

Insurer Climate Risk Disclosure Survey for Reporting Year 2023

Section A

Group Name: Zurich American Insurance Company and Affiliates

Group No. 0212

Section B

NAIC Number	Company Name	Mailing Address
26247	American Guarantee and Liability Insurance Company Domicile: NY	1299 Zurich Way Schaumburg, IL 60196
40142	American Zurich Insurance Company Domicile: IL	1299 Zurich Way Schaumburg, IL 60196
34347	Colonial American Casualty and Surety Company Domicile: IL	1299 Zurich Way Schaumburg, IL 60196
21326	Empire Fire and Marine Insurance Company Domicile: IL	1299 Zurich Way Schaumburg, IL 60196
21334	Empire Indemnity Insurance Company Domicile: OK	1299 Zurich Way Schaumburg, IL 60196
39306	Fidelity and Deposit Company of Maryland Domicile: IL	1299 Zurich Way Schaumburg, IL 60196
26387	Steadfast Insurance Company Domicile: IL	1299 Zurich Way Schaumburg, IL 60196
16535	Zurich American Insurance Company Domicile: NY	1299 Zurich Way Schaumburg, IL 60196
39039	Rural Community Insurance Company Domicile: MN	3501 Thurston Avenue Anoka, MN 55303
90557	Zurich American Life Insurance Company Domicile: IL	150 Greenwich Street 4 World Trade Center 54 th Floor New York, NY 10007
14178	Zurich American Life Insurance Company of New York Domicile: NY	150 Greenwich Street 4 World Trade Center 54 th Floor New York, NY 10007
27855	Zurich American Insurance Company of Illinois Domicile: IL	1299 Zurich Way Schaumburg, IL 60196

NAIC Number	Company Name	Mailing Address
41181	Universal Underwriters Insurance Company Domicile: IL	1299 Zurich Way Schaumburg, IL 60196
40843	Universal Underwriters of Texas Insurance Company Domicile: IL	1299 Zurich Way Schaumburg, IL 60196

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Governance: Sustainability is embedded in our governance framework

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The Board of Zurich Insurance Group Ltd has ultimate responsibility for the success of the Group, for delivering long-term sustainable value within a framework of effective controls. It sets our values and standards. As part of its strategic responsibility, the Board approves our sustainability strategy and objectives, including non-financial targets with a material impact on the company or the Group. It is supported by its Board Committees within their respective core mandates:

- The Governance, Nominations and Sustainability Committee (GNSC) recommends the sustainability strategy and objectives, reviews the transition plan and exercises oversight on sustainability-related matters.
- The Audit Committee provides oversight on sustainability reporting.
- The Risk and Investment Committee provides oversight of risks (including sustainability risks).
- The Remuneration Committee evaluates the remuneration architecture, including incentive plans which are linked to appropriate performance criteria supporting the execution of the strategy.



Sustainability is simply about how we do business. We believe social responsibility and care for our planet are aligned with shareholders' interests.

Katja Roth Pellanda
Group General Counsel



Individual performance of the ExCo members for the 2023 short-term incentive plan (STIP) awards is assessed against financial and non-financial targets. The non-financial targets relate to customers and employees. In addition, consideration is given to execution against strategic priorities, including ESG factors and a risk-based review, to determine the final individual performance assessment outcome.

The Group's long-term incentive plan (LTIP) is used for a defined group of the most senior positions, including the ExCo. For the 2023-2025 financial cycle, the metrics include the relative total shareholder return position, average business operating profit after tax return on equity, cumulative net cash remittances, as well as operational CO2e emissions.

The members of the Board receive fixed remuneration as an annual fee, of which half of the basic fee is paid in cash and half in five-year sales-restricted shares which are not subject to the achievement of any specific performance conditions.

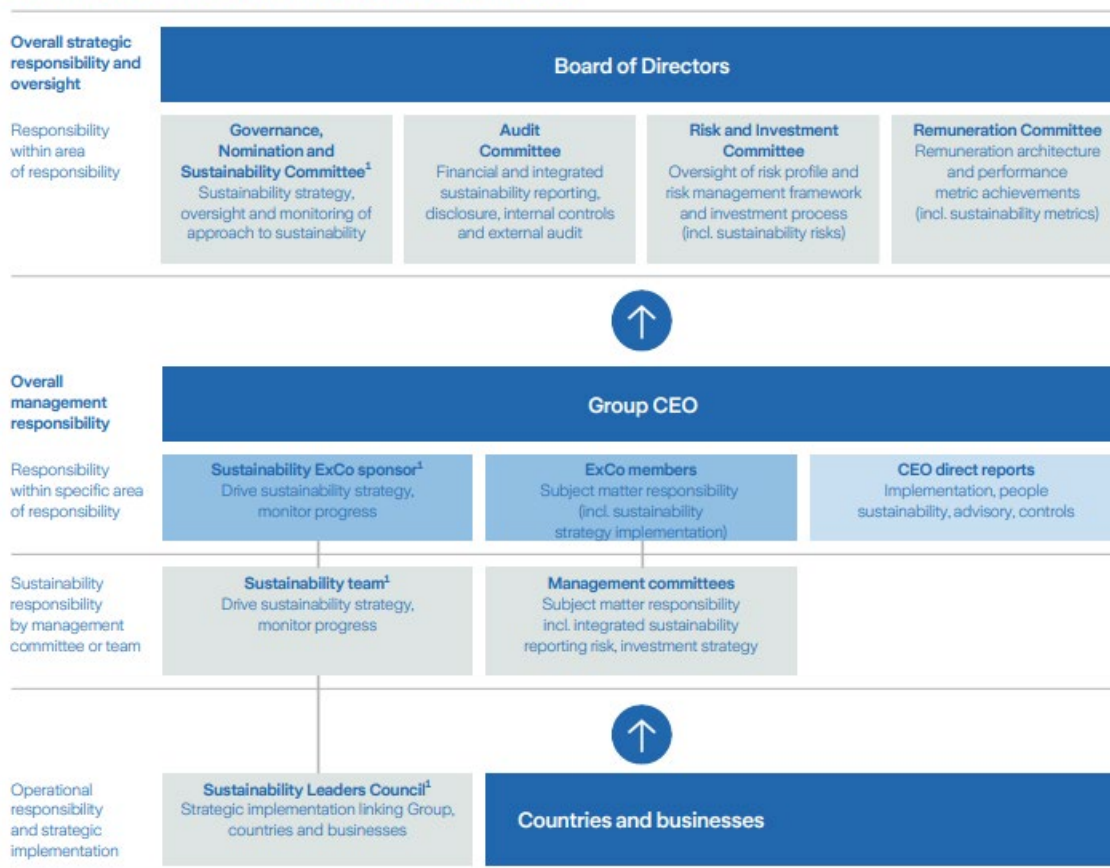
At management level, accountability for different areas of expertise, including sustainability aspects related to each of these areas, is assigned to an ExCo member or a Group CEO direct report. In addition, the Group CEO has designated the CEO EMEA & Bank Distribution as the ExCo level sponsor for Sustainability (Sustainability ExCo Sponsor). This role is supported by the Group Head of Sustainability and the Group Sustainability team. The sponsorship includes driving our Sustainability Framework and acting as a sounding board for strategic alignment of global sustainability priorities to assure a consistent approach and to facilitate oversight. The Sustainability ExCo

Sponsor is also responsible for monitoring progress with respect to the sustainability priorities and targets and reporting thereon to the Board's GNSC, the Group CEO and the ExCo.

By opting for an integrated approach, our existing governance bodies are responsible for sustainability-related topics that concern their field of expertise.

The implementation of the sustainability strategy and objectives in the businesses, functions, regions and countries is facilitated by the Sustainability Leaders Council (SLC). The SLC comprises senior executives from across the Group and is chaired by the Group Head of Sustainability and sponsored by the Sustainability ExCo Sponsor.

Sustainability is embedded in our governance framework



¹ Sustainability-specific responsibilities.

Our planet: Drive positive impact

Our planet

Taking action today to safeguard tomorrow.

We focus on enabling a positive socio-economic and environmental transition, while at the same time building resilience to evolving risks. A stable climate and healthy, diverse natural environment are critical to continuing human and economic development. As such, our revised Sustainability Framework expands our environmental focus beyond climate. Environmental challenges including nature loss and climate change can impact all sectors of the real economy which we insure and invest in, and ultimately can have significant impacts on a company's long-term value. Understanding, measuring and managing these impacts - while seizing the opportunities that arise from the transition to a net-zero world - is essential to creating sustainable value for our stakeholders. We aim to use our underwriting and investment activities, our operations, the collective skills and experience of our workforce and an engaging, collaborative approach with our stakeholders to address these challenges and create long term value.



When integrating sustainability into our business, we see mitigation and adaptation to climate change as one of our key priorities.

Linda Freiner
Group Head of Sustainability



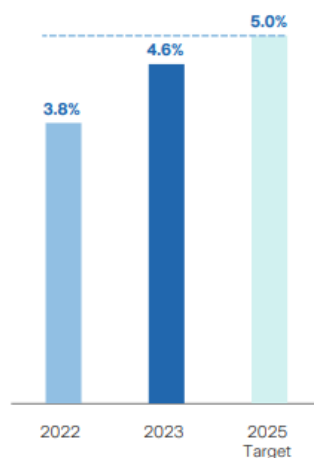
- 4.1 Strategy
- 4.2 Governance
- 4.3 Risk management
- 4.4 Metrics and targets

Scenario-based climate risk analysis

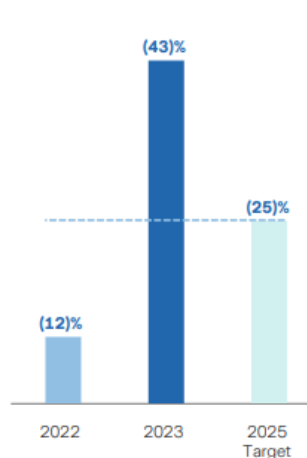


Resilient strategy confirmed

Share of total assets in impact investment %



Reduction of financed emissions %



This section presents our disclosure in line with the recommendations of the TCFD. It outlines our understanding of the potential impacts of climate risk to our underwriting, investment activities as well as our own operations including supply chain. It represents our assessment of the resilience of our strategy to climate change risk. Also outlined is the governance we have established to make climate and sustainability an executive-level responsibility, our climate risk management processes and finally the metrics and targets we have implemented to track delivery of our stated targets. While climate change is the focal point of this section, we are dedicated to environmental aspects in a broader sense, e.g., revenues resulting from sustainable solutions, see Chapter 5. Our customers: Their needs are at the heart of everything we do (pages 180 to 191).

1.1 Strategy

The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy and financial planning.

Our approach to climate change focuses on supporting companies and people through the transition to a net-zero economy and demonstrates our commitment to using every lever of our business, from underwriting and investments to our operations, to accelerate this transition.

1.1.1 Our approach to climate change risk

Understanding and managing the impact of climate change is an important aspect of maintaining our short- and long-term profitability. Our approach to climate risk is part of our risk management process. It is managed in a way that is consistent with other risks to which the Group is exposed. Our approach acknowledges that while some impacts of climate change are felt today, others may take decades to manifest. We therefore employ a number of approaches and tools to achieve a holistic understanding of potential impacts. Assessments of the evolving physical and transition risk landscape are integrated into our underwriting and investment strategies.

Natural catastrophe modeling

To manage our short-term climate risks more effectively, we are investing in improving our understanding of them. Modeling the effects of physical risk on our portfolios is a key focus. We combine global circulation models and natural catastrophe models to provide a forward-looking view of the impact of changing natural catastrophes on our portfolios at the spatial resolution required for integration in our accumulation-risk and peril-region modeling. Based on our work so far, it has become clear that model adjustments are required in some peril regions to reflect the impact of climate trends on physical risk today.

Portfolio level scenario-based climate risk analysis

Our annual scenario-based climate risk analysis is our most prominent and detailed outside-in risk evaluation. Leveraging scenarios developed by the Network for Greening the Financial System (NGFS) and considering our core underwriting and investment portfolios, this analysis allows us to better understand potential risks associated with the transition to a net-zero economy over time horizons extending beyond the financial cycle horizon, something fundamental to formulating appropriate strategic responses and evaluating the resilience of our strategy. This analysis also helps us identify the lines of business in which we have an opportunity to support certain industries in their transition to net-zero. We employ a static balance sheet approach, fully recognizing that the analysis is a theoretical "what if" exercise, which is useful to stretch management thinking about the medium to long-term outlook, but not to inform insights from an immediate solvency, financial or capacity management perspective.

1.1.2 Introduction to climate-related risks

We broadly categorize climate-related risks as physical and/or transition risk and outline below the potential impacts of these risks on our business. In sections 4.1.5 to 4.1.9 (pages 148 to 161) we discuss our own assessment and the expected impact from climate-related physical and transition risk. We outline our understanding of how climate change risk could impact our business activities, mainly focusing on the impact on demand (revenues) and losses (claims) from an insurance perspective and on assets from an investment perspective.

The section below should be read as an overview of expected effects of both physical and transition risks, while the scenario analysis provides more details on how each of these risks is expected to unfold and impact our business under different scenarios.

Physical Risks

Figure 8

Climate-related physical risk

Greenhouse gas (GHG) emissions are leading to an increase in global surface temperatures, which is driving changes in climate and weather systems across the globe. Changes in extreme weather events can be attributed to human-induced increases in global surface temperatures with research suggesting continuing trends in emissions will further exacerbate the situation.

These developments will bring negative economic and societal impacts as extreme weather events increase in severity and frequency or undergo geographic shifts. The scientific understanding of how weather events will respond to climate change varies greatly, but we assume that further temperature increases will accelerate sea-level rise due to thermal expansion and melting of glaciers and ice sheets. It will also lead to more extreme temperatures, heatwaves and droughts, impacting agricultural production and human productivity.¹ As the warming atmosphere will also intensify evaporation, more extreme precipitation and variability in the global water cycle is seen as highly likely.

There is less certainty around how other weather events will react to climate change, such as tropical and extra-tropical cyclones, severe convective storms and hail. Secondary effects of climate change can also have negative impacts, such as extreme heat and drought leading to more wildfires, or the combination of sea-level rise and changes in hurricane intensity or tracks leading to higher storm-surge damage.

Impact to demand and loss profiles

Up to 2030, we expect changes driven by climate change to become increasingly relevant. However, these changes stop short of becoming a dominant loss driver over and above what is currently embedded into our risk appetite. We expect the inherent volatility and natural variability of extreme weather events and socioeconomic trends will continue to have a stronger influence on loss experience. Natural variability comes both from random fluctuations of extreme but rare events and multi-year variations in regional climate systems, such as the El Niño Southern Oscillation or Atlantic Multidecadal Oscillation. This variability is also embedded in historic loss trends and taken into account in our pricing and capital management.

Socioeconomic trends, such as an increase in asset values and accumulation through population growth and concentration in urban areas, also contribute to increases in losses over time. The impact of such trends is considered

in pricing and modeling, such that annual policy renewals provide mitigation against increasing physical risks for short-tail business and mitigate transition risk to the underwriting portfolio.

Through certain lines of business, we can be directly impacted by the changes in physical risk caused by climate change, particularly through increases in severity and frequency of natural catastrophes, such as tropical cyclones, flood or hail, which can lead to higher losses by customers covered by our property policies. Other lines are less sensitive to physical risk and, within these, only a minority of our losses are driven by natural catastrophes (see section 4.1.3 Natural catastrophe modeling: current exposure to physical risk, pages 141 to 144).

Impact through valuation changes

Buildings may be at risk, due to their fixed locations, of suffering significant damage costs from the impact of climate change. We are currently exploring ways to assess physical risks for properties using our risk model on catastrophes and by integrating data into our central portfolio management system. The valuation of assets in our investment portfolio can also be affected by direct and indirect exposure to physical risk.

Businesses will be directly affected by impact on costs and revenues and the potential for supply chain disruptions and asset write-offs. The vulnerability of countries to physical risk, including costs associated with infrastructure and adaptation measures, disruptions and vulnerability to extreme weather events, may also have an impact on the valuation of sovereign debt.

Transition Risks

Figure 9

Climate-related transition risk



If society moves to limit global warming in line with the Paris Agreement to below 2°C, and optimally to 1.5°C, the required decarbonization of the global economy will bring its own set of risks. The legal, policy, technological and market changes necessary for the transition will lead to significant shifts in economic activity and asset valuation.

Impact to demand and loss profiles

The expected steep rise in carbon prices and the removal of subsidies on carbon-intensive resources and activities in this transition could lead to reduced profitability, stranded assets and impairments in sectors that are difficult to decarbonize and where additional costs cannot be passed on to customers. This will, in turn, affect demand for insurance from shrinking sectors.

For example, the transition will shift demand for insurance toward low-carbon technologies and products, creating opportunities for companies that provide new solutions or are able to reduce their emissions more efficiently than competitors.

The aggregate effect of transition risk will vary greatly across individual actors, depending on their detailed business models, assets and transition strategy. This complicates the assessment of aggregate transition impacts.

There will also be aggregate macro effects arising in a transitioning scenario, including the impact on economic activity, inflation and, potentially, government borrowing costs.

As new policy measures and technologies are rolled out, uncertainties around their effectiveness and unintended consequences are likely to increase, with higher market volatility and uncertain loss ratios among possible outcomes. Transition risk will be highly dependent on how predictable policy responses are and the time available for the economy to decarbonize. More disruptive impacts can be anticipated with a faster transition.

Impact through valuation changes and other drivers

In the commercial real estate sector, transition risk will manifest from the need to adhere to tighter policies, carbon and energy costs, market preferences and challenges to achieve energy efficiency, and may impact asset values. The transition will also bring legal or litigation risks. Carbon-intense energy producers are already defending lawsuits seeking to hold them accountable for their alleged historical contribution to CO2e emissions. This current litigation could expand to other industries whose operations contribute to CO2e or other climate-impacting emissions. Companies may be sued for failing to disclose climate-related risks, for failing to mitigate the impact of their activities on climate change, for allegedly misrepresenting their level of climate impact, or for failing to adapt to the changing climate. Asset managers could be sued for financing climate change-inducing activities, or for inadequately driving emission reductions in their portfolios.

The global transition to a low-carbon society will also bring with it new and emerging technologies. These could also present new opportunities as well as unanticipated risks and new environmental concerns from both a resourcing and disposal aspect. Extreme weather events could present new risks to employers regarding worker safety or to companies engaged in building design, engineering and construction. Governments could enact laws seeking to hold companies accountable for the climate impact of their supply chains.

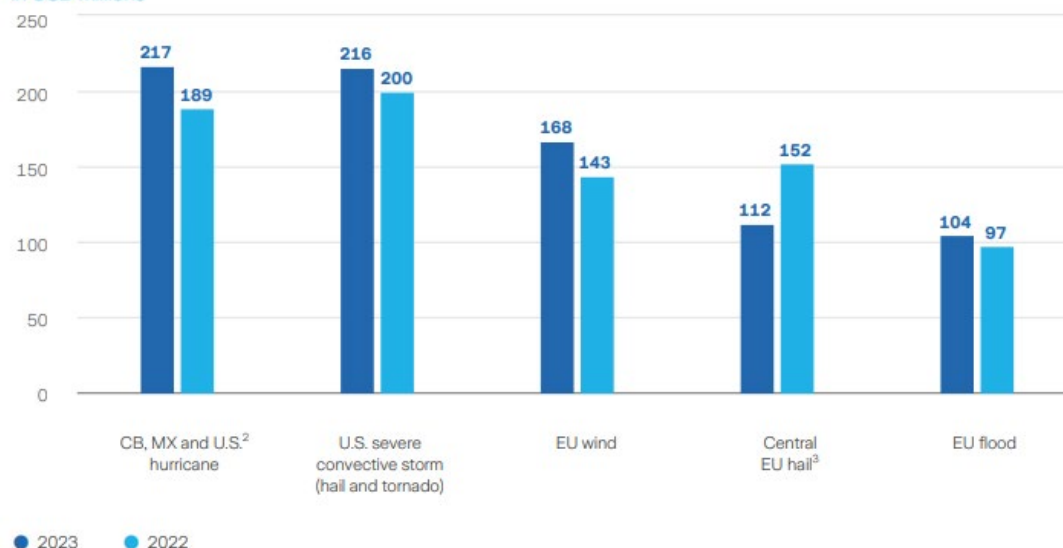
1.1.3 Natural catastrophe modeling: current exposure to physical risk

Approach Current exposures to physical climate risk are expressed through Annual Expected Loss (AEL) and Probable Maximum Loss (PML). Modeled exposures are shown below. ² Our approach to modeling is discussed further in the section on managing risks from climate-related natural catastrophes (page 163). We highlight how various drivers including exposed insurance portfolio and vulnerability changes, model updates, exposure data quality, foreign exchange rates and reinsurance can influence natural catastrophe modeling output (e.g., AEL, PML) over time.		
Scope The climate risk assessment is applied to our portfolios, namely the exposure of our Property and Casualty business to natural catastrophe perils, impacted by climate change that could materially impact us.		
Quantification		
AEL AEL provides a view on the expected loss due to natural catastrophes per year, averaged over many years.	PML PML is a tail metric that looks at severe, unexpected but still possible outcomes of natural catastrophes at a defined probability of occurrence.	Monetary losses Amount of monetary losses attributable to insurance payouts from natural catastrophes.

Figure 10

Annual Expected Loss for top five peril regions¹

in USD millions



¹ AEL excludes Farmers Re's participation in the Farmers Exchanges' all lines quota share treaty of 10 percent as of 31 December, 2023. This treaty contributes to Zurich Group's AEL for U.S. severe convective storm with USD 112 million and for U.S. hurricane with USD 19 million.

² The hurricane model was enhanced since the last reporting leading to about 20 percent higher gross AEL. 2023 is reported based on the enhanced hurricane model and therefore reflects the model change in addition to exposure, reinsurance and exchange rate changes. The geographic scope includes correlated exposure in the Caribbean (CB) and Mexico (MX). The AEL for U.S. hurricane only is USD 203 million in 2023.

³ The central EU hail model was enhanced since the last reporting leading to about 27 percent lower AEL. 2023 is reported based on the enhanced central EU hail model and therefore reflects the model change in addition to exposure, reinsurance and exchange rate changes.

Our modeled AEL from climate-related natural catastrophes provides an indicator of our current exposure to perils that might be affected by climate change. The AEL analysis above reflects our current top five peril regions, net of reinsurance, before tax and excluding unallocated claim adjustment expenses. This analysis helps us manage risks related to insuring these perils, such as accumulation risk. Risk appetite limits by peril region are in place and exposure is currently within appetite.

2023 numbers generally reflect exposure, reinsurance and exchange rate changes since the last reporting. The increase for U.S., Mexico and Caribbean hurricane is driven by a model change. It is noted that the gross hurricane exposure for the U.S. only, decreased in line with our underwriting strategy. The decrease for Europe severe convective storm is also driven by a model change.

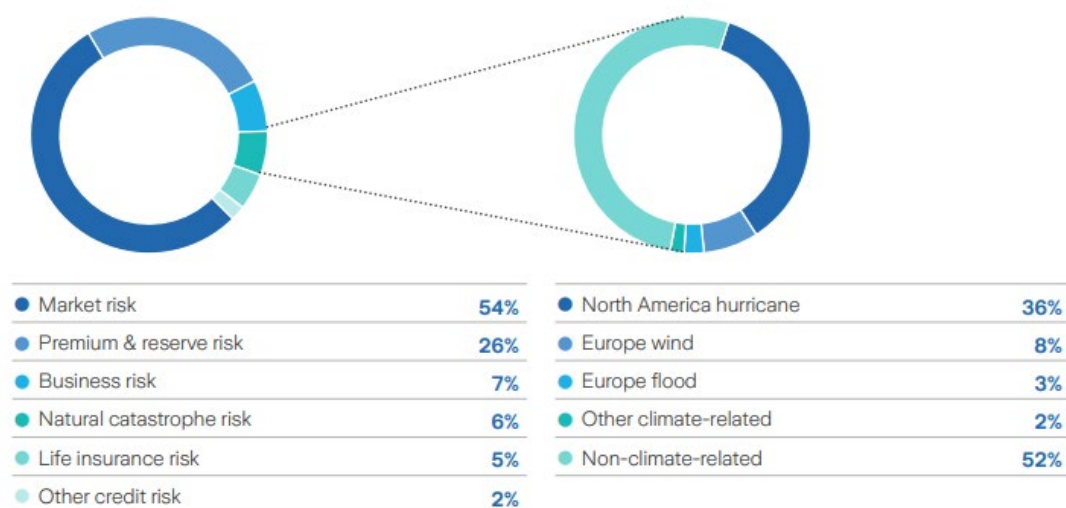
Probable Maximum Loss

The graphs below show the materiality of catastrophe risk relative to other risk types and the materiality of our climate-related perils to overall catastrophe risk.

Figure 11

Swiss Solvency Test (SST) by risk type and climate-related perils as proportion of natural catastrophe total SST

SST total risk capital contribution by risk type

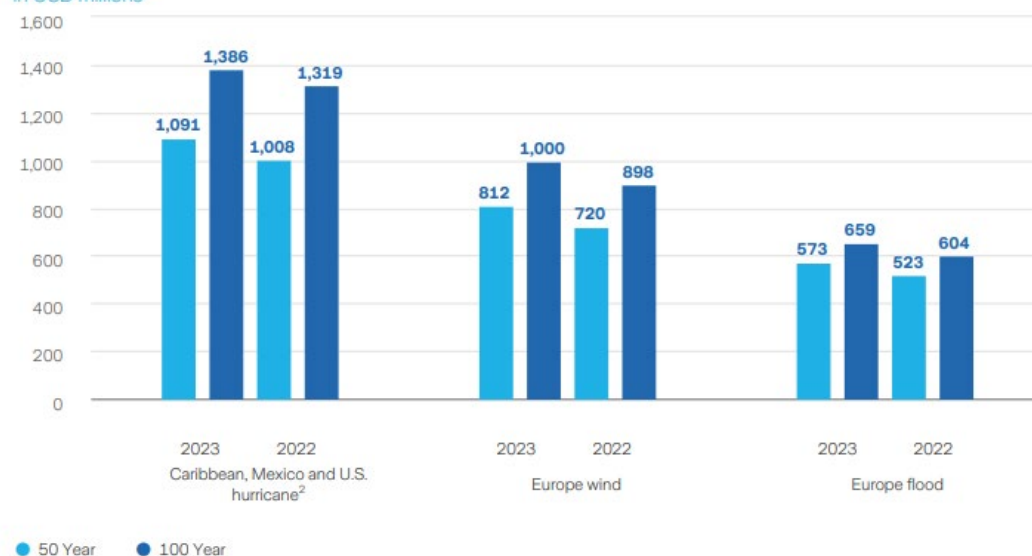
Climate-related perils as a fraction of nat cat SST total risk capital¹

¹ The natural catastrophe SST total risk capital is defined by the 1 percent worst annual losses. These are driven by peril regions with large potential losses beyond 100-year return period (e.g. North America hurricane).

Figure 12

Probable Maximum Loss by top three peril regions¹

in USD millions



¹ PML excludes Farmers Re's participation in the Farmers Exchanges' all lines quota share treaty of 10 percent as of 31 December, 2023. This treaty increased Zurich Group's PML for US hurricane by USD 94 million for the 50-year PML and by USD 112 million for the 100-year PML.

² The hurricane model was enhanced since the last reporting leading to higher 50- and 100-year PMLs. Both 2022 and 2023 exposures are reported based on the new model. 2023 is reported based on the enhanced hurricane model and therefore reflects the model change in addition to exposure, reinsurance and exchange rate changes.

The net annual aggregate 50- and 100-year PML are shown above for the top three peril regions measured by SST total capital contribution.

2023 numbers generally reflect exposure, reinsurance and exchange rate changes since the last reporting. The increase for U.S., Mexico and Caribbean hurricane is driven by a model change.

Total monetary losses from natural catastrophes

Our loss ratio for 2023 was 66.2 percentage with 0.7 percentage points attributable to the following natural catastrophe experienced in 2023. We follow the Group's Catastrophe Response Group (CRG) governance for natural catastrophe identification. Here we report events where the total net loss is above USD 200 million. The European hail event and figure has been reviewed by the CRG, a cross-functional committee which oversees and recommends to the ExCo the best-estimate ultimate loss for material catastrophes. The term "catastrophe" in the context of the CRG covers both man-made and natural catastrophe peril events that are relatively infrequent or are phenomena that produce unusually large aggregate losses.

Table 3

Total amount of net losses¹

Event name (by event and region)	Total net losses in USDm (2023)
European hail events (hail, Europe)	310
Total	310

¹ Only events above USD 200 million are reported.

An important aspect of our proprietary view on natural catastrophe risk is the evaluation of patterns and trends in catastrophe activity with time. Natural variability of event activity is an integral part of our view on natural catastrophe risk, as are statistically significant trends that may be detectable in our claims experience or credible, conclusive modeling of past, present and future climate as a driver of loss activity. We regularly revisit our risk views and underlying models on climate-related perils in order to reflect trends in the hazard, whereas exposure trends are naturally captured by exposure data updates. Natural variability is at the same time evaluated and kept up-to-date as part of the regular reviews of our natural catastrophe risk view, which underpins the structuring and purchase of reinsurance along with the profitability assessment and strategic capacity allocation for risk assumed from customers.

We follow a gross-line underwriting strategy and focus substantial time and resources on ensuring risk-adequate underwriting and pricing of the business we assume up-front, including consideration of potential climate change induced trends. Reinsurance is used as a means to maximize diversification of net retained risks and to protect shareholders against earnings volatility. We engage with a core panel of reinsurance partners to secure the required capacity at sustainable pricing over the medium term. Given our financial strength, we have the option to weigh the benefits and cost of reinsurance against other forms of risk financing and thus adapt to supply-side changes in the reinsurance market as a potential consequence of the macroeconomic response to climate change adaptation.

1.1.4 Portfolio level scenario-based climate risk analysis

In the following chapters, we assess climate-related risk and opportunities in the context of our business: underwriting, investment management and own operations.

Analysis framework

Scenario analysis allows us to assess the strategic implications of climate change over time horizons extending beyond the financial cycle horizon and assess the resilience of our strategy to potential climate risks. This section outlines the time horizons, scenarios and quantification approaches used.

Time horizons

We consider medium- and long-time horizons to be most relevant to our scenario-based analysis of climate risk.

	From (years)	To (years)	Comment
Short term	0	3	This is aligned with our financial cycle horizon. Over this timeframe, we adapt pricing, underwriting and portfolio management strategies based on observed trends in claims and model insights, hence scenario-based climate risk analysis is less relevant.
Medium term	3	10	While we operate with a three-year financial cycle horizon, a consideration of longer time horizons allows us reflect potential risks and opportunities associated with climate change in the formulation of appropriate responses.
Long term	10	30	While the three to 10-year horizon suits the formulation of strategic responses to potential climate related impacts, our net-zero commitment requires that we extend our time horizons to 2050 to consider more fully the potential risks and opportunities associated with aligning our business with a net-zero future. Such time horizons are well suited to certain long-term risks such as real-estate investments and life assurance risks.

Scenarios used The scenarios used to analyze our underwriting and proprietary investment portfolios are drawn from the Network for Greening the Financial System (NGFS) suite, with scenarios chosen to cover a relevant set of emissions pathways. The emissions pathways of the selected scenarios correspond broadly to representative concentration pathways (RCP) 2.6 and 6.0.

Net-zero 2050 limits global warming to 1.5°C through early adoption of stringent climate policies and innovation. Net-zero emissions reached around 2050, giving at least a 50 percent chance of limiting global warming to below 1.5°C by the end of the century, with no or low overshoot (<0.1°C) of 1.5°C in earlier years.

Delayed transition assumes no new climate policies until 2030 with high regional variation in policy implementation. Emissions exceed the carbon budget temporarily and decline more rapidly to ensure a 67 percent chance of limiting global warming to below 2°C.

Current policies assume that only currently implemented policies are preserved, leading to high physical risks. Emissions grow until 2080 leading to about 3°C of warming and severe physical risks.

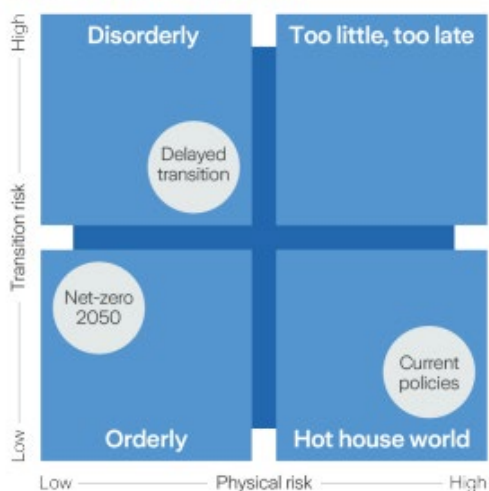
The scenarios underpinning the analysis of our underwriting and investment activities are chosen to allow us consider a broad range of risks and opportunities of varying degrees of physical and transition risk.

The scenarios used to understand physical risk impacts to our own Operations are broadly aligned with those used for our insurance and investment analysis in terms of the RCPs assumed (RCP 2.6 and 8.5).² Our scenario analysis leverages a third-party model and associated data to assess both our insurance and investment businesses. A highlevel overview of the model, data sources and key assumptions are provided in the risk management section (pages 162 to 164).

Our disclosure focuses on both net-zero 2050 and current policies scenarios to demonstrate the resilience of our strategy in both net-zero aligned and high physical risk future states.

Figure 13

NGFS scenario framework



Quantification

Given the differing nature of the underlying activities, we employ different approaches to understand and quantify potential impacts of climate risk.



Underwriting

Quantification is performed to underpin our medium-term assessment (to 2030). This approach is reasonable for determining how to manage identified risks due to the flexibility of the annual policy renewal cycle. Outcomes of our medium-term analysis are used to inform strategic and risk responses. Impacts to 2050 are analyzed qualitatively.

Two metrics have been chosen to quantify scenario-based impacts of climate risk on our insurance business:

- Percentage change in demand is the estimated impact on size and composition of demand for insurance products due to the drivers of physical and transition climate risk in each scenario, compared with a 2030 baseline.
- Percentage change in expected losses is the estimated impact on claims due to the drivers of physical and transition climate risk in each scenario, compared with a 2030 baseline.

For both metrics, the baseline does not take into account any further climate action or climate change relative to present-day levels but reflects modeled impacts on demand (or losses) from GDP changes and industry sector growth or decline.



Investment Management

To allow us to better understand potential future impacts of climate risk on key asset classes, we conduct quantitative analyses for 2050.

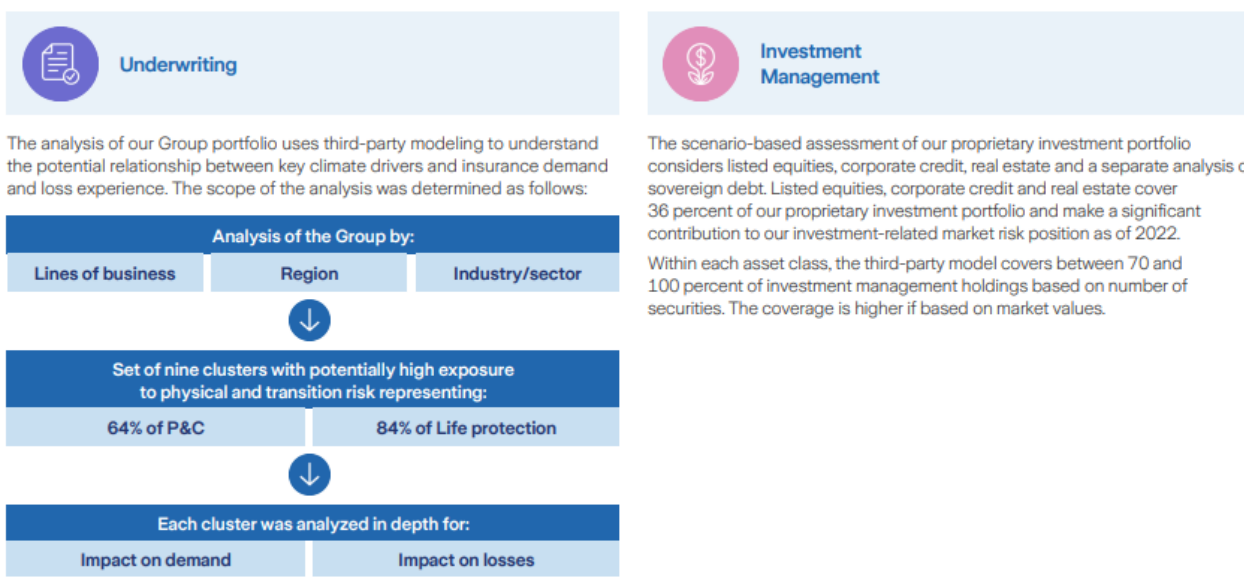
The valuation of equity in the scenarios involves discounting future revenues and costs to arrive at a net present value of future cash flows.

Corporate credit impact is estimated by translating changes in equity valuations to changes in fixed-income instrument default risk and associated loss, using a ratings-based Altman Z-score¹ model and the Frye-Jacobs PD-LGD relationship,² respectively.

Real estate impairments due to transition and physical risk are estimated by country and property type. Transition risks are based on country level emissions data for residential and commercial real estate (scope 1 and 2). For the physical risk impacts to real estate, a third-party risk model is used, including coastal flooding, river flooding and tropical cyclones. The combined impact of transition and physical risks is calculated by multiplying the reduced valuation associated with impacts from transition and physical risk.

Sovereign bond impact reflects the macroeconomic shocks arising from changes in energy consumption, energy costs and the physical risks of climate change, as well as the response of governments and central banks to those shocks. The model uses macroeconomic outputs from NiGEM³ to calculate changes in nominal forward interest rates and changes in default risk premia per risk scenario.

Scope⁴



1.1.5 Portfolio level scenario-based climate risk analysis – Underwriting

Underwriting analysis

- Monitoring of our P&C business indicates no material shifts to our medium-term risk profile.
- Medium-term demand impacts to our Life Protection business are noted to increase owing to several factors, including increased scope and changes to underlying data.
- No material shifts in the P&C underwriting portfolio industry or line of business mix were observed. No material changes in response are deemed necessary and we continue to execute against previously identified priority areas.

Analysis performed

Monitoring of our P&C business focused on identifying material shifts¹ in business mix (e.g. changes in line of business, industry and region mix) that may indicate a potential change to currently understood impacts. Revised natural catastrophe exposures based on updated catastrophe model results are considered part of monitoring.

The scope of the P&C analysis remained unchanged from previous cycles with focus on Europe and North America, reflecting the footprint of our business. The scope of our Life protection analysis was increased to include APAC in addition to our most significant exposures across EMEA and LATAM.

Analysis findings

No material shifts in the P&C underwriting portfolio industry or line of business mix were observed, with key drivers of change identified as increased rates, changing commodity prices and inflation (e.g. costs of construction) rather than increases in exposure or coverage.

Overall impacts to Group level P&C demand in 2030 under the scenarios modelled and with no change in assumptions are estimated to be of low materiality. For the net-zero 2050 scenario, the impact of rate change in construction and property as well as a higher growth rate in renewable energy that offsets a decline in premiums from the fossil fuel industry could drive increased upside opportunities. However, given the nature of rate change and commodity prices, we believe the impact would not be material when fully modeled. Note that where growth opportunities highlighted in the current policies scenario relate to the increase of fossil fuel supply, we expect to forgo opportunities that are not aligned with our net-zero commitments.

In both scenarios, impacts to Group-level P&C loss experience are observed to be more pronounced before mitigating actions are considered, due to the potential negative impact of physical losses related to weather events.

Estimated impacts to demand for Life protection policies in 2030 are observed to increase to medium under the current policies scenario and just above the threshold for high under the net-zero 2050 scenario. These increases were driven by the inclusion of higher levels of physical risk assumed in underlying NGFS scenarios and the addition of acute physical risk. Corporate risk business continues to be well diversified across industry sectors.

Our medium-term risk profile is presented below.

No material shifts in the P&C underwriting portfolio industry or line of business mix were observed. No material changes in response are deemed necessary and we continue to execute against previously identified priority areas.

Figure 14

Potential climate change-related impacts to our underwriting portfolio under current policies and net-zero 2050 scenarios with strategically aligned responses

Sector	Line of business	Portfolio weight	Demand impacts		Loss impacts		Responses
			Current policies	Net-zero 2050	Current policies	Net-zero 2050	
All sectors	Retail and commercial motor						Monitor loss trends associated with electric vehicles to reflect appropriately in pricing. Optimize claims network for emerging technology.
All sectors	Property						Continue best-in-class CAT modeling, accumulation management and continued development of Zurich Resilience Solutions. Reshape portfolios in case of current policies.
Construction	–						Optimize expected growth in construction by continuing to balance risk across the portfolio and understanding risks associated with changing construction methods.
Financial services	–						Continue the strong lens on ESG related factors as part of the underwriting risk assessment within Financial Lines, with a focus on customers' climate-related reporting.
Agriculture	–						Continue investment in models to develop insights at commodity, product and country level to help adjust the mix. Assess potential growth in private products.
Heavy industry and mining	–						Leverage carbon capture and storage as well as knowledge of energy for customers developing own solutions. Explore customer activities around transition to understand growth opportunities.
Fossil fuels	–						Understand customers' transition plans and how Zurich can support. Increased focus on risk engineering maintaining facilities that may be in run-off.
Power	–						Grow market share in renewables to maximize growth above that modeled. Continue to build on existing specialist knowledge to manage risk.
All sectors	Life protection						Commercial sales expected to trend to sectors with high growth. Continue to develop monitoring of factors affecting vulnerability to climate including loss impacts.

Portfolio weight (% of GWP)	Impact thresholds
● High (>10%)	● High risk (managed through Group actions)
● Medium (5–10%)	● Medium risk (managed through local actions)
● Low (<5%)	● Low risk (managed through local actions)
	● Low growth (managed through local actions)
	● Medium growth (managed through local actions)
	● High growth (managed through Group actions)

Definition of terms used:

- Sector: Industry group of the customer base except for transport, which was considered together with the total motor book, and property, which was considered across industry due to the overarching impact of physical risk associated with climate change.
- Weight in underwriting portfolio: Indicates how much the sector/geography/line of business being considered contributes to the overall underwriting portfolio.
- Demand impacts: High, medium and low risk relate to the potential decline in premium volume due to the various scenarios whereas high, medium and low growth indicate that there is a potential increase in premium due to the changing landscape driven by transition.
- Loss impacts: High, medium and low as above relate to the potential increase in losses in each sector if no strategic or mitigating action is taken as part of the underwriting strategy.

Conclusions and responses

In general, the diversification of both P&C and Life protection business in terms of geographic footprint, industry mix and line of business limits our potential exposure at a total Group level.

We can flexibly adapt our responses to balance near-term market movements against the mid-term strategic scenario expectations. With our portfolio mix remaining stable, no broad adaptations are required, and we continue to prioritize actions in markets and industries that are potentially the most material to our business, either due to the size of the underwriting portfolio or the potential impact of transition or physical risk on our portfolios.

Based on our analysis, we do not expect material impacts to fee income received from Farmers Group, Inc. through to 2030.

Underwriting focus on building capabilities and continuing assessment on risks associated with both the transition and physical impact of climate change.

Retail and commercial motor: a closer look

Expanded focus on technological advancements in driving and vehicles.

Identified action following climate risk scenario analysis 2021

We increased focus on monitoring profitability trends associated with electric vehicles (EVs) to adjust our propositions appropriately. Additionally, we are seeking to optimize claims networks for emerging technology and expanded focus on technological advancements in driving and vehicles.

Rationale

Among the changes affecting mobility, from a climate perspective the transition from internal combustion engines (ICEs) to alternatively fuelled vehicles, mainly EVs, is most relevant. As overall motor insurance premium volume and the proportion of EVs continue to grow in many of our markets, the risk of a shrinking premium pool can be mitigated by harnessing these new technologies and their implications for the insurance industry. While the share of EVs in new vehicle registrations is already increasing considerably, even in high-income economies, it will take at least a decade until EVs represent half or more of cars driven on the roads. Such a gradual change over a decade and longer can be deceptive as impacts can go unnoticed without dedicated monitoring. Therefore, we are actively monitoring market developments and claims experience to explore new ways to evolve our propositions and capture transition opportunities.

Progress

Our share of EVs in the overall motor portfolio is consistent with our footprint and local EV market trends, showing that our evolving motor propositions adequately capture the growing EV penetration. However, expertise is required to understand claim trends considering conflicting factors such as rapidly evolving vehicle technologies (EVs and advanced driver assistance systems to name but two), but also an increasing average age of vehicles on the road overall. Separating individual technological and behavioral factors will result in better predictions of future claims experience.

Telematics and ADAS can effectively contribute to preventing and mitigating the impact of road accidents within motor fleets and we work with a panel of selected telematics providers to provide independent advice on the best telematics solutions for any organization.

Ongoing focus

We will continue our focus on e-mobility in four key areas:

- 1 Portfolio (e.g., overall market growth and adoption of EVs in fleets, other fuel alternatives).
- 2 Pricing and profitability (ADAS, telematics and other risk differentiators).
- 3 Performance (e.g., understanding of specific claims trends).
- 4 Proposition (especially in high EV growth markets and segments).

Property: a closer look

Physical impact of climate change continues to drive potential risk in the property book. Actions taken to counter this include a refined approach to managing natural catastrophe and optimizing exposure in key peril regions globally.

Identified action following climate risk scenario analysis 2021 We continued to develop our best-in-class catastrophe modeling and accumulation management, as well as focusing on building capabilities within Zurich Resilience Solutions, our risk management services unit. ¹	Rationale Catastrophe management is key to creating a climate resilient underwriting portfolio and also allows us to inform customers of actions they should take to become more resilient in the face of potential impacts from climate change.
Progress In 2023, we completed our initiative on rebalancing capacity deployment within our North American business. ² Maintaining sound exposure management across our key peril regions will remain an ongoing focus, as will further rebalancing executed as part of ongoing business using in-house climate science experts and external advisors.	
Ongoing focus Optimizing exposure in key peril regions remains a strong focus area and relies on frequent, consistent and comprehensive review processes, which have been in place for many years and will continue to be a key part of our climate resilience strategy.	

Energy transition: a closer look

Our sustainable energy strategy underpins the development of our energy book and helps support customers as they transition to lower-carbon operating models.

Identified action following climate risk scenario analysis 2021 <i>Fossil fuels and power</i> Ways to support: <ul style="list-style-type: none"> – We expanded our framework to review and support customers' transition plans beyond energy into an industry agnostic approach according to our engagement targets. – We continued action to grow our market share in renewables where we have expertise. – We continued to build on existing specialist knowledge to manage risk. Our sustainable energy strategy is built on three layers: <ul style="list-style-type: none"> – Engagement and review of transition plans. – Upskilling and cross-training in sustainable energy within underwriting, risk engineering and claims. – Continued development of solutions to address emerging technologies in this area. 	Rationale The future of energy depends on power generation transitioning from fossil fuels to sustainable energy sources. This transition will require traditional energy and power companies to decarbonize their business model and should also bring business opportunities for new, dedicated low-carbon energy companies. To reflect the transition requirements of existing energy customers, we restructured our team of experts, blending the old world of energy with the new to mirror our customers and better help them accelerate the energy transition. To adapt to this rapidly evolving market we continue to review our sustainable energy offerings and risk appetite. We have built further knowledge and expertise by developing skills in-house as well as hiring industry experts where needed.
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Progress

In 2023, we further developed dedicated teams, or “energy hubs”, so that the required expertise is available for all written transactions. Our integrated approach to energy allows us to access traditional power and fossil fuel customers that are transitioning to sustainable energy. The world’s largest wind power owners, for example, are mostly traditional power companies or integrated energy companies. Globally, we increased the number of hubs authorized to write renewable energy from four to 10. Each hub supports renewable energy customers based on a local underwriting authority that is tailored to market requirements and underwriting expertise. In particular we introduced a new offshore wind proposition. Offshore wind turbines are considered to be a particularly challenging technology, as they often utilize prototypical equipment and operate in harsh environments. While mindful of those challenges, we are providing services in a way that allows us to gain experience of a rapidly evolving technology, develop a solid foundation for the long-term profitability of our energy business and remain a consistent partner for our customers during their energy

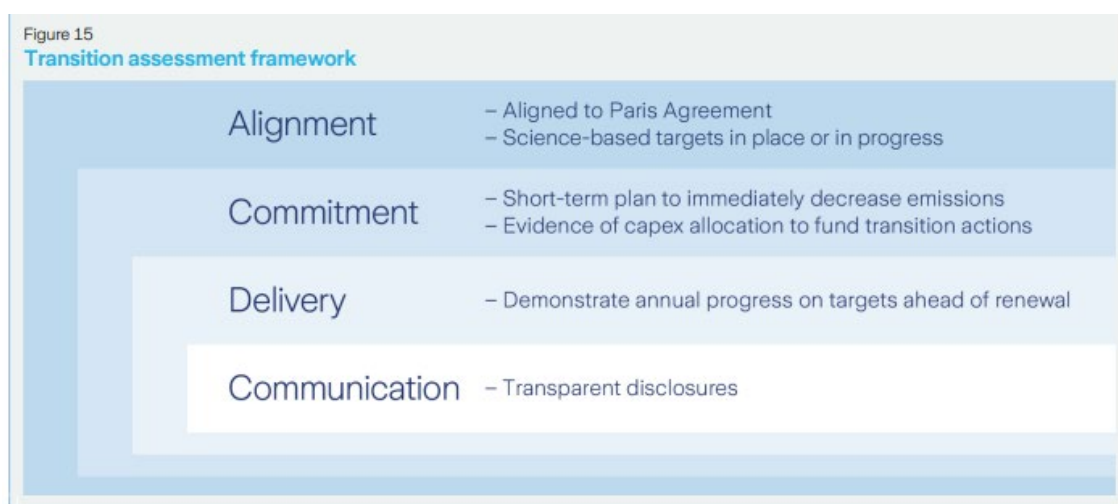
transition. We are also working with a broker to provide a facility for hydrogen customers which will serve customer needs across our lines of business in this crucial area of the energy transition.

To increase and maintain the appropriate talent for our energy strategy, we continue to upskill and cross-train underwriters and recruit additional expertise as needed. We have established a green graduate program in order to further build our talent pipeline. In 2023, participants who focused on sustainable energy rotated through Claims, Underwriting and Risk Engineering roles as part of the program.

Ongoing focus

We are continuing disciplined and cautious growth of our sustainable energy business, focusing on areas where we have expertise and where we see opportunities for profitable business in a difficult market. We will continue to monitor new opportunities in emerging technology in this area and continue to revise our risk appetite as appropriate.

We are applying our alignment, commitment, delivery and communication (ACDC) approach to key transition-related.



Construction & engineering lines: a closer look

We recognize the investment required to support the energy transition and tackle the accompanying challenges, while decarbonizing both operational and embodied emissions.

Identified action following climate risk scenario analysis 2021 - We continued to balance risk across the portfolio and understand the risks associated with changing construction methods.

Rationale - Buildings are a major driver of carbon emissions, both during construction and operational phases. Changes in materials and construction methods will be essential if the economy is to successfully decarbonize. Understanding how the use of those materials and methods will change underwriting risk will be a prerequisite to maintaining profitability in this changing market. We focus on growth and innovation in our construction business line through talent acquisition and new product development, with a heavy focus on the U.S. market as a first step.

Progress - Premium from our proprietary policies for mass timber master builders risk and project builders increased to USD 6.3m compared to 2022. These policies offer customized coverage and market-leading capacity of up to USD 50 million for qualified risks using mass timber, a low-carbon alternative to concrete and steel. Zurich construction in North America also continues with its weather parametric product which provides non-physical damage coverage for perils including rain, wind, heat, cold and snow accumulation. With this being a unique product in the market, we continue work on product awareness and applicability of the product solution for our customers. We are actively working on the portfolio analysis of the current in force sustainable energy construction business with the object to continue to refine our go-to market strategy.

Ongoing focus - Alternative construction methods still represent only a small part of the overall market, however we will continue to gather experience through our existing products and will continue to monitor the market to adapt propositions and risk appetite as needed.

Strategic implications for overall underwriting portfolio

The extent to which the risks and opportunities identified in our scenario assessment will materialize over time depends on the development of the global economy. We continue to hone our skills and build experience for emerging risks and technologies, while underwriting in areas where we already have expertise. In this way, we can capture emerging opportunities, as outlined above, and are well placed to react to any potential further acceleration in the transition of the economy.

Maintaining portfolio profitability is also core to our approach to insuring the net-zero transition. We will continue to selectively accelerate growth or adapt risk appetite based on the growth prospects and profitability of the individual business opportunities, while taking cue from our net-zero underwriting ambition.

1.1.6 Portfolio level scenario-based climate risk analysis – Investment Management

Proprietary investment portfolio analysis

- A model-based assessment of climate change-related risk to asset valuation across key asset classes suggests no major risk to our capital position under the scenarios considered.
- Under the current policies scenario, we observe low or moderately low physical risks for our portfolios. The model simulates high physical exposures for a few sectors, such as agriculture and activities in tropical areas, to which we currently have limited exposure.
- Under the net-zero 2050 scenario, the accumulated impact for our portfolios is limited. However, we observe elevated transition risk levels and thus higher modeled impact on valuation for carbon-intensive sectors.
- We believe that our multi-faceted responsible investment strategy is adequately set up to adapt to the impacts underlined in this scenario analysis. Our strategic response to climate change related risks that we observe, is our long-term commitment to decarbonize our investment portfolio to net-zero GHG emissions by 2050, consistent with a maximum temperature rise of 1.5°C above pre-industrial levels. To support the net-zero commitment, we have set interim targets for engagements, financing solutions and emission reductions.

Analysis performed

A model-based assessment was performed to understand potential climate change-related impacts to asset valuations of our capital positions. The third party model used integrates reliable physical and transitional climate-related risk variables under a number of climate scenarios as outlined in section 4.1.4 Portfolio level scenario-based climate risk analysis (see pages 145 to 147). Our analysis considers key asset classes, including listed equity, corporate credit, sovereign bonds and real estate. Impacts to our listed equity and global corporate portfolios are assessed in comparison with broad market benchmarks.

Analysis outcomes

In line with previous cycles, analysis indicates that climate change-related risk to asset valuation would not pose a major risk to our capital position. Our methodology considers a major risk as one that can have a negative impact on capital in excess of USD 5 billion. This conclusion considers equity, credit and real estate, which represent approximately 36 percent of our assets under management (AuM). Changes in observed impacts are attributable to changes in modeling methodology, input data and the composition of Zurich's proprietary investment portfolio.

Under the current policies scenario, we observe low or moderately low physical risks for our portfolios. The model simulates high physical exposures for a few sectors, such as agriculture and activities in tropical areas, to which we currently have limited exposure. Further, physical risks are estimated to mature and impact the asset valuation more profoundly further out in the future compared with the maturity patterns of transitional risks.

Under the net-zero 2050 scenario, the accumulated impact for our portfolios is limited. However, we observe elevated transition risk levels and thus higher modeled impact on valuation for carbon-intensive sectors. The higher climate-related impacts for carbon-intensive sectors can be explained by several potential market changes such as regulatory changes, carbon pricing, technological changes, climate abatement costs, increase in demand for low-carbon products and services and reduced demand for fossil fuel-related products and services. The future development of each factor is uncertain and we monitor them closely to be able to timely react to impacts and risks.

Our sovereign bond analysis suggests mildly inflationary outcomes for both current policies and net-zero 2050 scenarios. Under the current policy scenario, interest rates rise somewhat due to a negative effect on the economy caused by the physical impact of climate change. Negative effects include decreased labor productivity under warmer weather conditions. For the net-zero 2050 scenario, price pressures may arise due to the rising cost of carbon and stronger investment demand, spurred by the transition. This will result in moderately higher sovereign bond yields and lower bond prices. The impact on inflation and interest rates is estimated to be higher in the net-zero 2050 scenario than in the current policies scenario.

Listed equities: a closer look

Overall, the impacts on our global equity portfolio are slightly smaller than those of a broad market benchmark. This can be explained by several factors, including geographic exposure, different sector weighting and specific security exposure.

Under the net-zero 2050 scenario, we generally observe high transition risk levels and thus higher modeled impact on valuation for carbon-intensive sectors (including energy, non-energy materials and consumer cyclicals), which compared with lower-emitting sectors can be profoundly impacted by higher carbon costs and regulatory changes. Opportunities are identified for sectors that can benefit from, and contribute to, a decarbonization of the economy. This is especially applicable to utilities that can benefit from renewable energy solutions and the development of new technologies. Compared with previous assessments, we generally notice lower asset valuation impacts, which apply both to the benchmark and to our equity portfolio. The overall driver for lower asset valuation impact levels is an update to the NGFS scenario variables, wherein carbon pricing and abatement costs have both decreased. A reduction in carbon prices and abatement costs reduces the competitive advantage of low-carbon intensity players and decreases the costs to high-carbon intensity players. Such a decrease results in lower valuation impacts for carbon-intensive sectors, such as energy, and less opportunity impact for sectors such as utilities. Further, NGFS expects a slower EV demand compared with previous scenario iterations. Slower EV demand results in a reduced climate-related benefit for EV manufacturers, causing higher impacts on asset valuation for the consumer cyclicals sector (which includes auto manufacturers) compared with previous years and the benchmark.

For low-carbon sectors, including service sectors, finance and healthcare, we observe low impacts on asset valuations. This is a realistic assumption given the limited direct exposure to climate-related transitional risks. However, for finance, the indirect exposure via the financing of higher-emitting sectors is not captured within the modelling of the asset class valuation. In a scenario with increased carbon pricing, stricter climate-related regulations and/or low-carbon technological advancement, the finance sector could face more material climate transition risks which would require mitigation actions. Further, if a rapid transitioning of the economy led to energy scarcity, increased energy prices and bottlenecks in the economy, all sectors could potentially be severely impacted. Such market developments and the potential impacts on our portfolio require careful monitoring.

Physical climate-related risks anticipated under the current policies scenario are estimated to have a low to moderately low impact on the asset valuation, in contrast to the transitional risks emerging under the net-zero 2050 scenario. This is because most physical impacts of climate change are considered or modeled to be less impactful for the time span of the model as they materialize further out in the future compared with transitional risks. However, the impact on valuation from physical risks is higher across most sectors compared with previous assessments for both our equity portfolio and the designated benchmark.

4.1.6 Portfolio level scenario-based climate risk analysis – Investment Management (continued)

Figure 16

Estimated impact on listed equity portfolio across net-zero 2050 and current policies scenarios in comparison to a well-diversified global equity benchmark¹

Sector	Sector weights		Net-zero 2050		Current policies	
	IM portfolio	Benchmark	IM portfolio	Benchmark	IM portfolio	Benchmark
Energy						
Non-energy materials						
Consumer cyclicals						
Consumer non-cyclicals						
Business services						
Consumer services						
Telecommunications						
Industrials						
Finance						
Healthcare						
Technology						
Utilities						

Sector weight (% of listed equity portfolio)	Impact thresholds	
● High (>10%)	● Very high risk	● Moderately low risk
● Medium (5–10%)	● High risk	● Low risk
● Low (<5%)	● Moderately high risk	● Opportunity
	● Moderate risk	

1. The sector heatmap is calibrated to highlight relative impact per industry sector. Aggregate scenario level impacts are assessed in relation to our definition of financial materiality.

Corporate credit: a closer look

The outcome of the model shows that our corporate credit portfolio has lower impact levels than the benchmark in general.

We also see substantially lower climate-related impacts for our global credit portfolio relative to our listed equity portfolio. This can be explained by the shorter maturity of the credit portfolio, where bonds tend to mature before the strongest climate-related risks materialize. Further, risks associated with refinancing of debt are not considered in the model, which potentially leads to an underestimation of the true climate-related exposure. Compared with 2022 reporting, we observe only minor changes to the asset valuation of the portfolio.

Compared with our listed equity portfolio, finance has a higher weighting in our corporate credit portfolio. The model only addresses direct climate risks for finance and not the indirect impacts through portfolio-related activities, which could potentially be material. The indirect risks of finance will therefore be closely monitored to ensure that potential impact on valuation is adequately addressed over time.

Under the net-zero 2050 scenario, we see the same patterns for corporate credit as for listed equity, wherein carbonintensive sectors experience higher transition risks and thus higher modeled impact on valuation compared to low carbon-intense sectors. For utilities, our corporate credit portfolio has a relatively higher weighting toward climate transition laggards compared with our listed equity portfolio, which has higher exposure to climate transition leaders. This difference can explain the big divergence in impact on asset valuation between the equity portfolio (estimated to benefit from opportunities in a net-zero 2050 scenario) and the credit portfolio (estimated to face moderate impacts in a net-zero 2050 scenario). Further, the benchmark has a higher exposure to utilities than the credit portfolio, which can explain higher impacts compared with our credit portfolio. For business services and industrials, slightly higher transition risks are anticipated for our corporate debt portfolios compared with the benchmark. This is because our portfolio has a relatively high exposure to entities within those sectors offering services associated with higher GHG emissions—and thus higher transition risks—such as waste management and environmental services. However, those sectors have a low overall weighting in our portfolio.

Under the current policies scenario, we observe low impact levels on asset valuation. The bonds in our corporate credit portfolio tend to mature before the strongest climate-related risks materialize.

Figure 17

Estimated impact on corporate bond portfolio across net-zero 2050 and current policies scenarios in comparison to a well-diversified global benchmark¹

Sector	Sector weights		Net-zero 2050		Current policies	
	IM portfolio	Benchmark	IM portfolio	Benchmark	IM portfolio	Benchmark
Energy						
Non-energy materials						
Consumer cyclicals						
Consumer non-cyclicals						
Business services						
Consumer services						
Telecommunications						
Industrials						
Finance						
Healthcare						
Technology						
Utilities						

Sector weight (% of listed equity portfolio)	Impact thresholds	
● High (>10%)	● Very high risk	● Moderately low risk
● Medium (5–10%)	● High risk	● Low risk
● Low (<5%)	● Moderately high risk	● Opportunity
	● Moderate risk	

Real estate: a closer look

When applying the third-party climate risk model to our real estate portfolio, we observe only minor exposure to climate change-related risks. This finding is similar to 2022 reporting. Compared with 2022, we see only a minor reduction in the impact on asset valuations. Given the almost unchanged regional and sectoral diversification for 2022 and 2023, the changes in impact on valuation compared with previous reporting is mainly driven by changes in the model variables. Due to a decrease in marginal abatement costs and carbon pricing as model input variables, impact valuation levels have decreased for the real estate portfolio, with the biggest impact in the net-zero 2050 scenario.

More than 80 percent of our direct real estate investments are in Europe with an overweight in Switzerland and Germany. Under all the climate scenarios, our portfolio is most exposed to rising temperatures in Southern Europe.

Our main focus is the rapid decarbonization of our Swiss portfolio, which still uses mostly oil and gas for heating and producing warm water in residential buildings. To transform this portfolio, we have initiated several strategic investment programs to achieve our 2025 emission reduction target. In addition, we are continuing with our energy optimization project in Switzerland. The project, which started in 2014, has already led to a reduction in carbon emissions of more than 20 percent, compared with our 2010 baseline.

Conclusions and responses

Under the current assumptions from our climate scenario model simulation assessment, we observe that climate change-related risk to asset valuation would not pose a major risk to our capital position. The assessment shows that climate-related risks appear well diversified through our listed equity, corporate credit and real estate portfolios. However, as climate change-related risks can rapidly evolve and materialize faster than expected, we will conduct regular monitoring and active management of the risks. Our assessment shows that the most material climate-related risks—and thus higher modelled impact on valuation—appear for carbon-intensive sectors. We are already addressing these risks through a bottom-up approach with our emission reduction targets and coal, oil sands and oil shale exclusion policies.

We believe that our multi-faceted responsible investment strategy is adequately flexible to adapt to climate-related risks highlighted by this analysis and will continue to strengthen our practices to help us remain resilient to emerging risks. As a part of our responsible investor approach and our long-standing practice of ESG integration, we apply a specific security selection process, which takes into account good ESG practices and climate risks in the investment decision process. With respect to our exclusion policies, we have divested from equity holdings by December 2021, stopped investing in new debt and run-off existing holdings of companies that derive more than 30 percent of their revenues from mining or extracting thermal coal, oil sands and oil shale, or that generate more than 30 percent of their electricity from thermal coal, oil sands and oil shale.

Our structured and disciplined investment management approach is carefully crafted to match liabilities, minimize unrewarded risks and remain stable throughout the macroeconomic cycle. The resulting portfolio is highly diversified across asset classes, sectors and geographies. On an issuer level, both transition risks and opportunities are reflected through thorough ESG integration.

Strategic implications for overall investment management portfolio

Our strategic response to the climate change-related risks we observe is our long-term commitment to decarbonize our investment portfolio to net-zero GHG emissions by 2050, consistent with a maximum temperature rise of 1.5°C above pre-industrial levels. To support our net-zero commitment, we have set interim targets for engagements, financing solutions and emission reductions and have further strengthened our policy toward high emitting sectors.

To reach our interim targets for 2025, our near-term priorities include:

- Engaging with companies which have not yet set science-based emission reduction targets and convince them to do so and set up credible transition plans.
- Urge companies to exit coal-based business models by 2040 (2030 for OECD countries) at the latest.
- Enhancing our systematic approach to investee, asset manager engagement and policy advocacy.
- Following the TCFD recommendations to help us to better understand the climate-related risks of our portfolios and thus improve our ability to appropriately assess and price climate-related risks and opportunities.

To strengthen the decarbonization path of our investment portfolio, we have implemented an oil and gas policy for private debt investments in 2023. In addition to the group-wide exclusion on thermal coal, oil sand and oil shales, Zurich will not provide private debt financing of projects in the Arctic¹ and in new oil and gas upstream projects. We further specified investment boundaries for mid- and downstream projects, subject to local governance. Please see more details on sustainability risk on www.zurich.com/sustainability/strategy-and-governance/sustainability-risk.

While increasing the resilience of our portfolio against climate transition risks, our decarbonization strategy also contributes to limiting the physical climate risks showcased in the current policies scenario, which may materialize in

our portfolio over the long-term. In addition to our emissions reduction target, we mitigate climate-related risks with our additional commitment of investing in climate solutions (our 5 percent impact investing target).

1.1.7 Portfolio level scenario-based climate risk analysis – own Operations and supply chain

Own Operations and supply chain

– In 2023, we conducted an additional assessment to consider climate risks for our offices, data centers and critical suppliers around the world.¹ The results of this analysis show that remediating strategies currently in force are sufficient to mitigate climate risk.

Analysis scope and approach

Approach

We performed a scenario-based assessment of physical and transition risks with quantification performed for 2030 and 2050. The assessment of physical risks utilized a third-party model and data.

Scenarios used

We conducted an assessment of physical perils and transition risks to understand exposure level and criticality under two scenarios; net-zero 2050 and current policies.

Scope

The assessment considered:

- Offices with current lease terms greater than 10 years (13 locations).
- All strategic data centers (10 locations).
- Suppliers performing services with the highest level of criticality (according to internal supplier criticality classification system) for the Group, or for multiple business units (138 supplier locations).

Quantification

The physical risk assessment compared the variation in exposure levels between 2030 and 2050, with a focus on the degree of change. For supplier locations, an additional review was conducted on concentration risk identified in India. The qualitative hazard levels are based on specific physical parameters for each peril and include flood, wind, temperature, drought, hail, wildfire, precipitation, thunderstorms (lightning) and coastal flooding. The transition risk assessment involved the quantification of potential operational costs we are likely to incur as part of the transition to a low-carbon economy.

In 2023 our assessment focused on leased offices with a term greater than 10 years and also included ongoing monitoring of our strategic data center locations. We refreshed the supply chain assessment with higher quality supplier address data. This data came from the implementation of the Group Third-Party Governance Framework (TPGF).

The monitoring work confirmed results noted in previous years' assessments: Severity of hazard exposure is not expected to drastically change from current levels.

All critical processes performed at these office locations are included in business continuity plans, which contain appropriate recovery strategies aligned to a “loss of premises” scenario. These plans are reviewed and updated on an annual basis to address any changes in the threat landscape (e.g., energy crisis, pandemic, etc.). Based on the severity of threats highlighted and the fact there is little change to these threats over the evolving time periods, it is expected that these mitigation measures will continue to provide operational readiness of critical processes during disruptive events.

Backup data centers provide resilience for all regional strategic data centers.³ Based on the current trend of moving applications from centralized data centers owned by the organization to cloud-based solutions, it could be assumed that the risk relating to the loss of strategic data centers may reduce over time as services become more decentralized.

Certain supplier locations (especially in India) are already exposed to high and very high physical risks and have shown high levels of resilience without directly experiencing any material service outages. While the analysis shows that the number of locations at high and very high risk is likely to increase, this risk is already actively managed by us and our suppliers. Measures including hybrid working practices, the adoption of “software as a service” and cloud technologies by us and our suppliers, reduces the potential impact of property unavailability due to physical risk.

We evaluate supplier business resilience measures for suppliers of critical services as part of its ongoing due diligence and monitoring processes under the TPGF. Where required and relevant, plans are tested and periodically reviewed. Contracts often include specific clauses regarding business continuity and disaster recovery.

It is acknowledged that we have a degree of concentration risk due the number of locations operated by suppliers providing critical services and there is a requirement for our functions and countries to evaluate this under our internal policy framework and implement any reasonable mitigation actions. We use a software tool that employs artificial intelligence to screen news reports, social media posts and weather forecasts/reports to identify and monitor potential interruptions in the supply chain.

Transition risk exposure was also evaluated in 2023. This involved an evaluation of the potential operational costs we may incur as part of the transition to a low-carbon economy to mitigate climate change. We don’t believe that any of the identified transition risks with relevance to our operations, such as risks arising from the introduction of global carbon taxes or the development of new low-carbon technologies, are likely to have a material impact on us given the lowcarbon intensity of the operations of the insurance sector and our approach to continuously improve the way we manage operational sustainability risks and opportunities.

1.1.8 Other climate risk assessment outcomes

Our climate risk assessment includes consideration of both litigation and reputational risks.

Litigation risk: Though not a focus of our scenario analysis, some current litigation drivers were considered in specific areas of our in-depth analysis. None were identified as a material risk driver in the medium term. We closely monitor developments potentially impacting litigation-related risks and take actions to address them proactively.

Reputational consequences: We recognize the heightened public scrutiny that accompanies our climate-related ambitions and that any failure (real or perceived) to deliver on our objectives and targets could have an impact on our reputation. We believe a strong internal focus on delivery, coupled with monitoring through the governance structures described in Chapter 3 (see pages 135 to 136) and transparent public disclosure on progress, mitigate this risk.

1.1.9 Portfolio level scenario-based climate risk analysis – conclusion

Our annual portfolio-level scenario-based climate risk analysis considers our operations and material business activities across underwriting and investments.

– Overall, our P&C portfolio demonstrated relatively little movement compared with 2022, with no material shifts observed in industry or line of business mix. Consequently, modeled medium-term impacts are contained to the property and fossil fuel lines of business, with aggregate impacts across in-scope line of business considered to remain low. With our portfolio mix remaining stable, no broad adaptations are required to in-force responses which we can adapt to balance near-term market movements against the mid-term strategic scenario expectations.

– The scope of our Life protection analysis was increased and although medium-term impacts to demand were noted to be more material than previous assessments, increases were not sufficient to warrant additional responses.

– Similar outcomes are noted across our proprietary investments where analysis of key asset classes demonstrates a largely unchanged risk profile with physical risk having impact in few sectors to which we have limited exposure, and

where transition risk primarily impacts carbon intensive sectors. In line with 2022, observed impacts do not suggest material risk to our capital position.

Analysis of our operations suggests existing business continuity planning for critical processes are sufficient to address observed physical risk impacts while transition risk analysis does not suggest material financial impacts under the scenarios considered. In line with previous cycles, analysis outcomes suggest that our customer-focused approach and diversified portfolios, supported by strong risk management practices, continue to provide the resilience and flexibility necessary to be able to adapt to the climate change impacts observed.

We caveat these conclusions by acknowledging the hypothetical nature of the underlying scenarios, the uncertainty inherent in scenario modeling over the timeframes considered and the somewhat conservative modeling of physical and transition risk. As the effects of climate change gradually increase over the coming decades, adaptation efforts at the individual, company and state level will increase and provide resilience against expected impacts. This is likely to reduce societal and economic losses, however the details heavily depend on uncertain societal and technological developments. On the other hand, exceeding tipping points, such as accelerated melting of Antarctic ice sheets or permafrost thawing, could lead to large-scale discontinuities in the global climate systems and accelerate the impacts from physical climate risk. We believe our strategy of continually analyzing changing risk profiles and retaining customer focus gives us the flexibility required to maintain our resilience and continue to meet the needs of our customers as climate-related risk profiles evolve.

1.2 Governance

As outlined in the governance section of the sustainability report (pages 135 to 136), sustainability — and therefore environmental topics, such as climate change and nature loss — are integrated into our existing governance structure in that the Board is supported by its Committees according to their core mandates. The Sustainability ExCo Sponsor is responsible for monitoring progress with respect to sustainability priorities and targets and reporting thereon to the Board's GNSC, the Group CEO and ExCo.

The GNSC has been mandated by the Board to oversee the Group's approach and conduct with regard to sustainability. Oversight with respect to sustainability risks, including risks associated with environmental topics such as climate change and nature loss, is achieved through regular updates from the Sustainability ExCo Sponsor and the Group Head of Sustainability, who present updates on material topics to the GNSC on a quarterly basis. The GNSC receives regular performance updates on climate-related targets, while the ExCo sponsor for Sustainability confirms the consolidated set of material actions arising from scenario-based climate risk analysis with the Group ExCo for Group CEO approval, and reports same to the Board's GNSC. In addition to this, the GNSC was engaged on several strategic topics throughout 2023, including operational emissions and our approach to both transition planning and sustainability performance management.

Within their assigned function or business, each ExCo member and CEO direct report is also accountable for sustainability, including climate and nature. Responsibilities for such a role include contributing to the development and implementation of the Group's climate-transition planning, assessing and managing climate-related risks and opportunities, managing progress against climate-related corporate targets and value chain engagement on climate-related issues. Furthermore, environmental topics, including climate change, are considered as part of merger, acquisition and divestment due diligence and decision-making processes.

Oversight regarding the implementation of climate-related objectives in the business, functions, regions and countries is facilitated through the SLC. Further, progress toward climate-related targets across regions and countries is discussed at least annually as part of regular business performance review meetings. This is in addition to regular monitoring performed at Group level across key business functions.

Further information on sustainability risk and its governance is set out in the risk review (see pages 250 to 251). Further information on our metrics and targets is available in section 4.4 Metrics and targets of this report (see pages 164 to 179).

1.3 Risk management

1.3.1 Integration of climate risk within the overall risk management framework

We consider impacts from climate change to be drivers for other risks, such as market or natural catastrophe risks, which are managed within our existing risk management framework. Our approach to managing climate risk is embedded in our multi-disciplinary, Group-wide risk management framework, following the same objectives of informed and disciplined risk taking. The risk management framework is based on a governance process that sets forth clear responsibilities for taking, managing, monitoring and reporting risks. These responsibilities are:

- To identify, assess, manage, monitor and report risks including (but not limited to) climate change, that can have an impact on the achievement of our strategic objectives, we apply a proprietary Total Risk Profiling™ methodology standard (TRP). This assessment considers our planning horizon and allows us to classify risks according to their materiality based on the estimated severity and the likelihood of the risk materializing. This creates a relative rating for all risks, including specific aspects of climate risk (e.g., physical and transition risks), and, by definition, the prioritization of risk mitigation. Further, it supports the definition and implementation of mitigating actions. At Group level, this is an annual process involving senior management, followed by regular reviews and updates by management.
- To take the longer-term nature of climate change into account, we complement our TRP with portfolio-level scenario-based climate risk analysis. This provides an outlook on long-term risk developments relevant to our underwriting and investment portfolios, as outlined in the strategy section (see pages 138 to 161). The details of our risk management framework and risk type are outlined in the risk review (see pages 225 to 226).

1.3.2 Managing risks from climate-related natural catastrophes

As outlined in the strategy section (see pages 138 to 161), changes in physical risks related to long-term climate change could, over time, impact us through the property-related business via affected severity and probability of climate-related natural catastrophes. This is, in part, mitigated by the flexible nature of our underwriting portfolio, with contracts that are typically renewed annually. We recognize that the climate has been changing already in the past decades with impacts such as land-ice melt and rise in sea levels, that need to be considered in our assessment of physical risk. It is, however, clear that climate science indicates the greatest changes in physical risks related to climate change will occur over the longer term. We have established sophisticated natural catastrophe modeling capabilities to manage our underwriting selection, so that accumulations stay within intended exposure limits. The resulting view of natural catastrophe risk also underpins profitability assessments and strategic capacity allocation and guides the type and quantity of reinsurance we buy. To be globally consistent, natural catastrophe exposures are modeled centrally.

Third-party models provide a starting point for the assessment of natural catastrophe risk. However, they are generally built for the market average and need validation and adjustment by specialized teams to reflect the best view of risk. We have been a leader in natural catastrophe model validation since 2005 when we developed our proprietary ‘Zurich View’ of risk. This gives us nearly two decades of experience in applying a structured and quantitative approach to optimize our risk view. To arrive at the “Zurich View”, which also aims to reflect the impact of potential climate change that happened until today already, models are adjusted in terms of frequency, severity and event uncertainty.

Adjustment factors address potential losses from non-modeled, property-related exposures or secondary perils to the extent not covered by the third-party models. Every catastrophe event provides an opportunity to learn from our own claims experience and the modeling framework provides a place to capture the new insights. We constantly review and expand the scope and sophistication of our modeling and strive to improve data quality by leveraging technology.

We supplement internal know-how with external knowledge (e.g., the Advisory Council for Catastrophes). We are a shareholder in PERILS AG, Switzerland, a catastrophe exposure and loss data aggregation and estimation firm. We are also a member of the open-source initiative Oasis Loss Modeling Framework and rejoined the Global Earthquake Model Foundation as a governor sponsor in 2023.

Catastrophe models based on historical data do not capture potential, much longer-term shifts of extreme weather events related to climate change. However, when combined with general circulation models (GCMs), which build representations of the Earth’s physical climate systems, catastrophe models can help us understand the risk of future climate conditions. The quality of GCMs continues to evolve as scientific understanding of the Earth’s climate systems increases and as progress is made in computing power and artificial intelligence. This science is evolving, and we have

strengthened our catastrophe modeling team with dedicated resources to create methodologies to integrate forwardlooking aspects into our modeling approach.

1.3.3 Portfolio level, scenario-based climate risk analysis

Assessments of the resilience of our business model to potential climate risks over time periods extending beyond the financial cycle are performed using scenario analysis. To achieve a consistent Group view on potential climate change pathways, scenarios selected for this analysis underpin all assessments Group wide, unless other local regulatory requirements exist. Assessment granularity and timeframes can be tailored to the specific requirements of the assessment.

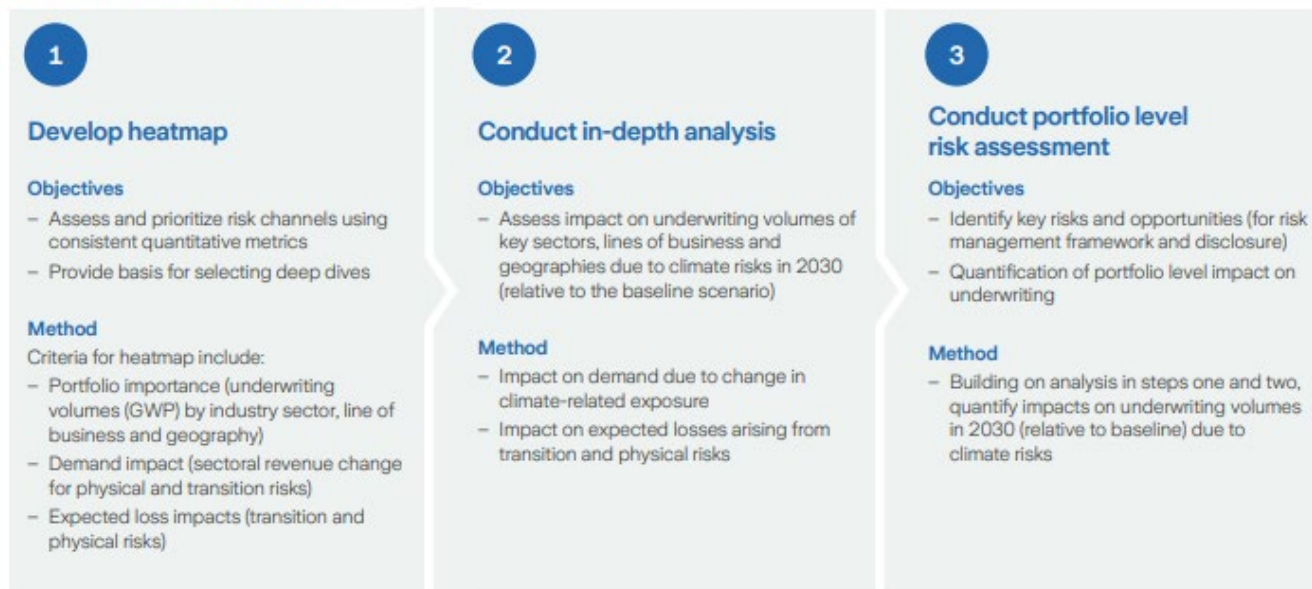
An integrated modeling approach, leveraging a third-party model, is adopted for the analysis of our underwriting and proprietary investment portfolios to ensure, as much as possible, the consistent use of assumptions. To quantify impacts on Group assets, the model adopts a bottom-up approach to analyze the exposures of businesses and industries to physical and transition risk. To provide a map of vulnerabilities, it uses asset-level data on relevant risk drivers, including carbon emissions, abatement options, exposure to physical risks (including location-based exposure to acute physical risks), exposure to the greening of the economy, dependency on fossil fuels and competitiveness.

The strength of this bottom-up approach is that it provides a coherent framework for analyzing climate change-related risk at the industry and corporate sector level. Given the flexibility of our business model, in both our underwriting and asset portfolios and the static balance sheet approach adopted, scenario-based climate risk analysis is performed in the full recognition that it represents a theoretical “what if” analysis. It is a useful approach which can serve to stretch management thinking about the much longer-term outlook and to address consistency of disclosures expected through the TCFD framework, but it does not provide insights from an immediate solvency, financial or capacity management perspective.

Data underpinning the assessment of impacts on group assets are used in conjunction with premium and loss data to model impacts on our insurance business in a bespoke process.

Figure 18

Underwriting analysis process



Data sources and assumptions

- We adopt a static, balance-sheet approach to better isolate potential medium- and long-term impacts of climate change. This implies quantified impacts assume no strategic reaction from us to the risks identified, and no movements in pricing to adapt to changing conditions.
- Scenario analysis is performed using year end 2022 financial data supplemented with latest available emissions data.
- Modeled impacts of acute physical risks on expected losses are, to every extent possible, based on our own natural catastrophe modeling. We work with a third-party model which enables us to search publicly available hazard data by type of hazard. We will expand our in-house modeling to cover a wider range of physical risks and this will be included in our own catastrophe modeling results.
- While the bottom-up approach adopted by the underlying model facilitates granular analysis of climate changerelated risk, the model depends on certain assumptions, namely:
 - The assumption of smooth transitioning, as capital moves from carbon-intensive to low-carbon activities without bottlenecks or frictions (e.g., costs are passed to consumers), leads to a muted ‘cost of transition’, despite the carbon prices assumed in the underlying scenarios.
 - The assumption of perfect information, where action is only taken once new policies are in place, omits an important uncertainty effect.
 - Complex hazards such as inland floods, severe convective storms, tropical and extra-tropical storms including coastal flooding are assessed by catastrophe models that rely on simplified assumptions.
 - For our own Operations, internal physical risk analysis of proprietary and third-party data was used.

1.4 Metrics and targets

We use numerous indicators across our underwriting and investment activities, as well as our own operations, to monitor, assess and manage climate-related impacts to, and of, our business. This section outlines the main targets underpinning our climate strategy and lists the key performance indicators (KPIs) we track.

1.4.1 Our targets

Our commitment to net-zero focuses primarily on supporting emissions reduction in the real economy. We believe we can best achieve this by focusing our approach on engagement with customers and investees and accompanying their transition. This reflects our principle, which holds that the private economy’s most effective contribution to fighting climate change derives from assisting, incentivizing, and asking our investee companies, insurance customers, suppliers and other stakeholders to embark on their own decarbonization pathways. We hold ourselves accountable to the same expectations through leading by example with our own operations.

Outlined below are the principal targets we have set to align our business activities with the net-zero commitment. Those targets are also described in our roadmaps, which provide a transparent picture of our progress toward set targets and positions.

Target	Definition	Target years	Base year
Reduction of financed emissions	<p>Our emission reduction targets cover both listed equity and corporate bond investments as well as direct real estate investments.</p> <p>We aim to:</p> <ul style="list-style-type: none"> – Reduce the intensity of emissions (scope 1 & 2) of listed equity and corporate bond investments by 25 percent, in terms of metric tons of CO2e per USD million invested. – Reduce the intensity of emissions of direct real estate investments by 30 percent, in terms of kilograms of CO2e per square meter. 	<p>2025 (interim)</p> <p>2050 (net-zero)</p>	2019
Engagement¹	<p>We strongly believe that simply divesting from companies with carbon-intensive footprints is less effective than engaging with them to drive the shift to sustainable practices. Many of these companies have the knowledge and engineering capabilities required to make a green transition and harnessing this can benefit sustainability goals.</p> <ul style="list-style-type: none"> – Engage with companies that produce 65 percent of portfolio emissions and lack targets aligned with the Paris Agreement. – Invite these companies to set targets aligned with the Paris Agreement. – Collaborate with asset managers to highlight best practice for climate-conscious active ownership and work together for a just transition. <p>Over a period of at least two years, we will engage with companies directly and through organizations such as Climate Action 100+ and the NZAOA. We focus on engaging with carbon-intensive companies, such as those operating in the oil and gas sector, on the need to set science-based emissions targets. Should engagement fail and companies refuse to set targets after due dialogue, we will vote against board members at shareholder meetings and where relevant, as a last resort, will divest.</p>	2025	2019
Climate solutions¹	<p>Our targets for financing climate solutions enhance our existing long-term engagement to provide green financing solutions under our impact investing strategy and also count investments in green certified buildings.</p> <ul style="list-style-type: none"> – Increase allocation to investments in climate solutions. – Avoid 5 million metric tons of CO2e emissions per year through impact investments. – Contribute to a market environment that enables a growing pipeline of climate solution investments suitable for institutional investors, based on our experience of building a multi-asset class impact portfolio. In 2022, we set ourselves an additional target to allocate 5 percent of invested assets to impact investments by 2025. 	Ongoing	2019

Target	Definition	Target years	Base year
Reduction in operational carbon emissions	<p>Our targets for our own operations² against a 2019 baseline as follows:</p> <ul style="list-style-type: none"> – Total emissions: absolute reduction in all operational emissions of 60 percent by 2025 (increased from 50 percent) and 70 percent by 2029. – Scope 1 & 2: reduction in emissions from the fleet and onsite heating as well as from purchased electricity, heat and steam (e.g., district heating) of 62 percent by 2025 and 80 percent by 2029. – Scope 3: reduction in operational emissions resulting from air, rental and rail business travel, employee commuting, strategic data centers, printed paper and waste, as well as indirect energy impacts of 60 percent by 2025 and 67 percent by 2029. 	<p>By 2025 (interim)</p> <p>By 2029</p>	2019

¹ Applies to our investment management portfolio.

² Cover-More, Farmers Group, Inc. and its subsidiaries, joint ventures and third party vendors are out of scope.

1.4.2 Other performance metrics

This section highlights the key metrics we use to measure and manage climate-related risks and opportunities. They represent a combination of metrics derived from the SASB and WEF IBC standards expanded with further metrics of our own, in line with guidance from the TCFD.

Underwriting

Carbon intensity

Leveraging the accounting method for insurance associated emissions, published by the Partnership for Carbon Accounting Financials (PCAF) in November 2022, we have already performed a first analysis of our insurance-associated emissions. This work will also form the baseline for our future targets.

Revenues from energy efficiency and low-carbon technologies

Our products related to energy efficiency and low-carbon technology, separately priced, amounted to USD 424 million in 2023 (USD 155 million in 2022). This was mainly driven by the uptake of a new solution in 2023 on portable electronics insurance with premiums of USD 132 million where repair is the priority, in the case that damage has occurred, the device is repaired almost all of the time. Owing to a shift from ICE to EV solutions from existing and new customers across the market we saw an increase in revenues of USD 77 million. We have also seen an increase in renewable energy solutions premium providing for USD 20 million of the movement in 2023.

Underwriting and Investment Management

Thermal coal, oil sands and oil shale

Our thermal coal, oil sands and oil shale engagement campaign officially ended after a two-year period in June 2021. Our restricted equity exposure had been divested by end of 2021 across all local entities (monitored and reviewed periodically), while our corporate credit was either sold or these securities were allowed to mature. Where we were aware of relevant exposure in our underwriting portfolio, those companies have been assessed and relationships exited in line with our exclusion policy.²

In line with our thermal coal, oil sands and oil shale policy, we continue to screen new investments and potential customers for involvement in policy-relevant activities. We will not insure or invest in companies that exceed our thresholds and do not have near-term commitments in place to bring themselves below these limits. As such, companies will be added to our exclusion screen before any business relationship has been established. This will not impact the amount of divestments or phased-out insurance premiums.

Existing customers and investee companies have the potential to become relevant for our exclusion policy through mergers or divestments. We will continue to monitor for such developments using third-party data sources but we will not separately report on such cases due to their low impact on our portfolio.

In line with our overarching net-zero targets for our insurance and investment portfolios, our performance management focus will move from individual sector exclusions to tracking our overall portfolio decarbonization and engagement targets. We monitor the progress of customer and investee companies against our thermal coal, oil sands and oil shale thresholds through third-party data and direct engagements.

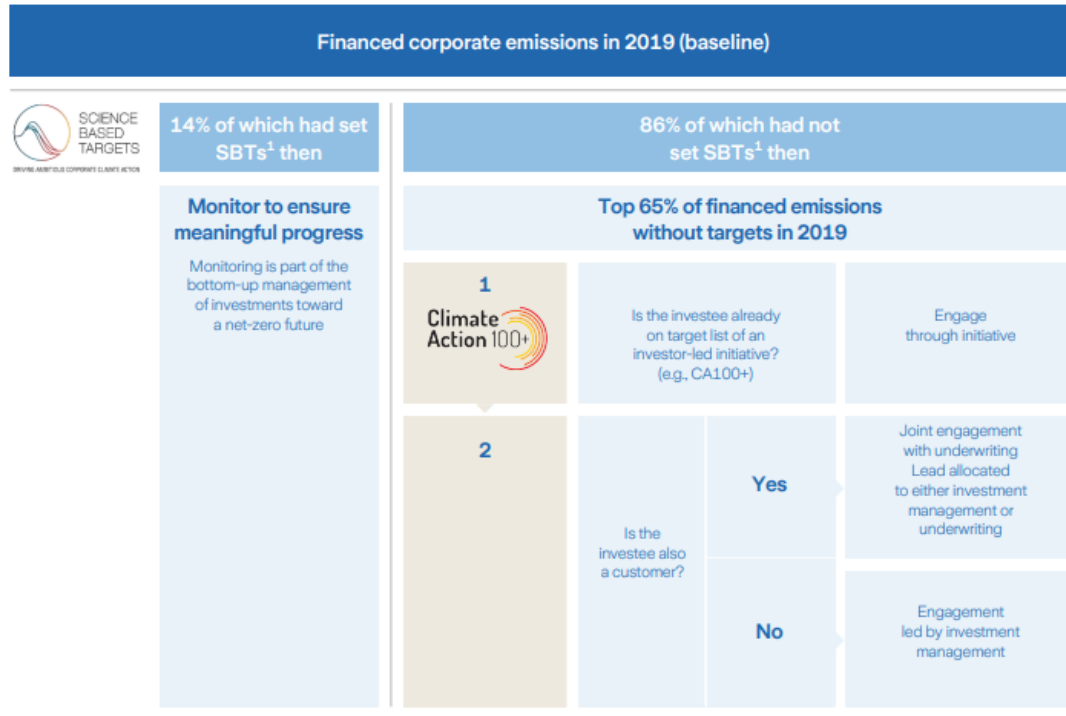
Engagement for the transition

Engagement is a key mechanism for investors seeking to mitigate systemic climate risks and work towards net-zero. In 2023, we advanced our bilateral net-zero engagement campaign (as illustrated below in Table 4 on page 168). We focused on companies with heavy emissions to understand the company's current emission intensity and their transition plans. In cases where the company has not yet established such a plan, we will work with the company to set up a transition plan with preferably externally validated targets.

We see collaborative engagement as a key way to amplify our positive impact, especially on climate change issues as we work to decarbonize our portfolio without simply divesting from high-emitting sectors. We are a member of Climate Action 100+.

Figure 19

Our engagement approach



¹ Science-based targets.

Case study

Since 2019, underwriting and investment management have worked together to continuously engage with customers and investee companies, so as well in the case of a European utility company.

Since the company had not publicly stated emission reduction targets, we started an engagement to learn more about the company's transition and encourage them to set science-based targets. The company embarked on a journey towards sustainability and decarbonization.

It acknowledged the challenges in scope 3 emissions accounting for utilities and grappled with the complexities of long-standing gas power plants. Despite these challenges, its ambition to set emission targets and invest in green hydrogen showcased its determination to lead in sustainability and renewable energy.

Table 4

Engagement progress

	2023	2022
Engagement started	60%	54%
Engagement not started	5%	11%
=Target	65%	65%
Started engagements undertaken...		
Collectively	25%	25%
Bilaterally	34%	29%
...with outcome		
Failed ¹	16%	16%
Ongoing ²	24%	21%
Succeeded ³	20%	18%

Note: All percent correspond to percent of financed emissions in 2019 (baseline) without net-zero targets, cumulative progress since 31.12.2019.

1 Engagement considered as failed under the thermal coal, oil sands and oil shale policy if it became clear the company would neither move under the 30 percent threshold nor set net-zero targets and was hence excluded; or that a company approached under the net-zero program refuses to set science-based net-zero targets.

2 Engagement considered as ongoing includes when a first contact is established with the company to engage in a meaningful conversation.

3 Engagement considered as succeeded if a company has publicly committed to science-based net-zero targets (under SBTi) or an equivalent scientific verification body, referring to Zurich only as a contributor to the outcome.

Figure 20

Engagement progress for top 10 emitters without science-based targets (SBTs)¹

Financed emissions %



1 Company grouping according to our proprietary methodology, which considers ownership and operational control structures (corresponding to financed emissions in 2019 (baseline data)).

2 Failed engagement under thermal coal program means the company was added to the restricted list and hence equity exposure was divested and credit exposure put in run-off.

Figure 21

Top 10 emitters without science-based targets (SBTs) by sector and region¹

Top 10 emitters by sector



Utility	68%
Metal and mining	12%
Government owned, no guarantee	14%
Energy	6%

Top 10 emitters by region



EMEA	49%
Americas	5%
APAC	46%

¹ Corresponding to financed emissions in 2019 (baseline data).

Asset manager engagement

While bilateral corporate engagement – the most common form of investor engagement to date – is an important tool for addressing the financial risks of climate change, we aim to complement this approach by other, more systematic forms of engagement like collaborative, value chain, and asset manager engagement.

As an asset owner, one of the most important and impactful engagement opportunities we have is to engage with our asset manager partners to support greater climate action and 1.5°C alignment with low/no overshoot. This applies to asset managers investing on our behalf in both public and private markets. Asset managers consistently represent the long-term interests of their asset owner clients in their climate-related engagements, particularly when those clients have made their own ambitious climate commitments. This is a key aspect of alignment in the asset manager–owner relationship.

To ensure alignment between our investment philosophy and our asset managers, we are strengthening our asset manager engagement process to systematically address climate-related stewardship. The aim of our engagement is to:

1 Increase asset manager ambition and accountability: We evaluate the strength of asset managers' systematic stewardship efforts related to climate and we integrate that evaluation into our ongoing selection, appointment and monitoring processes. Our annual ESG questionnaire, which includes specific climate-related topics, and review meetings provide input for our internal scoring system. Where we identify areas that do not meet our expectations, we engage on those particular topics and ask for specific commitments to implement improvements. Our aim is to get asset managers to a transparent and consistent reporting.

2 Encourage asset managers to act systemically on our behalf: Asset managers often have long-standing and strong relationships with companies in their portfolios and hold more concentrated positions in companies than us. This gives clear weight and influence to any messaging that asset managers deliver to companies on the need to manage systemic risks. Furthermore, through thought leadership, public discourse and policy engagement, asset managers can help encourage the development of the policy frameworks and economic incentives that are needed to catalyze the systemic shifts that would limit warming to 1.5°C.

Investment Management

This section presents a progress update on our investment-related targets.

Financed emissions

In 2021, we set interim targets for 2025 following the guidance of the NZAOA for the asset classes of listed equity, corporate bonds and real estate. Since the announcement, we have been working on local objective setting, implementation and data improvements. We have broken down the global portfolio target by local business unit and region. This allows us to capture factors such as local market considerations, sector diversification and past and projected pathways of emissions.

We strongly believe that simply divesting from companies with carbon-intense footprints is less effective than engaging with them to support the shift to sustainable practices. The findings from our engagement efforts, as described above, will help guide us through portfolio construction and rebalancing actions, benchmark changes and, where relevant and as a last resort, divestments. We aim to reach our targets by phasing out exposures to already restricted names under our thermal coal, oil sands and oil shale policy, and active portfolio management. We are taking portfolio construction actions that allow for potential switches to issuers with a lower CO2e footprint and potential divestments for those cases where no valid transition plans are in place and hence where engagement fails.

Table 5

Assets under Management: corporate portfolio¹

	In scope AuM (USDbn)		
	2023	2019	Difference
Zurich Corporate portfolio ²	49.6	58.5	(15)%
By investment asset class			
Listed equity	6.7	10.6	(37)%
Corporate bonds	43.0	47.9	(10)%
By region			
APAC	5.3	4.5	19%
EMEA	32.0	38.2	(16)%
Americas	12.4	15.9	(22)%
By sector			
Utilities	4.0	4.4	(8)%
Government-owned company	1.9	2.7	(28)%
Energy	1.8	2.1	(16)%

1 AuM covers companies listed equities and listed corporate credit.

2 Between 2019 and 2023 the total AuM dropped by 16 percent.

Table 6

Absolute and relative emissions of the corporate portfolio¹

	Absolute financed emission (million metric tons CO ₂ e) ²			Relative emission intensity (metric tons CO ₂ e/1 million market value)			
	2019			2019			
	2023	(baseline)	Difference	2023	(baseline)	Difference	Target
Zurich Corporate portfolio	3.8	7.9	(52)%	77	136	(43)%	(25)%
By investment asset class ³							
Listed equity	0.4	1.0	(60)%	57	90	(37)%	
Corporate bonds ³	3.4	7.0	(51)%	80	146	(45)%	
By region							
APAC	0.9	1.8	(51)%	164	400	(59)%	
EMEA	2.2	4.5	(52)%	68	118	(42)%	
Americas	0.8	1.7	(53)%	63	105	(40)%	
By sector							
Utilities ³	1.4	2.7	(46)%	358	616	(42)%	
Government-owned company	0.5	1.4	(64)%	262	529	(50)%	
Energy ³	0.5	0.7	(20)%	290	305	(5)%	

¹ In order to provide a comprehensive overview, details incl. prior year data are shown in the appendix on [pages 206 and 209](#).

² Financed emissions cover scope 1 and 2 of underlying companies (listed equities and listed corporate credit) attributed with enterprise value methodology and matched based on most recently available emission data.

³ Emission reporting for Zurich-validated green bonds in the Utility and Energy sectors was refined in 2022 to reflect the nature of the financed projects. Please see the green bond validation methodology in our white paper: www.zurich.com/-/media/project/zurich/dotcom/sustainability/docs/responsible-investment-at-zurich.pdf

Since 2019, we have achieved a reduction in the emission intensity of 43 percent. Zurich's absolute financed emissions declined over the same period by 52 percent. This reduction in financed emissions was mainly driven by i) changes in portfolio composition and ii) structural emission reductions of our investee companies.

The majority of emission intensity reduction since the baseline year 2019, is driven by changes in the investment portfolios due to active decisions on reinvesting matured bond proceeds or new investments into lower emission intensive companies. We also observe an expected further meaningful drop in emissions from companies in run-off under the thermal coal/oil sands policy due to maturing assets in 2023.

Another large part of the achieved emission intensity reduction is driven by the reduction in emissions reported by the underlying portfolio companies. Our achieved emissions reduction in the energy and utility sectors are mainly driven by emission reduction (scope 1 and 2) by the companies since the 2019 baseline year.

Previous years have demonstrated the need to consider both absolute and relative indicators when measuring the emission performance of portfolios. Relative indicators are sensitive to changes in company valuation, whereas absolute emissions are sensitive to strategic shifts in asset allocation. Capital market price changes have a significant impact on reported financed emissions based on the formula applied, resulting in the sensitivity of reported targets. In the long run, it remains our view that alignment with the NZAOA methodology will provide us with a stable and robust metric describing the trajectory of our emission reduction pathway.

Table 7

Corporate portfolio emissions with commitments or in run-off¹

	% of financed emissions with SBT ¹			% of financed emissions in run-off under coal/oil sands policy
	2023	2019 (baseline)	Difference	2023
Zurich Corporate portfolio	21.8	14.3	53%	4.7
By investment asset class				
Listed equity	22.2	22.6	(2)%	
Corporate bonds	21.8	13.2	66%	
By region				
APAC	6.3	1.2	448%	18.0
EMEA	32.8	22.9	43%	0.5
Americas	8.6	5.3	63%	1.6
By sector				
Utilities	16.8	14.4	17%	11.5
Government-owned company	40.1	5.4	637%	2.3
Energy	0.0	0.0	0%	0.6

1 Committed or set targets under SBTi.

Table 8

Assets under Management: real estate portfolio

	In scope AuM (USDbn)		
	2022 ¹	2019 (baseline)	Difference
Zurich global real estate portfolio	10.3	11.7	(12)%
By region ²			
APAC	0.1	NA	NA
EMEA	8.3	10.0	(17)%
Americas	1.8	1.7	9%

1 Real estate emissions are only available with a four-quarter lag. Emissions in 2023 will be reported in the 2024 report. Includes investment portfolio buildings only, as own-use buildings are part of our operational emissions target.

2 Direct real estate holdings form the base for the emission reduction targets.

Table 9

Absolute and relative emissions of the real estate portfolio

	Absolute emissions ^{1,2} (metric tons CO2e)			Relative emissions intensity ³ (kg CO2e/sqm)			Target
	2022	2019 (baseline)	Difference	2022	2019 (baseline)	Difference	
Zurich global real estate portfolio⁴	37,110	53,181	(30)%	16.2	21.6	(25)%	(30)%
By region ⁵							
APAC	555	NA		56.0	NA	NA	
EMEA	27,183	41,153	(34)%	17.9	22.9	(22)%	
Americas	9,372	12,028	(22)%	12.4	18.0	(31)%	

1 The CO2e emissions are calculated according to the location-based method. In cases where the data is available or properties use onsite/offsite renewable energies, the market-based methodology is applied.

2 The emission factors are retrieved from the International Energy Agency (IEA, 2020) with the exception of Switzerland for local calculation references (Intep, REIDA 2022 and local authorities) which are aligned with IEA.

3 The relative emissions intensity is calculated based on gross floor area (GFA) of the buildings.

4 Real estate emissions are only available with a four-quarter lag. Emissions in 2023 will be reported in the 2024 report. Includes investment portfolio buildings only, as own-use buildings are part of our operational emissions target.

5 Direct real estate holdings form the base for the emission reduction targets.

For our direct real estate portfolio, we are aiming to reduce our relative emission intensity by 30 percent by 2025, from a 2019 baseline. Our target includes scope 1 and 2 emissions, the so called ‘operational emissions.’¹ Carbon emissions intensity has shown a reduction by 6 percent year-on-year and by 25 percent when compared to the baseline year of 2019. Most countries have been actively working towards reducing their emissions, and in 2022, Americas have stood out with year-on-year reductions by 19 percent. These reductions are driven by the implementation of an AI program at two of our office properties. This innovative program utilizes AI technology to optimize the operations of building systems, resulting in a significant reduction in energy consumption. Both buildings witnessed almost a 40 percent overall reduction. The portfolio also benefited from LED retrofit programs and mechanical upgrades at various properties. The completeness of our emission data – measured by the coverage ratio² – increased from 65 percent for 2021 to 82 percent for 2022.

Figure 22

Emission reduction target-setting methodology and scope

Absolute emissions ¹	Relative emissions (intensity)	Key
$\sum_{i=1}^n \left(\frac{C_i}{EV_i} \times I_i \right)$	$\frac{\sum_{i=1}^n \left(\frac{C_i}{EV_i} \times I_i \right)}{\sum_{i=1}^n I_i}$	<p>I: Current value of investment on issuer i</p> <hr/> <p>EV: Enterprise value of issuer i</p> <hr/> <p>C: Carbon emissions* of issuer i</p> <p>* Carbon emissions = scope 1 and scope 2 emissions</p>
<p>In 2021, we announced our initial set of interim targets (2025). The targets cover the following:</p> <ul style="list-style-type: none"> – Listed equity, listed corporate debt and direct real estate. – Thirty-six percent of our assets under management in the baseline year of 2019. <p>We chose to calculate corporate-financed emissions and the resulting relative emissions intensity using the protocol’s preferred approach, which is based on enterprise value, not revenue.</p> <p>While a revenue-based carbon intensity measure is a good way to compare companies based on their size and underlying technology, in line with the NZAOA methodology, we believe the enterprise value approach is a better way to convert a corporation’s operational emissions (scope 1+2) into the “financed emissions.” This can be attributed to company’s underlying equity and/or debt investors, who are ready to take additional responsibility for the emissions. To calculate corporate financed emissions, we use the following methodology:</p> <ul style="list-style-type: none"> – Scope 1+2 emissions in line with the GHG protocol are provided by S&P Trucost. 		<p>– Enterprise value is defined as the sum of market capitalization of common stock at fiscal year end, the market capitalization of preferred equity at fiscal year end, and the book values of debt and minorities’ interests minus the cash and cash equivalents held by the enterprise. When enterprise value is not available (for example for financial companies) it is substituted with market capitalization. Enterprise value data is provided by S&P Trucost.</p> <p>Market value is defined as the market value of listed equities and listed corporate debt at fiscal year end. While all financial data (enterprise value and market value) is calculated as of December 31 of the reporting year, we use the latest available corporate emission data available as of January each year, when portfolio level financed emissions are calculated on an annual basis. This means that emissions data is systematically lagging. For example, financed emissions for 2023 will be largely based on full-year 2022 emissions data, as full-year 2023 emissions data will only be made available by investees in H1 2025, and tends to flow to data providers via CDP submissions in the fourth quarter of a given year.</p>

¹ In line with PCAF Global GHG Standard, see: carbonaccountingfinancials.com/files/downloads/PCAF-Global-GHG-Standard.pdf

Green certified buildings

To increase transparency and improve the quality of our real estate portfolio, we are aiming to increase the share of green certified buildings in our global real estate portfolio to 30 percent by 2025.

Table 10

% green certified buildings in total real estate¹

	% green certified buildings					Target
	2023	2022	2021	2020	2019	2025
Zurich Global Real Estate Portfolio	23%	22%	19%	22%	25%	30%
APAC	0%	0%	0%	0%	0%	
EMEA	21%	23%	20%	23%	28%	
Americas	34%	17%	19%	18%	17%	

¹ Market-value weighted and based on balance sheet investments, incl. buildings used by Zurich.


The investments in green certified buildings has increased slightly to 23 percent in 2023, compared to 22 percent in 2022. This increase is driven by a higher share of green certified buildings in the US.

Climate solutions

Climate solutions are investments in economic activities that contribute substantially to climate change mitigation (including enabling activities) or adaptation. These are solutions that reduce greenhouse gases by avoiding emissions and/or by sequestering carbon dioxide already in the atmosphere. Further examples of solutions include investments in climate change adaptation that contribute to enhancing adaptive capacity, strengthen resilience and reduce vulnerability to climate change. Our targets for financing climate solutions enhance our existing long-term engagement to provide green financing solutions under our impact investing strategy and also count investments in green certified buildings. For further information on our impact investment approach, please see pages 176 to 177.

Table 11

Climate solutions

	2023	2022	2021	2020	2019 (baseline)	Difference (to baseline)	Target
Climate solution investments (USDm)	9,272	8,192	8,203	8,054	7,408	25.2%	upward trend
of which green impact investments ¹	5,792	4,640	5,115	4,424	3,662	58.2%	
of which green certified buildings ^{2,3}	3,480	3,552 ⁵	3,088	3,631	3,747	(7)%	
 Million metric tons CO2e avoided through climate-related impact investments ⁴	4.5	3.2	4.6	2.9	2.8	58.9%	5

¹ Values refer to the environmental share of our impact investments displayed in Table 13: Impact investing portfolio on [page 177](#).

² Green certified buildings based on balance sheet investments, incl. buildings used by Zurich.

³ Values refer to the share of green certified buildings of our global real estate portfolio displayed in Table 10: % green certified buildings in total real estate on [page 174](#).

⁴ Impact numbers for 2021 and following include methodology upgrade, as explained in our impact measurement methodology paper: www.zurich.com/-/media/project/zurich/dotcom/sustainability/docs/zurich-impact-measurement-framework.pdf

⁵ The reevaluation in Austria also affected the 2022 year and the value has dropped from USD 4,035m to USD 3,552m.

Other Responsible Investment KPIs

At Zurich, we aim to create value for both our company and for society as a whole. As part of this approach, we expect and monitor our asset managers that they integrate ESG factors i.e. to fully reflect the risks and opportunities associated with ESG factors when choosing assets for our portfolios. We have implemented a global set of policies and investment processes across our entities to ensure a consistent approach to the integration of ESG topics. Through ESG integration we price and manage financially material sustainability risks and opportunities. Investments may also enable economic activities that can have positive impacts on our environment and society. We use various third-party data providers that provide information on the most material ESG risks and opportunities, as well as adverse impacts and ongoing controversies per company in the context of the sector they operate in. We have integrated ESG information, including

climate data, into our systems and have information about the environmental, social and governance performance of our portfolios.

In addition, our in-house portfolio managers and analysts have direct access to ESG research and analysis sourced from specialized providers and are trained to assess these risks and opportunities.

The following section shows the progress we have made with our responsible investment strategy in 2023 and in the past. Our responsible investment strategy is aimed at successfully managing Zurich's proprietary investment assets, while mitigating costs to the environment and delivering benefits to society. Our strategy is based on three pillars:

- ESG integration: integrate ESG factors into the investment process – across asset classes and alongside traditional financial metrics while generating superior risk-adjusted, long-term financial returns.
- Impact investing: build an impact investing portfolio that makes a positive contribution to the environment and society, to improve the lives of 5 million people and to help avoid the emission of 5 million metric tons of CO₂e per year.
- Advancing together: make responsible investment mainstream through interaction with other industry participants and engaging with policy makers to build markets in which ESG risk is priced efficiently and decarbonization is incentivized.

Table 12

Investment portfolio managed by responsible investors

	2023	2022	Change (2023 to 2022)	2021	2020	2019
Assets managed by responsible investors¹	99.8%	99.6%	0.3 pts	99.6%	99.6%	98.2%
Total amount of impact investments (USD millions)	7,882	6,328	24.6%	7,037	5,770	4,555
% of Investment portfolio	4.6%	3.8%	0.8 pts	3.3%	2.5%	2.2%
Investment portfolio (USD millions) ²	171,200	168,478	(2)%	211,334	226,389	204,803

¹ A United Nations supported PRI signatory or asset manager that fulfills our minimum requirements for ESG integration. Please see our responsible investment white paper: www.zurich.com/-/media/project/zurich/dotcom/sustainability/docs/responsible-investment-at-zurich.pdf

² Investment portfolio is calculated on a market basis, and is different from the total Group investments reported in the consolidated financial statements, which is calculated on an accounting basis and doesn't include cash and cash equivalents.

Proxy voting

As part of our active ownership strategy, we require all our managers for listed equities to exercise their voting rights on directly held equities. For our in-house asset management, we seek that outcomes of engagements are linked to the proxy voting process to form a consistent active-ownership approach. This means that where engagement as part of our net-zero program fails and companies refuse to set targets after due dialogue, we will vote against board members at shareholder meetings.

Figure 23

Proxy voting

Our voting activities



● Votes cast	86%
● No votes cast	14%

Our voting behavior



● Voted with management	74%
● Voted against management	12%
● No votes cast	14%

In 2023, we voted 86 percent of our in-scope equity. Approximately 80 percent of our equity investments are in scope for proxy voting.¹ The share of voted equity remains stable over the past years, reflecting the successful full rollout of proxy voting to Zurich's externally managed equity portfolios. We measure the votes we cast based on assets under management. Reasons for votes not cast are a combination of portfolio turnover, cost/benefit considerations and voting restrictions (such as demands to vote in person, share blocking or requirements that increase the cost of voting).

Case study

During AGM Season 2023, we analyzed and voted on more than 50 climate-related proposals submitted to shareholder votes, endorsing proposals driving sustainable practices and reducing carbon emissions. For instance, we used our proxy voting rights during the Annual General Meeting of a major fossil fuel production company to extend our support to a shareholder proposal demanding the establishment of Scope 3 targets. This proposal stressed the critical necessity for the energy company to implement a medium-term emission reduction target specifically addressing greenhouse gas emissions stemming from the utilization of its energy products. The decision to lend our support to this proposal was motivated by the notable absence of progress exhibited by the energy company in the realm of climate mitigation, particularly when compared to its peers in the industry. We firmly maintain that companies involved in fossil fuels should have a credible and ambitious transition strategy and should commence this transition without delay to realign their actions with global climate objectives in accordance with the Paris Climate Agreement.

Impact investing

Impact investments are investment opportunities that allow us to intentionally target a specific and measurable social or environmental impact. Zurich has set a target to help avoid 5 million metric tons of CO₂e emissions per year, and, separately, make a positive contribution to the lives and livelihoods of 5 million people through its impact investing portfolio. We also committed to investing 5 percent of our proprietary investment portfolio to impact investments by end 2025, which will help grow our allocation to climate solutions and investments benefiting society.

We are proud that our impact investment approach won two awards in 2023, recognizing our thought leadership as institutional investor in this area.



In 2023, our impact investing portfolio of USD 7.9 billion helped avoid a total of 4.5 million metric tons of CO2e emissions and benefited 4.6 million people. 2 As in the previous year, we see the majority of ‘avoided emission’ coming from our green, social and sustainability bond portfolio, while private equity is also a large contributor to ‘people benefited’.

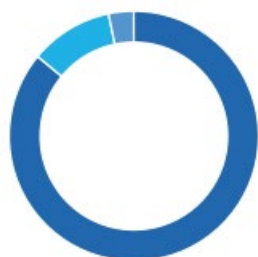
After engaging in impact reporting for several consecutive years, we have witnessed positive changes in the landscape, including a notable increase in standardization and clarity. The dedication to precision in both reported and actual impact measures reflects heightened efforts by impact managers, particularly in measuring the real impact post-project development. Additionally, we have noticed a growing trend where impact managers exercise conservatism in defining the scope of reported projects.

Furthermore, our own impact portfolio has undergone transformations due to bond maturities and exits in portfolio companies. These shifts have contributed to the fluctuation in impact numbers on a portfolio level from year to year. Despite this volatility, we view these developments as positive news for the industry, recognizing that enhanced measurement practices lead to more effective impact management.

Figure 24

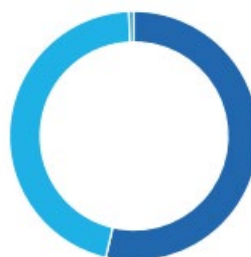
Impact metrics

4.5 million metric tons CO2e emissions avoided



● Green, Social and Sustainability bonds	86.0%
● Impact private equity	10.8%
● Impact infrastructure private debt	3.2%

4.6 million people benefited by positive contribution to their lives and livelihoods



● Green, Social and Sustainability bonds	53.7%
● Impact private equity	45.7%
● Impact infrastructure private debt	0.7%

Table 13

Impact investing portfolio

	2023	2022	Change (2023 to 2022)	2021	2020	2019
Total amount of impact investments (USD millions)	7,882	6,328	25%	7,037	5,770	4,555
Total amount of impact investments - environmental share	73%	73%	NA	73%	77%	80%
Total amount of impact investments - social share	27%	27%	NA	27%	23%	20%
Green, Social & Sustainability bonds (USD millions)	6,857	5,247	31%	5,846	4,677	3,645
Impact private equity (USD millions)	216	213	1%	211	189	163
Impact infrastructure private debt (USD millions)	808	867	(7)%	980	904	747

Case study

Private equity as an asset class is particularly suited to impact investing: the companies receiving capital from private equity investors usually tend to be small and agile, and more easily evaluated against impact objectives. An illustrative

example is Zurich's investment in a private equity fund that holds equities in NG Group (NG) since 2017. NG is an enterprise contributing to sustainable development by repurposing waste from household and industries. Its services extend from waste sorting to mass recycling, including separating contaminated and dangerous waste in order to provide appropriate treatment. Such services are essential to ensure that potentially heavy polluting waste is safely processed and is not discarded in a harmful way to people or the environment. At the other end of its processing line, NG also acts as a market for recovered resources including plastic and other materials linked to the extraction of natural resources. This service is core to its mission of abolishing waste and is a major step towards the circular economy. Zurich's investments helped to avoid approximately 12,000 metric tons CO₂e through NG Group recycling activities, such as sending waste to material recycling compared to extracting virgin materials. We employ private equity investments to foster a positive impact in supporting NG's mission to advance the circular economy. Zurich's investment in NG is aimed at facilitating innovative business models that enable the repurposing, reutilization and repair of materials already in circulation for a transition to the low carbon economy.

Advancing together

Responsible investment will only have an impact if this approach becomes mainstream. Supporting collaborative initiatives and joining member-led organizations to advance responsible investment practices forms an integral part of our approach.

We have signed the UN-backed PRI as well as the Principles for Sustainable Insurance (PSI) and collaborate with several industry initiatives and research bodies. For instance, we are a founding member of the UN-convened Net-Zero Asset Owner Alliance (NZAOA), co-chairing its Policy and Transition Finance work tracks, demonstrating leadership in addressing climate change by committing to ambitious targets but also benefiting from having access to resources, tools, and expertise provided by the UN and other partners. We are also founding member of the Investment Leaders Group, facilitated by the Cambridge Institute for Sustainability Leadership, working on developing and promoting best practices for responsible investing. We are Executive Committee members of the Green and Social Bond Principles and represent asset owners on the Advisory Board of the Operating Principles for Impact Management.

Own Operation

Our operational sustainability framework applies to daily operational processes such as the provision of workplaces, information technology, travel and transport, and the procurement of goods and services. The framework follows four core principles:

Transparency:

We report on the carbon dioxide equivalents (CO₂e) of the following sources of emissions to track progress towards our science-based targets for reducing emissions, in line with efforts to cap global temperature rise at 1.5°C:

- Scope 1 emissions from fleet and onsite heating in our workplaces.
- Scope 2 emissions from purchased electricity, heat and steam in our workplaces.
- Scope 3 emissions from air, rental and rail business travel, employee commuting, strategic data centers, printed paper and waste, as well as indirect energy impact.

Accountability:

We set clear targets to demonstrate accountability for our operational footprint. See our operational emissions reduction targets and our performance in the table below.

We have been carbon neutral since 2014 through the use of high quality offsets, which we apply only after prioritizing emissions reductions. In 2021 we launched our path to net-zero operations with our first carbon removal purchases.

Zurich also has set an internal price on carbon. In 2023 the price was USD 50 per metric ton. The price is applied to actual emissions to determine the value of our carbon fund which supports our carbon neutrality and net-zero carbon commitments, and other innovative solutions to drive down emissions from operations, as well as those from other sources related to our business. The fund is governed by the SLC.

Collaboration:

We can only be successful if we address sustainability risks and opportunities together. In addition to cross-functional collaboration, which is required internally to deliver our operational sustainability agenda, we focus on: employee engagement including raising awareness of the importance of making responsible and sustainable choices, engagement with our supply chain, and other external stakeholders such as universities, and NGOs to share knowledge, promote research and improve our own understanding of evolving operational sustainability risks and opportunities.

Continuous improvement:

Zurich's operational sustainability is based on a model of continuous improvement of processes: we focus on increasing the quality of our engagement, data transparency, and data coverage.

Please see the table below for progress on Group targets for our own operations against a 2019 baseline.

Sustainable Operations

Table 14
Absolute carbon emissions coming from our own operations¹

		2023		2022		2019 (baseline)	Target reduction 2025	Target reduction 2029
		2023	Progress against baseline	2022 ²	Progress against baseline			
Absolute carbon emissions	Total	60,701	(66)%	55,118	(70)%	180,805	60%	70%
Absolute reduction in all operational emissions	Final	35,701		55,118				
	Initial ³ estimate	25,000						
Scope 1 + 2 emissions	Total	20,524	(57)%	21,227	(56)%	48,290	62%	80%
Reduction in emissions from the fleet and onsite heating as well as from purchased electricity, heat and steam (e.g., district heating)	Final	15,524		21,227				
	Initial ³ estimate	5,000						
Scope 3 emissions	Total	40,177	(70)%	33,892	(74)%	132,515	60%	67%
Reduction in operational emissions resulting from air, ⁴ rental and rail business travel, employee commuting, strategic data centers, printed paper and waste, as well as indirect energy impact	Final	20,177		33,892				
	Initial ³ estimate	20,000						

¹ Cover-More, Farmers Group, Inc. and its subsidiaries, joint ventures and third party vendors are out of scope. We plan to include the aforementioned subsidiaries in the reporting for the financial year 2024. Data in the table shown as metric tons of CO₂e.

² www.zurich.com/-/media/project/zurich/dotcom/sustainability/docs/Zurich-environmental-performance-data-2022.xlsx

³ Emissions related to facilities data (electricity, heating and waste) and employee commuting are impacted by a time lag and are therefore estimated. Final data will be published in Q2 2024 on our website.

⁴ DEFRA emissions factors for air travel have not been updated to reflect the 2023 revision considering DEFRA's application of 2021 load factors in their most recent calculations. This would have inflated air emissions by an estimated 20% and would not reflect an accurate view of Zurich's travel activity.

In 2023, we announced the inclusion of an operational emissions target within the LTIP for the Group's senior positions, including the ExCo. The 2023 data still includes an estimation for employee commuting emissions (which are part of the LTIP scope) and facilities data. Further information can be found in the remuneration report on pages 88 and 110.

We have included estimated emissions for the purpose of presenting a total operational footprint for 2023, comparable to previous years' performance.

As anticipated, we continued to transition to the post pandemic world, hence emissions increased compared to 2022. This was mostly driven by increases to commuting emissions as workers spent more time in the office, and increases in business travel occurred. While we maintain our ambition to keep air emissions 70 percent below 2019 levels in the long run, prioritizing the needs of our customers and partners has resulted in a reduction in air travel emissions of 66 percent. We are watching developments in the sustainable aviation fuel (SAF) market to understand if, in the future, we can supplement minor shortfalls to our ambition with SAF purchases. We continue to make progress towards emissions reductions in our car fleet as we work towards our goal to fully electrify our car fleet by 2029, per our EV100 commitment.