climate-related Financial Disclosures ('TCFD')	Our TCFD index provides our responses to each of the 11 recommendations and summarises where additional information can be found.	▶ Page 69



CLIMATE RELATED LITIGATION FACING BANKS

- ❖ Legal arguments are emerging that banks have a **duty of care** to consider climate impacts in their operations. If not, their financing activities can violate human rights by contributing to climate change.
- ❖ The **scientific evidence linking human activities to climate change** is strengthening, making it harder for companies to deny their impact.
- ❖ Regulators, NGOs, and the public are becoming more **aware of the financial sector's role in contributing to climate change**, particularly through financing fossil fuel projects.
- ❖ **Landmark climate cases** against governments and corporations are setting precedents that can be applied to financial institutions.
- ❖ **Banks are facing scrutiny** and legal challenges for making misleading claims about their environmental sustainability or "green" initiatives i.e. greenwashing

MILIEUDEFENSIE v. ING BANK (2025 - ONGOING)



This NGO Won A Climate Case Against Shell. Its Next Target? Dutch Bank ING

On January 19, Milieudefensie (Friends of the Earth Netherlands) announced it is initiating [legal action against ING](#), the Netherlands' largest bank and a major funder of U.S. liquefied natural gas (LNG). In a [letter](#) addressed to ING CEO Steven van Rijswijk and the first step in litigation, Milieudefensie says it believes the bank is in breach of its “duty of care” obligation under Dutch law. “ING’s climate policy is miles away from what is necessary to achieve the 1.5°C target,” the letter asserts, referring to the Paris Agreement’s more ambitious climate objective. Since that agreement’s adoption in December 2015, ING has issued 83.2 billion euros in bonds to the fossil fuel industry, Milieudefensie says.

v.



Climate case

3 min read

On 28 March Milieudefensie (Friends of the Earth Netherlands) formally started a court case against ING regarding our climate action approach. This follows a long period of dialogue and correspondence.

We are confident in our approach to [climate action](#). We will not let a lengthy legal process distract us from taking the actions we need to take to tackle the climate challenge. Our focus continues to be on working with our clients to help them transition and be future-proof.

- > Milieudefensie starts climate case against ING (28 March 2025)
- > ING’s response to Friends of the Earth’s letter #2 (4 Feb 2025)
- > ING responds to Friends of the Earth (14 Feb 2024)
- > ING’s full letter to Friends of the Earth
- > ING’s response (19 Jan 2024)

LITIGATION AND LAWSUITS

- ❖ **Market Forces v. SMBC, MUFG and Mizuho (2018):** Some Japanese banks have also received complaints regarding their financing of coal power plants.
- ❖ **Australian Banks (2021 onwards):** Proceedings have been issued against Australian banks seeking access to documents to assess their compliance with the Paris Agreement in relation to their involvement with gas and oil projects.
- ❖ **ClientEarth v. Belgian National Bank (2021):** ClientEarth filed a lawsuit against the Belgian National Bank (BNB). ClientEarth alleged that the BNB's purchases of corporate bonds from greenhouse-gas intensive companies environmental protection requirements. ClientEarth later withdrew the case after the ECB accepted its legal obligations to consider climate in quantitative easing reforms.
- ❖ **BNP Paribas (2023):** Environmental groups sued BNP Paribas. It is alleged that the bank's involvement in new fossil fuel projects breaches duties owed under French law not to harm the planet (the "duty of vigilance").

- <https://climatecasechart.com/non-us-case/abrahams-v-commonwealth-bank-of-australia-2021/>
- <https://www.marketforces.org.au/market-forces-files-complaint-over-japanese-banks-coal-lending-breach-of-oecd-guidelines/>
- <https://climatecasechart.com/non-us-case/market-forces-v-smbc-mufg-and-mizuho/>
- <https://www.clientearth.org/latest/news/why-clientearth-is-suing-the-central-bank-of-belgium-for-climate-failings/>
- <https://www.oxfam.org/en/press-releases/french-ngos-take-bnp-paribas-court-worlds-first-climate-lawsuit-against-commercial>

FINES AND REGULATORY ACTION

❖ ASIC (Australian Securities and Investments Commission):

- ASIC has been actively focusing on greenwashing misconduct.
- In 2023-2024, they initiated civil penalty proceedings and issued infringement notices to investment managers, superannuation trustees, and ASX-listed companies for making sustainability-related claims without reasonable grounds or insufficient disclosure.
- For example, they obtained an \$11.3 million penalty against Mercer Superannuation (Australia) Ltd and a \$12.9 million penalty against Vanguard Investments Australia Ltd for greenwashing.

❖ U.S. Securities and Exchange Commission (SEC):

- NGOs have filed legal complaints with the SEC against banks (including Deutsche Bank, Barclays, Axis Bank, DBS Bank, and Emirates NBD Bank) over greenwashing claims related to sustainability-linked bonds.
- As climate reporting requirements evolve, the U.S. is expected to see more litigation in this area.

- <https://www.asic.gov.au/about-asic/news-centre/find-a-media-release/2024-releases/24-213mr-asic-s-vanguard-greenwashing-action-results-in-record-12-9-million-penalty/>
- <https://www.asic.gov.au/about-asic/news-centre/find-a-media-release/2024-releases/24-185mr-asic-continues-action-on-misleading-claims-to-deter-greenwashing-misconduct/>
- <https://www.sustainalytics.com/esg-research/resource/investors-esg-blog/double-trouble--the-rise-of-greenwashing-and-climate-litigation-for-banks>

CLIMATE RISK AND BANKING





CLIMATE RELATED IMPACT ON BANKING DYNAMICS

RISKS

- ❖ PHYSICAL
 - Infrastructure Damage
- ❖ TRANSITION
 - Regulatory challenges
 - Technological disruption
- ❖ LIABILITY
 - Litigation
 - Brand Damage

OPPORTUNITIES

- ❖ PRODUCT
 - Green finance
 - Sustainable investing
- ❖ PROACTIVE RISK MANAGEMENT
 - Build trust & credibility
- ❖ PARTNERSHIPS
 - Supply chain finance
 - Green Insurance
 - Climate Risk Analytics

CLIMATE RISK SHORT-TERM IMPACTS

LESS THAN 5 YEARS – PRIMARILY PHYSICAL & TRANSITION RISK

Credit risk

- Immediate default
- Financial difficulty
- Transitioning Industries

Market Risk

- Market fluctuations
- Adjustment to valuations affects balance sheet dynamics

Operational Risk

- Disrupt bank operations
- Investment in new systems

Liquidity Risk

- Deposit Outflows
- Increased borrowing requirements
- Mismatch risk
- Duration gap risk

Asset Quality

- Write-downs
- Impairments
- Technological advancements lead to impact on asset fair values.

CLIMATE RISK LONG-TERM IMPACTS

BETWEEN 5 TO 20 YEARS – PRIMARILY TRANSITION & LIABILITY RISK

Credit risk

- Shifts in climate patterns & failure to adapt to the low-carbon transition can create uncertainty, distress and impact productivity, leading to defaults/delinquency on loans.

Operational Risk

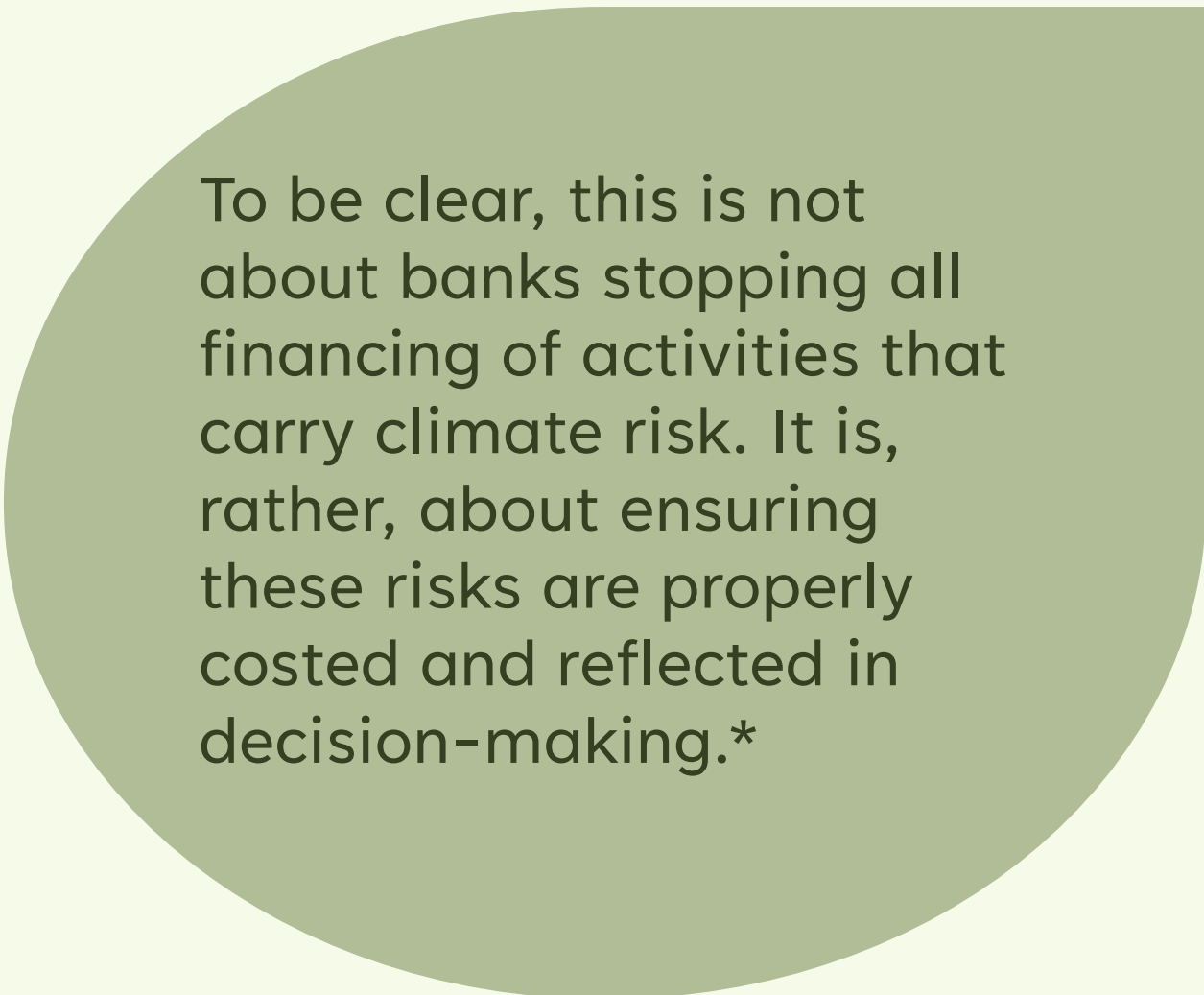
- Compliance costs and potential fines as regulations increase and are enforced
- Banks' reputation and brand value tied to stakeholder perceptions

Liquidity Risk

- Supply chain disruptions
Requirement to provide emergency funding to affected businesses.

Asset Quality

- Stranded Assets (e.g., fossil fuel reserves, coal-fired power plants) may lose value due to transitioning to a low-carbon economy.



To be clear, this is not about banks stopping all financing of activities that carry climate risk. It is, rather, about ensuring these risks are properly costed and reflected in decision-making.*

CLIMATE RISK CONSCIOUS BANKING



PROCESS CHALLENGES IN TRANSITION



Integration

- Risk Management
- Strategic & Business Model
- Credit Risk Assessment

Modelling

- Complexity
- Scenario Analysis
- Lack of established methods

Data

- Collection & Integration
- Lack of Standardization
- Gaps & Uncertainty

PEOPLE CHALLENGES IN TRANSITION



SHORT-TERM VS LONG-TERM CONSIDERATIONS

- ❖ Balancing short-term financial performance with long-term climate risks is a key challenge.
- ❖ Climate change is a long-term challenge, but banks often operate with a shorter-term focus.
- ❖ Traditional banking practice is short-term focused owing to
 - Performance measurement & incentivization based on annual or quarterly earnings
 - Investors and markets often prioritize short-term returns, which discourage banks from making long-term investments
 - Uncertainty surrounding the timing and magnitude of climate impacts can lead to discounting of future risks (hyperbolic discounting)

BALANCE SHEET FOCUS FOR CLIMATE RISK ASSESSMENT

- ❖ **Reflects the potential for asset impairment over time**
 - Loans to businesses in carbon-intensive sectors
 - Mortgages on properties in flood-prone areas
- ❖ **Assessing Long-term Structural Shifts in Industry**
 - Affects the long-term viability of businesses
 - Impacts the value of related bank asset and portfolios
- ❖ **Considering Interconnectedness and Systemic Risks**
 - Understand the interconnectedness of exposures across sectors and geographies
 - Assess the vulnerability to systemic shocks

BALANCE SHEET FACILITATES STRATEGIC PLANNING

❖ Projection and Analysis of climate scenarios

- Interaction of assets and liabilities
- Better understand long-term risk exposures

❖ Enhancing Strategic Planning

- Improve the strategic view of climate risk
- Integration of climate considerations into:
 - ✓ Business strategy
 - ✓ Lending policies
 - ✓ Funding and Liability management
 - ✓ Capital Allocation decisions

BASEL CLIMATE-SCENARIO ASSESSMENT

- ❖ **Short-term scenarios** can help assess **banks' vulnerability to more immediate changes** in economic and market environments resulting from shocks that have a short-term impact (three to five years), for example, those triggered by policy or regulatory changes.

- ❖ **Long-term scenarios** can be employed to study
 - the potential effects on **banks' profitability** and
 - the growth prospects of **economic structural changes**, such as
 - those related to a transition to a low-carbon economy or
 - the potential discontinued availability of insurance to absorb tail risks.

BASEL CLIMATE-SCENARIO CONSTRAINTS & CONSIDERATIONS

- ❖ Uses and methodologies vary across jurisdictions and banks
- ❖ Data availability and methodological uncertainty are limiting factors to fully incorporate CSA into banks' risk management frameworks.
- ❖ While transmission channels of climate-related financial risks are increasingly understood, many have not been entirely captured in CSA yet
- ❖ Key features and usage-specific considerations for CSA:
 - Motivation
 - Comprehensiveness
 - Plausibility
 - Coherence
 - Transparency
 - Tractability and
 - Proportionality

CURRENT CLIMATE MODELLING

- ❖ Characterized by climate complacency**
- ❖ Omission of Climatic tipping points that will likely result in self-reinforcing feedback loops, such as
 - the abrupt thawing of the Boreal permafrost, and
 - social responses like mass migration or conflict
- ❖ On the transition side, too often banks' models focus on a narrow set of variables – notably a rising carbon tax.
- ❖ Sector-specific transitions are assumed to follow a steady – rather than an accelerating path.
- ❖ Improbable narrow and cautious interpretation of the economic impacts of the clean technology revolution
- ❖ Leaves banks unprepared for the transformation to come and volatile transition risk

Climate risks building in banks' balance sheets, Natasha Landell-Mills (CFA),
<https://sarasinandpartners.com/stewardship-post/climate-risks-building-in-banks-balance-sheets/#storeindividual>

ADDRESSING CLIMATE RISK IMPACT

- ❖ Requires concerted & collaborative effort from banks, regulators, and other stakeholders
- ❖ Investing in data, analytics and modelling techniques
- ❖ Developing new methodologies & processes
- ❖ Building internal capacity – *jobs for actuaries*
- ❖ Fostering greater communication within and across stakeholders



ANNUAL REPORT EXTRACTS





How climate change is impacting our retail mortgage portfolio

As part of our 2023 internal climate scenario analysis, we completed a detailed climate risk assessment for the UK, Hong Kong, mainland China and Australia, which together represent 75% of the balances in our global retail mortgage portfolio.

Our analysis shows that over the longer term, we expect minimal losses to materialise when considering the Current Commitments scenario. Although the severity of climate perils is expected to worsen over time, our overall losses also remain low under a Downside Physical Risk scenario.

In 2023, we widened the scope of our climate modelling to include new markets, such as mainland China, and increased the peril coverage within markets already covered.

In our analysis of the retail mortgage portfolio, we reassessed the physical perils that could impact the value of properties, which include flooding, wildfire and windstorms. The underlying peril data we use has been enhanced to include updated and higher resolution flood maps where available. We have also worked with external vendors to improve outputs from peril projections and to increase the granularity of data to provide more detailed insights into the impact of climate risks across our portfolio of properties, in particular the impact of wildfires.

Our scenario analysis methodology was enriched further in 2023 by combining the impacts of physical risk with transition risks, including rising energy costs and impacts from direct government legislation such as homeowner energy efficiency upgrades in the UK. We have enhanced our modelling by considering customers' affordability incorporating increased debt servicing costs and the impacts on property valuations. As insurance remains a key mitigator against climate losses, we further refined our assumptions including the assessment of insurance availability for properties that experience frequent climate events.

Projected peril risk

Flooding has the potential to drive significant impacts at an aggregate level but this is localised to specific areas that are close to water sources such as rivers or the coast, or areas that are located in valleys where surface water can 'pool'.

The 'Exposure to flooding' table below shows that the majority of properties located in four of our largest markets are predicted to experience zero to low risk of flooding, with flood depths of less than 0.5 metres, under a 1-in-100-year event in each of the scenarios.

Flood depths outlined here do not consider building type and property floor level, which would potentially further mitigate the impacts. However, they are considered within our climate risk modelling and loss projections.

The table below sets out the proportion of properties with projected flood depths in a 1-in-100-year severity flood event, under the Current Commitments and Downside Physical Risk scenarios.

Exposure to flooding (%)¹

Number of properties ²	Flood depth (metres)	Scenarios		
		Baseline flood risk 2023 ³ (%)	Current Commitments 2050 (%)	Downside Physical Risk 2050 (%)
UK	0-0.5	97.4	97.4	96.9
	0.5-1.5	2.4	2.5	2.8
	>1.5	0.2	0.2	0.3
Hong Kong	0-0.5	85.3	81.4	79.5
	0.5-1.5	14.6	18.4	20.4
	>1.5	0.1	0.1	0.1
Australia	0-0.5	95.7	95.4	95.3
	0.5-1.5	2.9	3.0	3.1
	>1.5	1.5	1.5	1.5
Mainland China	0-0.5	88.0	86.5	84.7
	0.5-1.5	11.1	12.5	12.7
	>1.5	0.9	1.0	2.7

¹ Severe flood events include river and surface flooding and coastal inundation. The table compares 2050 snapshots under the Current Commitments and Downside Physical Risk scenarios with a baseline view in 2023. We do expect to see changes to our flood depth distributions as climate risk data is refreshed.

² The size of the bubbles represents the size of the portfolios, in terms of number of properties where exposure to flooding data is available, relative to one another.

³ Baseline flood risk is the flood risk for a 1 in 100 year event, based on current peril data.

How we aim to underpin our targets with transition strategies

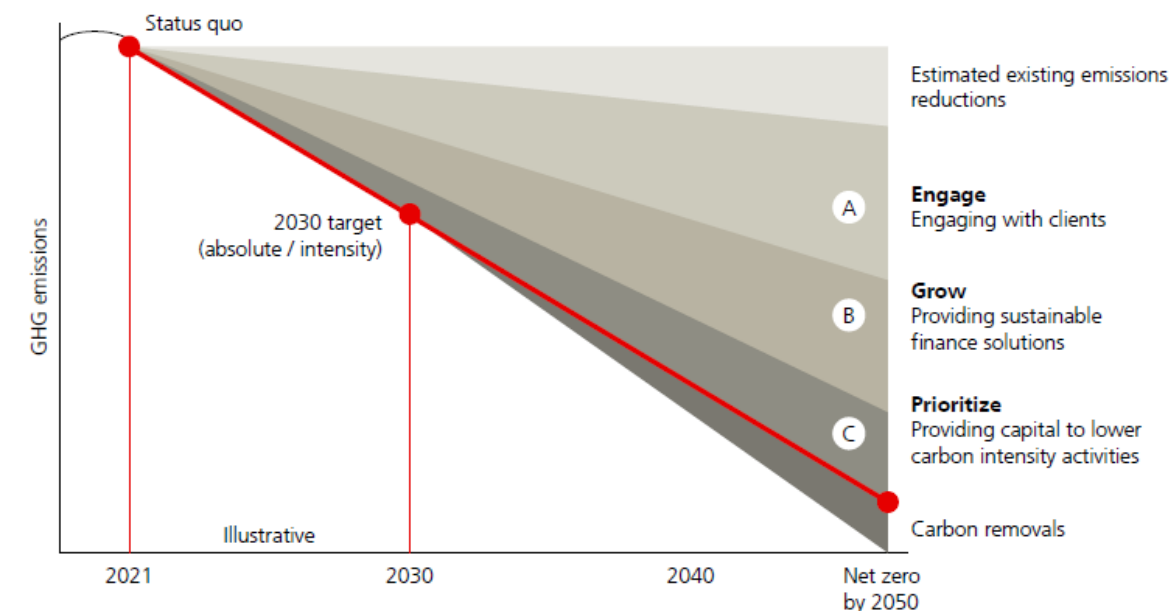
To underpin our targets and guide our transition strategies and actions, we followed a two-step process:

- assessing the overall emissions associated with UBS's in-scope lending portfolio, including Swiss real estate mortgages and estimated emissions reductions by 2030 (by business division and sector), considering client's historical emissions trends as well as public decarbonization commitments; and
- considering anticipated changes in the size and composition of our in-scope lending portfolios arising from lending structures and business strategy.

Alongside these estimated emissions reductions, we defined three key transition strategy levers where we believe we can have an impact and facilitate additional emissions reductions to reach our targets.

Our transition strategy levers

Illustrative glidepath to net zero

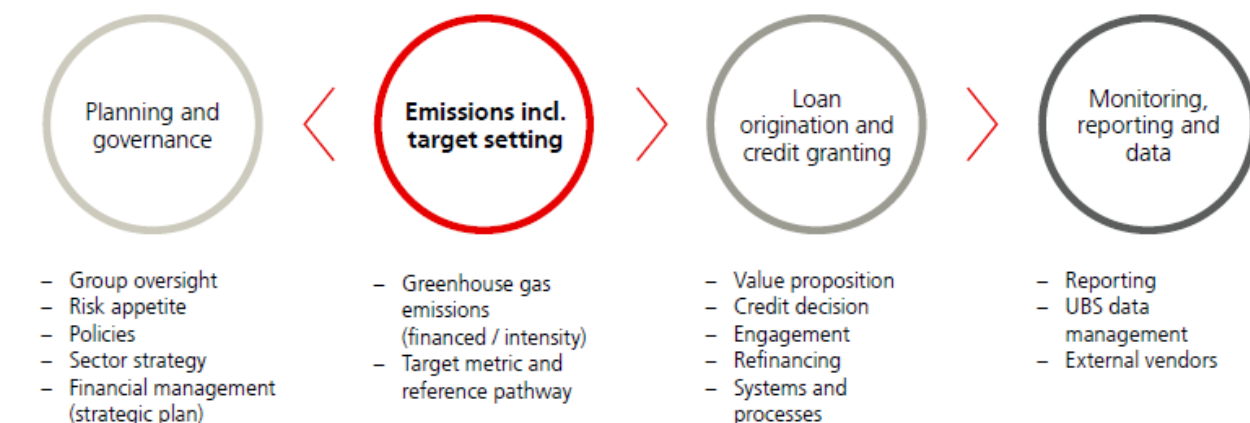


Sustainable lending operating model

To operationalize our approach to climate, it is important to embed sustainability and climate considerations into our lending operating model, leading to regular adjustment of evaluation and decision-making frameworks, governance structures, control and monitoring processes, and underlying systems.

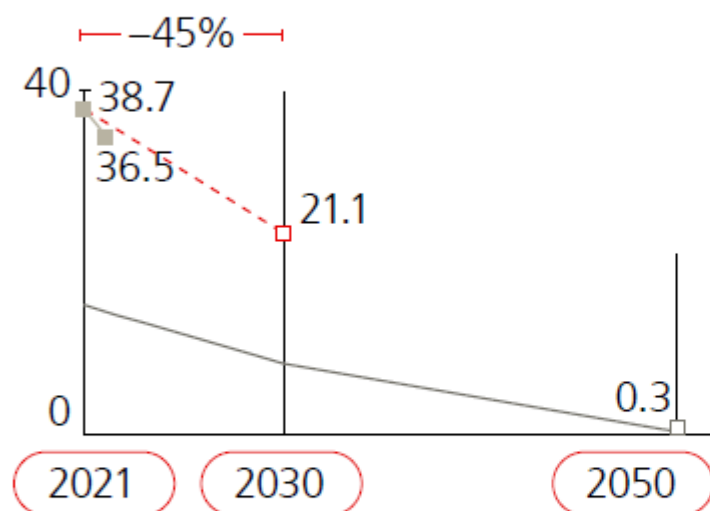
For example, following the acquisition of the Credit Suisse Group, UBS reassessed the emissions and targets for sectors with a high-carbon impact for the combined organization. To operationalize our target approach, we are reviewing whether our planning and governance processes, risk appetite, sector strategies, and so on are still appropriate. In parallel, we are assessing required enhancements to our loan origination, credit granting, monitoring and reporting processes.

Building blocks of the sustainable lending operating model



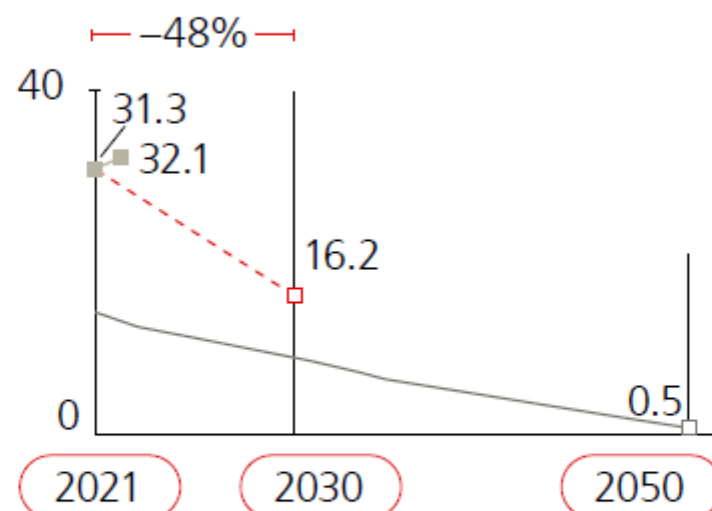
Overview of lending sector decarbonization targets and progress¹

Swiss residential real estate²
kg CO₂e/m² ERA³



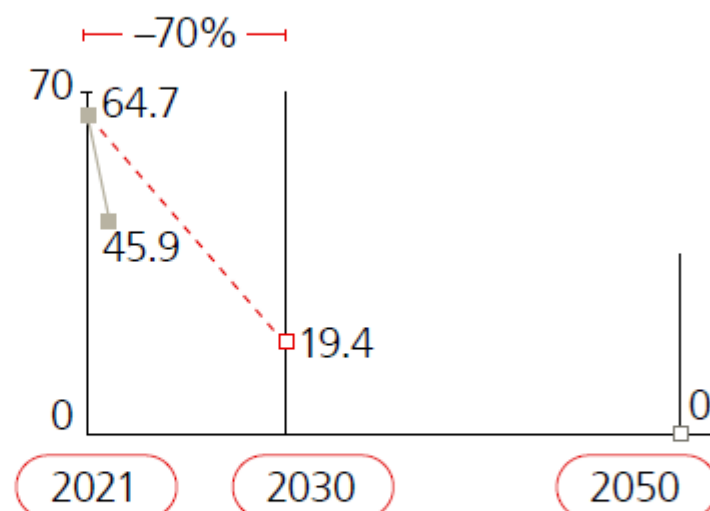
- UBS actuals □ UBS target
- 2050 convergence point
- Implied Energy Perspectives 2050+ ZERO Basis – residential buildings
- Indicative trend line to 2030 target

Swiss commercial real estate²
kg CO₂e/m² ERA³



- UBS actuals □ UBS target
- 2050 convergence point
- Implied Energy Perspectives 2050+ ZERO Basis – residential buildings & services
- Indicative trend line to 2030 target

Fossil fuels
million metric t CO₂e



- UBS actuals □ UBS target
- 2050 convergence point
- Indicative trend line to 2030 target

10.7 Task Force on Climate related Financial Disclosure (TCFD) content index

	TCFD Recommendations	Reference in this Annual Report	Reference in Climate Finance Report 2022 - June 2023
Governance	a Describe the board's oversight of climate-related risks and opportunities.	2.2 Governance; 9.2 Main regulations and governance	3. Governance; 5. Metrics and targets - Action plan - Power generation sector alignment
	b Describe management's role in assessing and managing climate-related risks and opportunities.	2.2 Governance; 9.2 Main regulations and governance; 2.3 Risk Management; 2.5 Supporting our customers in the green transition	3. Governance; 6. Financing the green transition - ESG governance in Santander Asset Management
Strategy	a Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.		
	b Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	2.1 Our strategy and ambition	2. Strategy - Climate risks and opportunities; Resilience of Santander's strategy. Scenario analysis
	c Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.		
Risk Management	a Describe the organization's processes for identifying and assessing climate-related risks.		
	b Describe the organization's processes for managing climate-related risks.	2.3 Risk management	4. Risk management - I. Identification; II. Planning; III. Assessment; IV. Monitoring; V. Mitigation; VI. Reporting
	c Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.		
Metrics and Targets	a Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	2.4 Metrics and targets	5. Metrics and targets - Aligning our portfolio to the Paris agreement
	b Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	2.7 Our environmental footprint; 8.6. Green Transition - Environmental Footprint 2023-2023	5. Metrics and targets - Decarbonization targets - Financed emissions; Our environmental footprint
	c Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	2.4 Metrics and targets	5. Metrics and targets - Decarbonization targets

References in this report are included in the Responsible banking chapter. For more details TCFD recommendations, see our Climate Report 2021-June 2022 available on our corporate website. Progress has been made on some of these recommendations since the publication of the Climate Finance Report in July 2022

Decarbonization targets

	Sector	Scenario	Emissions	Metric	Baseline	2020	2021	2030 targets
	Power generation	IEA Net Zero 2050	Scope 1	tCO ₂ e/MWh	0.21 (2019 baseline year)	0.17	0.19	0.11 (-46%)
	Energy (Oil & Gas)	IEA Net Zero 2050	Scope 1 + 2 + 3 ^A	mtCO ₂ e	23.84 (2019 baseline year)	22.58	27.43	16.98 (-29%)
	Aviation	IEA Net Zero 2050	Scope 1 + 2	gCO ₂ e/RPK	92.47 (2019 baseline year)	93.05	97.21	61.71 (-33%)
	Steel	IEA Net Zero 2050	Scope 1 + 2	tCO ₂ e/tS	1.58 (2019 baseline year)	1.40	1.36	1.07 (-32%)
	Auto manufacturing	IEA Net Zero 2050	Scope 3 ^A	gCO ₂ /vkm	149 (2020 baseline year)	149	138	103 (-31%) ^B
	Auto lending^C	IEA Net Zero 2050	Scope 1 + 2	gCO ₂ e/vkm	137 (2022 baseline year)	N/A	N/A	75-89 (-35-45%)
	Thermal coal	Phase-out targets to eliminate exposure by 2030 to power generation customers with a revenue dependency on coal of over 10%, and thermal coal mining						

^A Use of sold products.

^B Target reduction is -25% vs 2021 reference

^C Consumer lending for the acquisition of passenger cars, covering a significant majority of the exposure in Europe.

Power generation

Our portfolio includes corporate clients as well as project finance (PF) deals. In 2021, our emission intensities slightly increased from 0.17 in 2020 to 0.19 tCO₂e/MWh. The main causes were (i) reduction of the relative weight of renewable PF in the overall portfolio; and (ii) temporary adverse climate conditions such as drought in Brazil (which caused hydroelectric generation to be replaced by conventional generation). However, our corporate clients' emission intensities improved.

Energy (Oil & Gas)

The absolute financed emissions of our portfolio increased 4.85 mtCO₂e from 2020 to 2021. According to the IEA (International Energy Agency), global energy-related carbon dioxide emissions rose 6% in 2021 to 36.3 billion CO₂e tons, their highest ever level. The increase in drawn exposure (used to calculate financed emissions) has been driven by the post-COVID economic recovery and the global price increases in 2021, causing financed emissions to rise with it.

Aviation

Emission intensity increased from 93.05 in 2020 to 97.21 gCO₂e/RPK in 2021, driven by a reduction in the exposure to some of the less polluting customers, while the emission intensities of individual airlines started to normalize in the second COVID-affected year. The materiality of this sector in terms of exposure and financed emissions declined in a trend that should spill over into the coming years. With the current levels of sustainable aviation fuel (SAF) and efficiency gains, we see the decarbonization in the aviation sector happening slower than expected.

Steel

Reduction in emission intensity from 1.40 to 1.36 tCO₂e/tonS was mainly driven by improvements of individual clients. Availability of reliable data is especially challenging in this sector as a significant amount of our customer base is yet to report GHG emissions.

The **automotive sector** is one of the key sectors to tackle in the transition to a low-carbon economy. According to the International Energy Agency (IEA), road transport accounts for over 15% of global energy-related emissions. The switch from internal-combustion engines (ICE) to electric vehicles (EV) and plug-in hybrid electric vehicles (PHEV) is the most important decarbonization lever for this sector.

We are helping our auto manufacturer customers adapt their business models and product offering towards EVs and PHEVs.

As we are a leading auto end-user lender in Europe, we are also helping our retail customers finance purchases of an increasing number of EVs and PHEVs.