Aviva plc
Climate-related Financial Disclosure 2021

We help 18.5 million customers build a brighter future. They trust us to protect what's most important. That gives us a responsibility to help shape a better world for them, our people, and the communities where we live and work.

Tackling big challenges takes experience and reach, it takes ambition and partnership.

It takes Aviva

Climate-related Financial Disclosure

This report brings together our disclosure in accordance with the Taskforce on Climate-related Financial Disclosures (TCFD). We have set out how we have complied in the TCFD index section.

This report is part of our 2021 reporting suite, which also includes the Annual Report and Accounts and the Sustainability Report.

Alignment to UN SDGs

> “Facing up to this challenge and getting ahead of it, is the best thing we can do for all of our stakeholders; to reduce the risks and seize the opportunities presented by a new kind of economy for everyone.”

Amanda Blanc
Group Chief Executive Officer

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Foreword

Throughout Aviva's 325-year history we have been at the forefront of the industry, always evolving and adapting to the changing needs of our customers and communities.

Stephen Doherty
Executive responsible for Sustainability

Andrea Montague
Chief Risk Officer

During that time, the world's population has grown from 0.5 billion to nearly 8 billion. Over the same period, atmospheric CO_2 levels have risen from pre-industrial levels of around 280ppm (1684)[1] to closer to 414ppm today (2021)[2]. For this reason, as a global family we now face our greatest challenge yet.

The world is in the middle of a climate emergency, with millions of people already living with the consequences. To avert irreversible catastrophe for our economies and the natural world, the global economy must change course. It has to rapidly shift from 'business as usual', and embrace risks and opportunities not seen since the birth of the Industrial revolution that gave rise to today's climate crisis.

To help change this course, in 2021, we set ambitious Net Zero Targets across our Operations and Supply Chain, and Insurance and Investment portfolios. This target has given us the momentum to refresh our operational structure to meet our Climate Goals.

Our enhanced focus on climate action aligns with the accelerating global momentum towards the low carbon transition, evident from ambitious, watershed announcements at COP26. Aviva intends to lead from the front to mobilise that transition.

This document sets out how Aviva incorporates climate-related risks and opportunities into our governance, strategy, risk management, and metrics and targets (in line with the recommendations of the TCFD, published in June 2017) and how we are responding to customer expectations and updated regulatory requirements.

Aviva has disclosed against the requirements of the TCFD since 2016. This year's report has increased in length, as we focus on our climate actions to demonstrate that we are delivering our strategy. However, we recognise the need to continue to evolve our approach, with further reporting criteria to satisfy next year.

Selected TCFD metrics are subject to 'reasonable' external assurance. The Independent reasonable assurance report obtained is included later in this report.

In this report we have provided a roadmap for our stakeholders, by way of our Climate Transition Plan and other key development areas, to highlight useful information for decision making. It builds on the summary Climate-related Financial Disclosure in the 2021 Strategic Report.

Stephen Doherty
Executive responsible for Sustainability

Andrea Montague
Chief Risk Officer

1 Source: Our World in Data Webpage: Atmospheric C02 concentration URL: https://ourworldindata.org/grapher/co2-concentration-long-term?time=464..2018
2 Source: European Union's Copernicus Climate Change Service Climate https://climate.copernicus.eu/copernicus-globally-seven-hottest-years-record-were-last-seven

Additional links
> Aviva's Climate Goals
> Aviva Climate Transition Plan
> www.aviva.com/TCFD

Our Climate Story

Aviva has a good track record in promoting sustainability and leading on climate action and reporting. We have reported on climate change in our Annual Report and Accounts since 2004 and we have published a climate disclosure in accordance with the four pillars of TCFD since 2016.

Timeline

1994
Aviva investors among first asset managers to publish Corporate Governance Voting Policy

1995
At UN summit Aviva pledges to 'balance of economic development, the welfare of people and a sound environment, by incorporating these considerations into business activities'

2001
Aviva Investors a founding CDP signatory and first asset manager to formally integrate corporate responsibility into voting policy

2006
Aviva Investors is a founding signatory of the Principles for Responsible Investment

World's first carbon-neutral insurer in 2006

2007
Aviva is founding signatory to ClimateWise and Accounting for Sustainability Principles

2010
Aviva Investors in vanguard of signing the UK Stewardship Code

2012
Aviva Investors founded Corporate Sustainability Reporting Coalition with call to action at Rio+20 Conference. Aviva is a founding signatory of Principles of Sustainable Insurance

Our Climate Story continued

2014
Launched Aviva Roadmap for Sustainable Capital Markets and Sustainable Capital Markets Manifesto

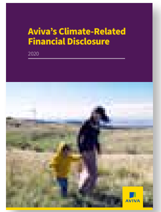
2015
- Former Group CEO speaks at UN General Assembly on Sustainable Finance
- Aviva published Strategic Response to Climate Change and actively participated in COP21
- Aviva investors joined Investor Forum Board

2016
Aviva Investors asked to join the Financial Stability Board Taskforce on climate-related financial disclosures

2017
- Aviva Investors asked to join EU Commission's High Level Expert Group on Sustainable Finance
- Aviva first discloses against TCFD recommendations Aviva France Article 173 response

2019
- Aviva Response to SS3/19
- UN Net Zero Asset Owner member

2021
- Climate-related Financial Disclosure put to shareholder vote for the first time



- Aviva's launches climate change plan
- Aviva becomes the first major insurer worldwide to target Net Zero carbon by 2040
- Aviva signs up to internationally recognised Science Based Targets initiative
- Aviva is a founding member of the Net Zero Insurance Alliance
- Aviva supports the creation of the Glasgow Financial Alliance for Net Zero at COP26

2022
Aviva releases its first Climate Transition Plan

Our Strategy is encapsulated in our Climate Transition Plan

Climate change is one of the key risks facing the insurance, savings and investment industry and the greatest risk currently facing humanity.

As the UK's leading insurer, we have a responsibility and a key role to play in contributing to the transition to a low carbon economy. In March 2021, we set an ambition to become a Net Zero carbon company by 2040. The urgency of the climate crisis means we can no longer wait for everything to be neatly laid out before we act. We may not know every step, but the direction is clear and we will do everything in our power to reach our goal.

Climate Transition Plan

We are taking the next step in our Net Zero Ambition to support the transition to a low carbon economy, working with the insurance industry to create new methodologies and setting new standards, engaging with our clients to develop and implement their transition plan and supporting decarbonisation through our investments and insurance activities.

We recently won the Reuters Responsible Business Awards for 'having played a crucial role in accelerating the transition of the finance sector.'

To execute on our ambition we have developed our initial Climate Transition Plan.

This plan has been developed in line with TCFD, Glasgow Financial Alliance for Net Zero (GFANZ), and Institutional Investors Group on Climate Change (IIGCC) principles, and in anticipation of forthcoming UK regulation on Transition Plans and the UK Green Finance Roadmap.

Our plan uses five building blocks to describe how we intend to minimise risks and capture opportunities.

1. **Strategy and ambition -** detailing commitment, ambition, and scope of Net Zero pledges.
2. **Methodology -** defining the approach to identify, measure and monitor climate-related targets with reference to Investments, Insurance, and Operations.
3. **Action plans -** providing clarity on the measures needed to achieve defined targets. This will support engagement with companies invested in, underwritten and in our supply chain.
4. **Climate Risk Management -** defining the risk appetite and ensuring alignment with the Climate Transition Plan.
5. **Target Operating Model -** defining roles and responsibilities to ensure the execution of the Climate Transition Plan and create climate cultural awareness throughout the organisation.

Our strategy and ambitions are:

- To be a Net Zero company by 2040 - our plan covers operational emissions (Scope 1 & 2) and those contributed by our suppliers by 2030, as well as our shareholder and customer investments and insurance solutions by 2040 (Scope 3).
- To reduce the carbon intensity of our investments by 25% by 2025 and 60% by 2030, and aim to transition all assets[1] to be Net Zero by 2040.

Additional links

> Climate Transition Plan

> "Private capital can put the UK at the forefront of green innovation, helping to develop and commercialise clean technology solutions that combat climate change.
>
> Private sector investment into green technologies will be vital to the UK's green industrial revolution and builds on government's backing of £20 million funding from the launch of the Clean Growth Fund."
>
> **Lord Callanan,**
> **UK Minister for Business, Energy and Corporate Responsibility**

1 Scope of our target will be core markets, all main asset classes (credit, equities, direct real estate, and sovereigns when methodology developed; including both active and passive funds), and shareholder assets and those policyholder assets where we have decision making control and we have carbon emissions data.

Our Strategy is encapsulated in our Climate Transition Plan continued

To deliver on our ambition our climate strategy has five key focus areas:

1. **Accountability and Leadership** - ensuring Aviva leads from the front through alliances and our actions to meet Net Zero.
2. **Decarbonising our Investment Portfolio** - e.g. through Aviva's Investors' Engagement Escalation Programme and green asset investments.
3. **Insuring a Net Zero Future** - underwriting renewable energy infrastructure and proposing a methodology for Net Zero underwriting.
4. **Targeting operations and supply chain to be Net Zero by 2030** through the Science Based Targets Initiative.
5. **Embedding climate in our culture** by educating our employees on their role in the just transition to a low carbon future.

Quantifying the impact of climate change is an emerging practice, with inherent uncertainty in the quality of available data. It is challenging to obtain consistent asset data across our entire portfolio and quantify the impact of carbon emissions from our scope 3 category financial investments. We have made several methodology improvements in 2021 and will continue to enhance our capabilities in line with industry developments and standards.

Investing in Clean Growth

In December 2021, we announced our initial investment of £50 million into sustainability targeted venture capital funds, focused on emerging technology which support a more sustainable future. The new investments into funds with a specific sustainability focus will directly support Aviva's strategic ambition to contribute to a sustainable economic recovery.

Our first investment is into the Clean Growth Fund. Launched in 2020, the UK Clean Growth Fund invests in promising early-stage UK clean technology companies, with products and services focused on driving clean growth in the low carbon economy. It aims to accelerate the commercialisation of clean growth technologies, create new employment opportunities across the UK and contribute to the UK's efforts to deliver Net Zero by 2050. The fund has invested in companies such as Indra, who manufacture and supply smart electric vehicle chargers, and Tepeo, who have invented a zero emission boiler.

Additional links
> cleangrowthfund.com

Our 2021 Climate Highlights and Looking Ahead

Building on our climate work over the last three decades, we are pursuing an ambitious carbon reduction plan. In March 2021, we announced our ambition to become a Net Zero carbon company by 2040. We have made progress with the activities performed in 2021 and have a roadmap in place for 2022 and beyond.

Ambition

Net Zero for all three scopes by 2040

Target

Publish a Climate Transition Plan and continue to report progress through the Climate-related Financial Disclosure

Activities in 2021

- Developed understanding of contents for a Climate Transition Plan
- Created an education piece on what an internal price for carbon could look like for Aviva
- Worked on a methodology for measuring the carbon intensity of Sovereign Bonds with the UN Net Zero Asset Owner Alliance (NZAOA)
- Created and are proposing a methodology for measuring the carbon impact of underwriting

2022 Priorities

- Publish Climate Transition Plan
- Expand scope and extent of assurance over climate metrics.
- Feasibility of Internal Carbon pricing across the business – operations, supply chain, investments, underwriting
- 2022 - update to Climate Transition Plan/Net Zero plans for 2023

Target

Publish a Biodiversity Policy

Activities in 2021

- A cross-functional working group developed an initial understanding of the impacts and dependencies Aviva has on biodiversity
- Committed to a number of alliances and pledges to collaborate on methodologies, data, measurement
- Established 'Wild Aviva' in the UK to promote biodiversity in and around our offices

2022 Priorities

- Published Aviva's Biodiversity Policy
- Understand the targets we could set in 2023
- Propose response to Taskforce on Nature-related Financial Disclosures (TNFD) draft biodiversity framework

Target

Publish an employee guide: Tackling climate change Together

Activities in 2021

- Collated all the activity we have underway to support our colleagues in tackling climate change including examples to stimulate further actions
- 20,995 (99.2%) of our colleagues have completed essential training on climate change and Aviva in 2021
- Launched an employee electric vehicle salary sacrifice scheme in the UK
- Increased the maximum allowance for the cycle to work scheme to include e-bikes
- Aviva Staff Pension Scheme (UK) Trustee stated a Net Zero by 2040 ambition and moved to an Environmental, Social and Governance (ESG) default solution

2022 Priorities

- Our annual staff survey – 'Voice of Aviva' results showed that 90% of colleagues take action on sustainability in the office, whilst 60% of colleagues advise that they have included sustainability in their job roles

Our 2021 Climate Highlights and Looking Ahead continued

Ambition

Net Zero for all three scopes by 2040 continued

Target

Science Based Targets aligned to a 1.5°C pathway

Activities in 2021

- The Science Based Targets initiative (SBTi) is a collaboration between United Nations Global Compact, CDP (a global disclosure systems, formerly the Carbon Disclosure Project), World Resources Initiative and Worldwide Fund for Nature. We committed to the SBTi in March 2021

2022 Priorities

- Validation of SBTi pathways

Target

Engagement with teeth to drive the transition

Activities in 2021

- We announced our climate engagement escalation programme, through which we seek to influence 30 systemically important carbon emitters, in which we invest, that currently produce 30% of global scope 3 emissions in the oil and gas, metals and mining, and utilities sectors
- More widely, through our annual letter to Chairs of companies we have advised to increasingly use our option to vote against re-election of directors at companies that do not make adequate climate plans, and in two years divest from those that do not comply

2022 Priorities

- At the beginning of 2022 Aviva Investors Chief Executive Officer Mark Versey, has written to 37 finance ministers and central bank governors for countries whose sovereign debt we hold
- In 2023, we will complete our engagement escalation process for the 30 largest carbon emitters globally

Target

Link ESG performance with remuneration

Activities in 2021

- 10% of the Long Term Incentive Plan is based on ESG metrics, split across separate measures (one climate and two diversity and inclusion metrics)

2022 Priorities

- Increase weighting within the 20% allocated range covering climate, customer and diversity and inclusion metrics

Our 2021 Climate Highlights and Looking Ahead continued

Ambition
Net Zero operations by 2030

Target
8% reduction year-on-year to 2030

Activities in 2021
- Solar carport and energy storage at our office in Perth is fully operational, generating 549,540 kWh and taking the building off-grid for periods each day
- Introduced our award-winning smart building optimisation programme to two offices in Canada
- Change temperature set-points across UK offices; a major catalyst for reducing our gas consumption

2022 Priorities
- Deliver 8% reduction in scope 1&2 supply chain and operational emissions
- Seek planning approval for a wind turbine at our Perth office
- Installation of solar panels at our Norwich office
- Installing Air Source Heat Pumps in Perth
- Piloting a revolutionary air handling control system in our Norwich office
- Rollout of our bespoke desktop power management system

Target
Switch car fleet to 100% electric vehicles Group-wide by 2025 via EV100

Purchasing 100% electricity from renewable sources Group-wide by 2025 via RE100

Activities in 2021
- Signed-up to the EV100 pledge
- At the end of 2021 39% of company car fleet Group-wide are electric vehicles
- At the end of 2021 81% of electricity was purchased /generated from renewable sources

2022 Priorities
- 22023 onwards - Electricity for operations from 100% renewable sources and switch to full electric vehicle fleet, both by 2025

Ambition
Net Zero supply chain by 2030

Target
Proportion of purchasing spend signed up to Science Based Targets

Activities in 2021
- Net Zero contract clauses being included in supplier contracts
- Understanding our SBTi-aligned supplier baseline

2022 Priorities
- Created a sustainability best practice guide for suppliers

Our 2021 Climate Highlights and Looking Ahead continued

Ambition

Increasing sustainable investments

Target

By the end of 2022, we expect to invest £10 billion of assets from our auto-enrolment default funds and other policyholder funds into low carbon strategies

Activities in 2021

- Aviva and Blackrock designed a fund that has 50% lower carbon intensity than the benchmark
- £1.7 billion has been invested to date

2022 Priorities

- Complete the investment of £10 billion of auto-enrolment assets into low carbon strategies

Target

By 2025, we will invest £6 billion in green assets (from a baseline of 2020), including £1.5 billion of policyholder money into climate transition funds

Activities in 2021

- We have expanded our definition of green assets to capture the types of assets we are able to invest in. Our definition of green assets can be found in our Reporting Criteria publication
- Investment in green assets of £4.0 billion originated since 2020, including an investment of £227 million in green gilts in 2021, of which £206 million arose in UK Life and £21 million in UK General Insurance
- We have invested £50 million into sustainability targeted venture capital funds such as the UK Clean Growth Fund in 2021 through our Ventures area of the business
- Aviva Investors has launched the Climate Transition Global Credit Fund and the Climate Transition Real Assets Fund

2022 Priorities

- Seeking to invest a further c.£1.2 billion in green assets

Target

By 2025, Aviva Investors will invest £2.5 billion in low carbon and renewable energy infrastructure and deliver £1 billion of sustainable transition loans

Activities in 2021

- Sustainable transition loans - £783 million investment since year-end 2019
- Reduction in carbon emissions from Aviva Investors Real Estate Investment portfolio – 37% from a 2019 baseline

2022 Priorities

- Seek to invest a further c.£0.5 billion in low-carbon and renewable energy infrastructure and c.£0.2 billion in sustainable transition loans to continue progress towards Aviva Investors' 2025 Real Assets target

Target

Our UK pension customers to choose to put more than 20% of new savings into sustainable impact funds or Net Zero aligned funds by the end of 2022

Activities in 2021

- Aviva conducted research which showed choosing a sustainability fund to invest in was 21x better than making a number of carbon reducing lifestyle choices combined[1]
- Aviva created a ESG profiling tool that helps customers choose what funds they put their money into in line with their values

2022 Priorities

- 22% of new customer money was put into sustainable impact funds or Net Zero aligned funds across 2021 and are on track to increase further for 2022

1 Research carried out with data analytics company, Route2, in association with Make Money Matter. Source: https://www.aviva.com/content/dam/aviva-corporate/documents/sustainability/communities/pension-fund-carbon-savings-research-A-summary-of-the-approach.pdf

Our 2021 Climate Highlights and Looking Ahead continued

Ambition
Not investing in the highest carbon emitters

Target

Divested all companies making more than 5% of their revenue from thermal coal, and companies making more than 10% of their revenue from unconventional fuel extraction, unless they have signed up to Science Based Targets by end 2022

Activities in 2021
- Identified 202 thermal coal and power companies and 7 unconventional fossil fuel extractors for Aviva's Investment Stoplist which applies to Shareholder, Participating and Policyholder portfolios

2022 Priorities
- Publish an Aviva ESG Baseline Investment Exclusion Policy in 2022
- Divestment of stock according to the Exclusion Policy by end 2022

Ambition
Not insuring the highest carbon emitters

Target

Stop insuring companies making more than 5% of their revenue from thermal coal or unconventional fossil fuels from renewal at the end of 2021

Activities in 2021
- Publish an Aviva ESG Baseline Underwriting Statement including thermal coal and unconventional fossil fuel companies

2022 Priorities
- This is now complete
- We are looking to set further targets in conjunction with Net Zero Insurance Alliance

Ambition
We intend to make it easy for customers to make climate friendly choices and support people as the economy changes

Target

To become a leading renewable energy insurer

Activities in 2021
- We expanded our personal lines motor insurance cover for roadside breakdown, electrical surges and EV accessories
- We significantly grew our renewable energy account, providing a risk-engineered approach to renewable infrastructure underwriting across a range of different renewable products
- Our global rollout means that all core markets are able to provide renewable energy general insurance cover

2022 Priorities
- Launch Aviva Zero with carbon offsetting element
- We were the #1 Insurer of battery storage in the UK
- Underwriting renewable infrastructure of 75GW across six continents
- We are targeting to become 3rd largest renewable energy insurer in the London Market by the end of 2022

Ambition
Taking steps today to plan our negative emissions

Target

Initial £100 million budget to begin to create nature-based carbon removal offsets by 2030

Activities in 2021
- We have developed our understanding of the carbon removals market and have built up our knowledge of the innovative projects that provide nature-based removal offsets. We have sought partners to work with going forward

2022 Priorities
- Launch first Aviva Forest partnership to begin to create carbon removals

Ambition
We pledge to continue arguing the case for an economic recovery driven by cutting carbon and creating new jobs, infrastructure and opportunities in a Net Zero economy

Target

We want governments to go further and mandate companies to disclose action plans which align their business strategies to science-based climate goals, including short- and medium-term milestones

Activities in 2021
- Climate focused partnership for a Net Zero future - WWF and published a joint paper on 'Transition Plans for a Net Zero Future'
- At COP26 we again used our voice to support strong commitments and leadership on climate action. We were pleased with the GFANZ and ISSB announcements, among others, which we had been actively encouraging for many years. We had eight colleagues attend including our most senior leaders, among the 20,000 delegates and 100 heads of state

2022 Priorities
- At COP26 the UK Government announced the establishment of a Transition Plan Taskforce to build the standard for the plans
- Proposed response to 2021 TCFD update and UK Greening Finance Roadmap, including preparations for International Sustainability Standards Board (ISSB) reporting

TCFD Index

The TCFD outlines 11 recommendations for organisations to include in their climate reporting. For 2021, Aviva has taken a more integrated approach to climate reporting than in previous years, reflecting the evolution of our TCFD journey and how climate considerations are now incorporated into everyday strategic decision-making. Our climate disclosures are subject to strong internal governance, which are substantially similar to our financial reporting framework. The table below directs to the relevant section where the 11 TCFD recommendations are covered in this report. Whilst we have complied with the 11 recommendations of 2021, there are still some areas we are continuing to develop further following the TCFD's 2021 status update.

TCFD pillars	TCFD recommended disclosures	Section the disclosures are included in
Governance Disclose the organisation's governance around climate-related issues and opportunities	a. Describe the board's oversight of climate-related risks and opportunities	Our climate governance structure
	b. Describe management's role in assessing and managing climate-related risks and opportunities	Our management's climate roles and responsibilities
Strategy Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's business, strategy and financial planning where such information is material	a. Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long-term	Introduction to our climate strategy, risks and opportunities
	b. Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning	Our strategic focus
	c. Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	Our climate scenario analysis
Risk Management Disclose how the organisation identifies, assesses and manages climate-related risks	a. Describe the organisation's processes for identifying and assessing climate-related risks	Our process for identifying and assessing climate-related risks Our climate scenario analysis
	b. Describe the organisation's processes for managing climate-related risks	Our process to manage climate-related risks Metrics and targets
	c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management	Our process to integrate climate-related risks into risk management
Metrics and Targets Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material	a. Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process	Metrics and targets
	b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 GHG emissions, and the related risks	Decarbonising our Investment Portfolio Insuring a Net Zero Future Decarbonising our operations and supply chain Metrics and targets
	c. Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets	Our 2021 climate highlights and looking ahead Metrics and targets Our process to assess, manage and monitor climate-related risks and opportunities

Governance

Governance

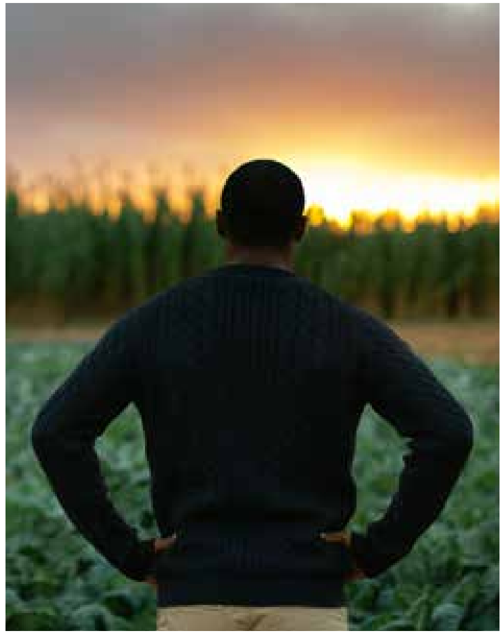
Our objective is to embed the consideration of climate change throughout our organisation.

Aviva has a strong system of governance, with effective and robust controls. This governance is proportionate to the nature, scale and complexity of the operations across our businesses. It allows the Boards, management committees and senior management to integrate climate-related risks and opportunities into our strategy, decision making and business processes.

Our climate governance structure as well as roles and responsibilities are summarised in our Annual Report and Accounts and are detailed in this section.

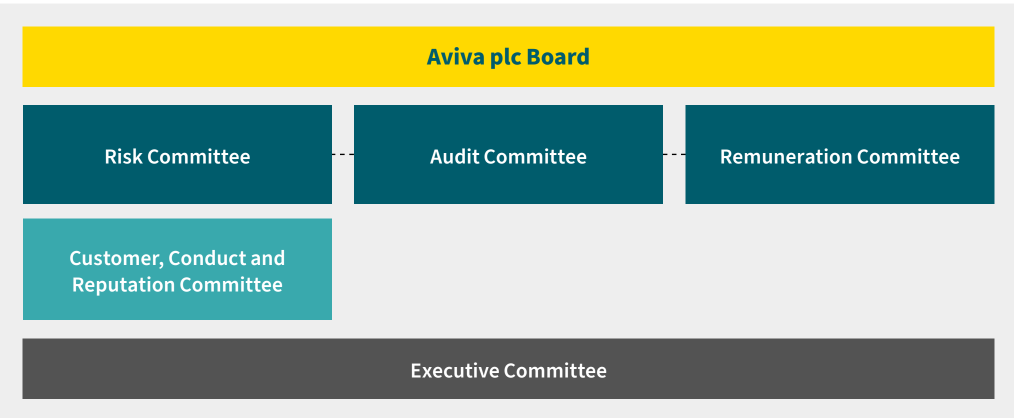
The Local Boards, Executive and Risk Committees have the same responsibilities as Group and are supported by different functions (for example investment, risk, underwriting and capital management) to embed Aviva's commitment to become a Net Zero company by 2040.

> "We integrate climate into our risk appetite framework, define our climate risk preference and incorporate climate risks into our business plans, to facilitate risk-based decision-making."
>
> **Andrea Montague**
> **Chief Risk Officer**



Our climate governance structure

Figure 1: Aviva's climate governance structure



Governance continued

Committees	Roles and responsibilities	Activity during 2021 and early 2022
Board	The Board provides leadership of Aviva within a framework of prudent and effective controls which enables risks (including climate-related risks and opportunities) to be assessed and managed.	In 2021, the Board approved Aviva's Sustainability Ambition (including our Climate Goals) and an update of our Sustainability Ambition was also presented to the Board, reporting progress and highlighting work to deliver our commitments. They also approved the 2022-2024 Business Plan (including climate metrics, targets and mitigation actions). The climate risk appetite was refined during 2021 and approved by the Board. The Board also approved the Climate-Related Financial Disclosure report.
Risk Committee	This Committee assists the Board in its oversight of risks, including climate-related risks and opportunities, by assessing the effectiveness of our risk management framework, strategy, risk appetite, risk profile and compliance with prudential regulatory requirements.	The Committee met six times in 2021 to review, manage and monitor all aspects of risk management; climate-related risks were noted in two of those meetings. In 2021 and early 2022, the Committee approved the climate risk appetite, and monitored progress made in meeting targets. The Committee reviewed the outcomes from the PRA Climate Biennial Exploratory Scenario (CBES) exercise as well as our Own Risk and Solvency Assessment (ORSA) report (including climate analysis). The Committee also requested a deep dive session on the Climate Risk Appetite Metrics and their interaction with our Sustainability Ambition targets, with a particular focus on governance across various asset classes managed by Aviva Investors.
Customer, Conduct and Reputation Committee	This Committee's responsibility is to assist the Board in shaping the culture and ethical values of the Group. This Committee is supported by Aviva's Sustainability Ambition Steering Committee.	The Committee met six times in 2021 to oversee how Aviva meets its corporate and societal obligations. Sustainability and climate-related topics were noted in two of those meetings. This Committee reviewed, in 2021 and early 2022, the development and progress of Aviva's Sustainability Ambition (including Climate Goals), governance, the non-financial reporting metrics and Climate Transition Plan. The Committee reviewed the content of the TCFD disclosures in preparation for this being voted on at the Annual General Meeting (AGM).
Audit Committee	The Committee supports the work of the Customer, Conduct and Reputation Committee in the oversight of climate and related non-financial reporting.	The Committee reviewed the climate-related financial disclosure including TCFD and recommended its approval to the Board.
Remuneration Committee	This Committee assists the Board in its oversight of remuneration including consideration of climate metrics and targets as relevant.	The Remuneration Committee approved in 2021 the metric definitions and targets for the Aviva plc 2021-2023 Long Term Incentive Plan, including metrics aligned to delivery of our Climate Transition Plan and public commitments. The Committee monitored progress against targets on a quarterly basis.
Group Executive Committee	Together with the Board, this Committee sets our strategy, values and shapes our culture.	In 2021 we established Aviva's Sustainability Ambition Steering Committee to drive and monitor the delivery of our plan and targets. This Steering Committee has delegated authority from the Group Executive Committee.

In 2021, local Boards and Risk Committees approved the 2022-2024 climate business plan and the climate risk appetite to support ongoing business decision making. These Committees monitored progress made in managing the climate-related risks against the previous business plan and reviewed the outcomes from the CBES exercise where relevant.

Governance continued

Our local Investment and Underwriting Committees considered as appropriate the management of climate-related risks and opportunities in our businesses. They ensured these are managed in line with our Sustainability Ambition, risk management framework, risk appetite, risk profile and compliance with local regulatory requirements. Aviva Investors is also embedding climate-related risks and opportunities. We seek to steer a course to Net Zero across investment teams in the company, the application of a coordinated exclusions approach and the Climate Engagement Escalation Programme.

> "We have told organisations that we invest in, particularly those high carbon emitting companies, we expect to see their Net Zero plans within the next two years or we will disengage."
>
> **Amanda Blanc**
> **Group Chief Executive Officer**

Our management's climate roles and responsibilities

The Group Chief Executive Officer (CEO) is accountable for:

- The development and execution of the Group strategy (including climate change plan) in line with policies and objectives agreed by the Board.
- The operational effectiveness and profitability of the Group.
- The leadership of the Group through executive directors and senior management team.
- The compliance by the Group with legal, regulatory, corporate governance, social, ethical and environmental principles.

Our business CEOs are accountable for:

- Compliance with legal, regulatory, corporate governance, social, ethical and environmental principles.
- Ensuring that climate is considered as part of the investment, underwriting, product design, pricing and claims processes.

In line with the PRA's Supervisory Statement 3/19 'Enhancing banks' and insurers' approaches to managing the financial risks from climate change', in 2019, the UK regulated entities' Chief Risk Officers (CROs) have been assigned the Senior Management Function responsibilities for:

- Ensuring climate-related risks and opportunities are identified, measured, monitored and managed through our risk management framework and in line with our risk appetite.
- Advising the Board on our exposure to the financial risks arising from climate change (including how these risks impact our strategy and business model) and assisting the Board with addressing and overseeing these risks.
- Assisting the Board with developing and maintaining an appropriate approach to disclosure and regulatory reporting of the financial risks from climate change.

The Group Chief Risk Officer (CRO) is responsible for:

- Oversight at a Group level of Aviva's approach to embedding climate-related risks and opportunities into governance, strategy, risk management and reporting processes.
- Scrutinising (and where necessary, challenging) Aviva's regulated businesses in relation to their management of climate-related risks.
- Advising the Board in relation to the above and related corporate and regulatory reporting requirements.

For the last two years, the business unit CROs were supported in meeting their regulatory responsibilities by a climate-related risks and opportunities project. The aim of this project was to integrate climate-related risks and opportunities

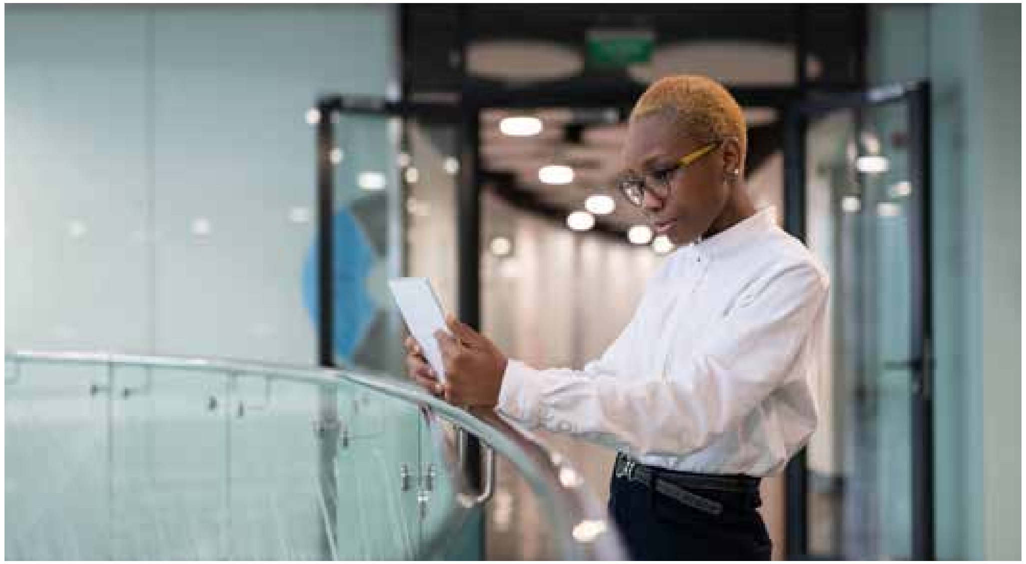
Governance continued

into our existing processes. An inter-disciplinary team with representation from across the business were delivering this project. The Group CRO was the executive sponsor of the project, supported by a Steering Group. The project was managed day-to-day by a Working Group. An Expert Panel, with internal and external membership, was responsible for reviewing and challenging key expert judgements and outputs from the project.

In addition to the responsibilities of the CEOs and the CROs, other directors and management teams across Aviva are responsible for managing those areas of the business which may affect or be affected by climate change. For example, the Group Chief Operating Officer (COO) is accountable for ensuring the execution of the 2030 Net Zero Operations and Supply Chain element of Aviva's Climate Ambition including the property, energy and IT decarbonisation that procurement practices are in line with the SBTi and that our operations are in line with our specific climate targets.

From January 2022, Senior Manager Function accountability for sustainability is being apportioned and agreed at the Executive Committee. The CEOs are responsible for the implementation and oversight of the Aviva Group Sustainability Ambition, including management of sustainability and climate-related risks. The CROs provide independent opinion and challenge of the business' management of risks including their approaches to risk identification, measuring risk impacts and advising the business on how best to manage and mitigate risk, including sustainability and climate-related risks. The CFOs advise the Board on the firm's financial exposure arising from sustainability and climate-related risks and maintain an appropriate approach to disclosure and regulatory reporting of these risks.

> "It's vital that businesses in all industries put words into action when it comes to tackling the climate emergency."
>
> **Nick Amin**
> **Chief Operating Officer**



Remuneration

In 2021, Aviva plc's 2021-2023 Long Term Incentive Plan was approved at the AGM, with 10% of the plan based on ESG metrics, split across separate measures (5% for climate and two diversity and inclusion metrics, each with a 2.5% weighting). The climate-related metric is for the % reduction in carbon intensity of shareholders' assets.

Following engagement with shareholders in late 2021, it is proposed to fully utilise the flexibility in the Directors Remuneration Policy for up to 20% of the Long Term Incentive Plan for 2022-2024 to be based on strategic performance metrics. These will be based on one climate (7.5% weighting), one customer (7.5%) and two diversity and inclusion metrics (each 2.5%). The breadth of coverage for the climate metric will be increased to include with-profits funds in addition to shareholder assets.

Aviva Investors was one of the first large asset managers to integrate ESG factors as part of the pay criteria across the firm, including for its investment desk heads. Through its Global Reward Framework, all investment employees should support responsible investment and integrate ESG into their investment processes. ESG metrics and research are embedded in the investment process and form part of the investment scorecard and annual risk attestation. The Aviva Investors CIO and investment desk heads consider how investment employees demonstrate their commitment to ESG processes as part of the determination of performance and pay outcomes.

Governance continued

Figure 2: Illustrative examples of Aviva's climate-related roles and responsibilities. Source: Aviva.

Actuarial function
This function is responsible for developing climate methodology, risk appetite and calibrations.

Asset & liability management
This function ensures the ALM position is effectively managed and the Strategic Asset Allocation is in line with the business plan objectives.

Asset management
This function incorporates environmental, social and governance considerations into investment management.

Business planning
This function sets up the business plan in line with the strategy, climate transition plan and risk appetite and identify mitigation actions.

Brand & Corporate Affairs
The function develops our sustainability strategy, defines the climate action plan, influences the integration with the business, advocates for climate policy, and supports non-financial reporting and communications.

Capital management
This function ensures climate considerations are part of the market/credit risks assessment and performs relevant scenario analysis.

Claims
This function ensures climate considerations are incorporated into the claims process e.g. 'build back better' and work with customers to help them become more resilient.

Compliance
This function ensures all relevant functions meet Aviva's standards and frameworks including climate-related risks controls.

Enterprise risk management
This function ensures climate considerations are part of our risk processes including: Risk opinion and ORSA.

External reporting
This function produces the climate-related financial disclosure in line with our customers' expectations and the regulatory requirements.

Internal audit
This function assesses and reports on the effectiveness of the design and operation of the controls with respect to climate.

Investment
This function ensures the end-to-end investment process factors climate considerations.

Legal
This function ensures compliance with climate- related legal requirements.

Operations (including IT, Property and Facilities)
These functions ensure our Operational Carbon emissions are in line with targets focusing on reducing our environmental impact through energy efficiency, clever use of technology, using renewable energy sources and minimising the carbon intensity of our car fleet.

People
This function ensures we build the required skills and knowledge of our colleagues so we all understand how we can mitigate climate-related risks, grasp opportunities and support the delivery of our commitments.

Pricing/Product development
This function incorporates climate considerations in product pricing and development; to further develop climate conscious products and services, which reward customers for environmentally responsible actions, provide some element of adaptation/resilience or additional cover where possible for those customers at risk of extreme weather impacts.

Procurement
This function ensure practices are in line with the Science Based Targets Initiative.

Reinsurance
This function incorporates climate change considerations in reinsurance arrangements.

Sales & Marketing
These functions incorporate climate change considerations into how our products are marketed to customers.

Strategy
This function considers climate change in strategy development.

Underwriting
This function incorporates climate change considerations e.g. ensure our underwriting activities support our goal to be a Net Zero Insurer by 2040.

Climate Training

Aviva has been building the skills of our Boards and our people with respect to climate considerations for a number of years, to ensure appropriate resources and expertise are developed to inform and manage the associated risks and create climate cultural awareness.

In 2021, we delivered tailored climate training to the relevant Group and local Committees. This equips our senior management to give appropriate direction to the company and ensures challenge, guidance and support are given to the executives.

In 2021, as part of our Essential Learning training[1], 20,995 of our employees, have completed a mandatory climate training to learn about its implications for our planet and our business. We envisage providing similar training at least annually. We also developed climate training available on request to all Aviva employees via Aviva University. More in-depth training has been also deployed to those who hold direct responsibilities to identify, manage, measure and report climate-related risks and opportunities.

In 2021, we have developed a guide on 'Tackling Climate Change Together'. The guide takes our people on a journey through action we've taken, from changes in our office spaces, installation of EV charging points in our car parks, refocusing our pension scheme fund choices to ethical funds and calling out when our business practices could be more green.

In 2021, Aviva Investors continued our 'ESG Know How' programme. This training is designed to provide practical support and guidance to financial advisers to help them navigate the ESG landscape, understand the regulatory changes that may affect business and provide guidance on advising their clients about ESG.

1 For context, our Essential Learning consists of modules such as Business Ethics, Financial Crime, Health and Safety, Managing Risk and Data and Staying Safe Online. The climate module covers regulatory requirements, Aviva's climate change plan and how Aviva is embedding this risk into our governance, risk management and reporting frameworks

Additional links
> ESG Know How

Strategy

Strategy

Introduction to our Climate Strategy, risks and opportunities

The ways in which the insurance sector could be affected by the climate crisis are diverse and are interconnected with other sustainability issues. Our strategic response focuses on the transition, physical and litigation risk factors and related opportunities.

The material climate-related impacts were described in the PRA 2015 report ‘The impact of climate change on the UK insurance sector’ and are defined by Aviva as follows:

- **Transition risks** relate to the business impact resulting from the transition to a low carbon economy. This may entail extensive policy, legal, technology, and market changes designed to mitigate climate change. As a result, depending on the nature, speed and focus of these changes, transition risks may pose varying levels of financial and reputational risk to organisations.
- **Physical risks** relate to the business impact arising from acute, abrupt, disruptive impacts such as more frequent and intensive storms, extreme heat and cold, floods, droughts and fires, as well as chronic gradual impacts such as higher than average temperatures, rises in sea levels and the spread of vector-borne diseases. The risk includes the effects directly resulting from events, such as damage to property, and those that may arise indirectly through subsequent events, such as the disruption of global supply chains or resource scarcity.
- **Litigation risks** relate to the business impact that could arise from parties who have suffered loss and damage from climate change and seek to recover losses from others who they believe may have been responsible. Where such claims are successful, those parties against whom the claims are made may seek to pass on some or all of the cost to insurance firms under third-party contracts.

The materiality and horizons over which climate-related risks and opportunities affect our business depend on the specific insurance products, geographies and investments being considered. For example, our general insurance business considers risks in the underwriting and pricing processes and in setting the reinsurance strategy based on a relatively short time horizon (one to three years). Aviva recognises that the increased severity and frequency of weather-related losses have the potential to negatively affect our profitability.

Consequently, large catastrophic losses are already explicitly considered in our economic capital modelling to ensure resilience to such catastrophic scenarios.

In contrast, when developing our new product strategy and updating Aviva’s overall business plan, the impact of these risks and opportunities is considered over a medium time horizon (three to five years). And with respect to life and pensions, in areas such as setting premium rates and reserves for annuities in payment as well as our investment strategy to back those liabilities, the impact of these risks and opportunities needs to be considered over a much longer time horizon (five years plus).

In the following table, we have provided a summary description of the material climate-related risks and opportunities that we are or could become exposed to and the time horizons over which they could manifest - further details on these and other risks and opportunities are provided throughout this report. We model the impacts of climate change on our business under different temperature pathways using our Climate VaR measure. The output of this modelling along with other analysis, research, data and metrics informs our strategic response to mitigate, transfer, accept or control our exposure to climate risks, which are expected to manifest in the short, medium and long-term.

Our exposure to climate risk is more severe under higher temperature pathways, meaning we need to lead by example and co-ordinate the global response to the low-carbon transition to limit both ours, and humanity’s, exposure to climate breakdown.

Transition opportunities to the low-carbon economy are expected to manifest in the short, medium and long-term, therefore it is vital to ensure we are equipped to respond to these opportunities, to provide long-term value to our shareholders.

Strategy continued

Climate-related impacts

Risks

Description

As an Asset Manager, Asset Owner, Savings and Pension Provider:
Reduction in returns from company investments in highly carbon-intensive companies and sectors, where those companies are not taking action to transition to a low carbon economy **(Short to Medium-term)** and due to extreme weather events as well as chronic effects that could impact many different types of companies and sectors, especially those not taking sufficient action to build resilience and adapt to climate change **(Medium to Long-term)**

Reduction in returns from real assets that are not compatible with the transition to a low carbon economy **(Short to Medium-term)** and due to extreme weather events as well as chronic effects which present financial risks though loss of revenues from business interruption and / or increased capital costs to repair assets. **(Medium to Long-term)**

Reduction in returns from sovereign holdings where countries are exposed to the transition to a low carbon economy or physical effects of climate change and are not able to mitigate or adapt and build resilience to these **(Medium to Long-term)**

As an Insurer:
Disruption to the general insurance market, for example a move to electric and autonomous vehicles and sharing economy or changes in extreme weather that impact product design and demand as well as affordability of insurance products in some cases **(Medium to Long-term)**

Disruption to the life insurance market as a result in potential changes in morbidity or mortality rates as a result of less air pollution due to the transition to a low carbon economy, or a reduction in healthcare spending and an increase in the prevalence of certain health conditions in higher temperature scenarios **(Medium to Long-term)**

Climate-related impacts

Opportunities

Description

As an Asset Manager, Asset Owner, Savings and Pension Provider:
Enhanced returns on company investments aligned with the transition to a low carbon economy **(Short to Medium-term)** and which are resilient to the physical effects of climate change **(Medium to Long-term)**

Enhanced returns on real assets aligned with the transition to a low carbon economy **(Short to Medium-term)** and which are resilient to the physical effects of climate change **(Medium to Long-term)**

Enhanced returns from sovereign holdings where countries are committed to the transition to a low carbon economy and are resilient to physical effects of climate change **(Medium to Long-term)**

As an Insurer:
Develop climate-conscious general insurance products and services that support the transition to a low carbon economy and reward customers for environmentally responsible actions and help to build resilience to climate change **(Short to Medium-term)**

Develop climate-conscious savings and retirements products and services that enable and incentivize climate-positive behaviour from customers **(Short to Medium-term)**

Our Climate Scenario Analysis

The TCFD recommends that scenario analysis is a key tool for helping to identify the potential impact of climate change on an organisation and its end to end value chain.

One of the inputs into our climate risk assessment process is the scenario analysis performed through our Climate Value-at-Risk (VaR) measure. This measure enables the potential financial impacts of future climate-related risks and opportunities to be assessed in different IPCC scenarios and in a blended aggregate scenario[1] as well as providing an indication of the resilience of our strategy.

In this section we outline how we have developed our Climate VaR metric, the data inputs, current calculation methodology and its continuing evolution.

We have been guided by experts

Climate impacts have the potential to affect insurers' balance sheets as well as the long-term business model. In order to address this challenge, Aviva has developed a Climate VaR measure to assess the financial exposure and resilience of our business and strategy to different climate scenarios.

To support the development of Climate VaR, an inter-disciplinary team has been created with representation from across the business and an expert panel has been set-up to review and challenge the main assumptions made in the selection, development and modelling of the financial impacts across scenarios. The panel includes internal experts as well as external experts Dr Simon Dietz, Dr Nick Robins, Dr Swenja Surminski and Dr Frank Venmans from the Grantham Research Institute on Climate Change and the Environment at the London School of Economics, Dr Paul Pritchard an Independent Sustainability Advisor, Dr Julius Kob and Dr Katharina Dittrich from Warwick Business School.

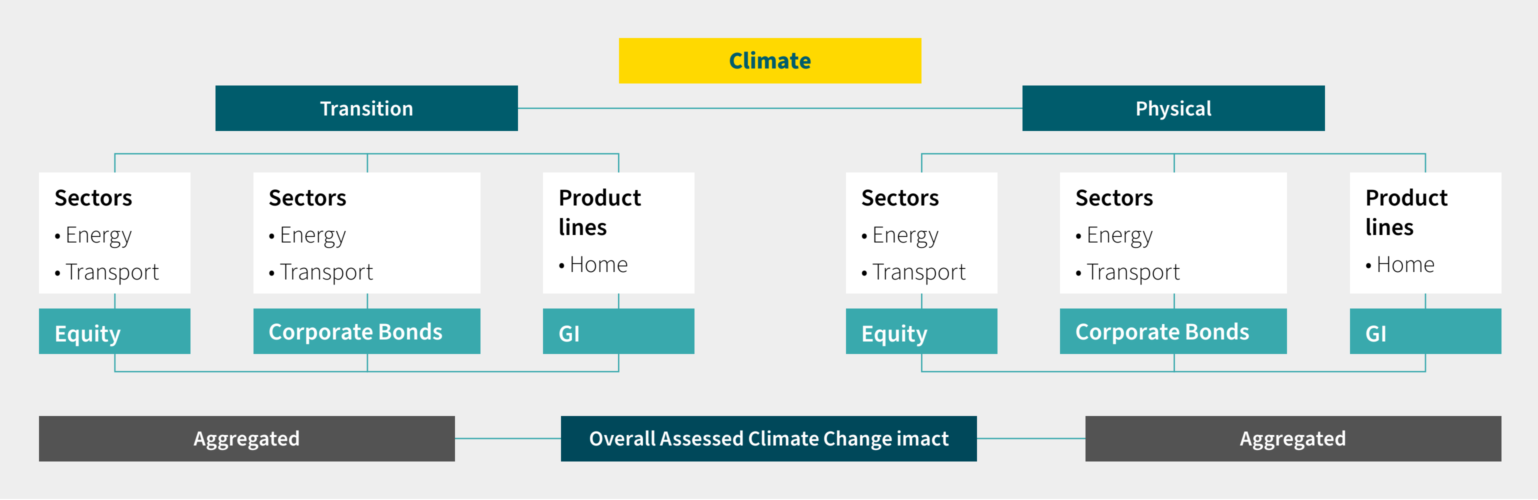
Underpinned by science

The IPCC has identified potential future scenarios with respect to climate change[2]. Each scenario describes a potential trajectory for future levels of greenhouse gases and other air pollutants. These can be mapped to likely temperature rises by 2100 and levels of economy-wide mitigations required:

- 1.5°C (aggressive mitigation),
- 2°C (strong mitigation),
- 3°C (some mitigation),
- 4°C (no further mitigation).

The IPCC Global Warming of 1.5°C report, published in October 2018, highlights the need to take dramatic action now to keep warming below 1.5°C and the potential severe consequences, if this is not achieved.

Figure 3: Aviva's aggregation process for each scenario. Source: Aviva



1 See Appendix for more details of our Climate VaR methodology and the MSCI model

2 The IPCC Fifth Assessment Report (AR5) provides an overview of the state of knowledge concerning the science of climate change.

Our Climate Scenario Analysis continued

A bespoke approach for our business

We calculate a Climate VaR for the four scenarios, reflecting the different emission projections and associated temperature pathways. We also aggregate these outputs to determine the overall impact across all scenarios by assigning relative likelihoods to each scenario.

The climate-related risks and opportunities modelled are predominantly assessed with the following assumptions, but are tailored to the impacts we observe across our diverse range of asset types and product offerings:

- Transition: covers the projected costs of policy action related to limiting greenhouse gas emissions and projected profits from green revenues arising from the development of new technologies and patents across the market.
- Physical: covers the financial impact from extreme weather (e.g. flood, windstorm and tropical cyclones) and chronic effects (e.g. heat and cold, heavy precipitation and snowfall or wind gusts), although we recognise that the most extreme physical effects will only be felt in the second half of the century.
- Litigation: we also recognise there is a growing trend in climate-related litigation and have qualitatively assessed its potential exposure accordingly.

The Appendix details our methodology on how risks and opportunities are calculated by asset class and product line.

Challenges with data and approach

Quantifying the impacts of climate change is an emerging practice, with inherent uncertainty in the approach taken as a range of scenarios are assessed.

It is challenging to obtain consistent asset data across our entire portfolio. As more consistent emissions data becomes accessible, this will improve our ability to accurately measure Climate VaR.

We use MSCI's methodology to assess the exposure to our credit, equity and real estate assets. To ensure we are covering the full scope of the portfolio and potential VaR from climate, we have converted qualitative frameworks, such as the ClimateWise Infrastructure Framework, into financial impacts to estimate the potential exposure and opportunity for the portfolio. We continue to work with industry bodies to create industry-wide methodologies to drive consistency across the sector.

Our methodology is continuing to evolve

With methodologies and data becoming available, we continue to develop and broaden the scope of our work. We made several methodology improvements in 2021. In particular:

- We have incorporated a number of MSCI methodology improvements specifically related to modelling physical risk.
- We have incorporated a number of learnings from the Climate Biennial Exploratory Scenario (CBES) exercise[1]:
  - More granular General Insurance property modelling of physical risk has been used to validate the impacts of physical climate risks on our UK, Irish and Canadian individual and Commercial books.
  - Matching Adjustment offset and tax impacts.
  - Indirect impacts of physical risk (e.g. lower economic growth, lower productivity and supply chain disruption).
- Post the release of the IPCC 6th assessment physical basis report we have reviewed the likelihood of different scenarios which has impacted our aggregate approach.

Deepening Aviva's capabilities

In 2022, we will continue to build upon the current methodology:

- Enhancing the approach towards modelling physical risk per temperature scenario.
- Review the baseline against which impacts are assessed, as part of our ongoing preparation to disclose quantified Climate VaR impacts.
- Revisit the approach to sovereign modelling once the intensity measure has been defined by the NZAOA.

1 Aviva is one of ten major insurers participating in the Bank of England's 2021 CBES exercise. See Appendix for further details.

Our Climate Scenario Analysis continued

Climate VaR Findings

Aviva has been reporting on this metric since 2018. Figure 4 compares a plausible range of outcomes (5^{th} to 95^{th} percentile) from our Climate VaR analysis for the different scenarios considered. Aviva's strategy is resilient to climate-related risks and opportunities in all scenarios.

Similar to last year, in all scenarios the impact on insurance liabilities is more limited than on investment returns. However, there is potential for some impact on life and pensions business as a result of changes in mortality rates in different scenarios either from physical effects such as more extreme hot and cold weather or transition effects related to changes in pollution levels. The impact on general insurance liabilities is relatively limited because of the short-term nature of the business and the ability to re-price annually and mitigation provided by our reinsurance programme. However, the physical effects of climate change will result in more risks and perils becoming either uninsurable or unaffordable over the longer term.

Figure 5a shows that, as to be expected, the proportion of transition risk reduces as we move to higher temperature pathways. Note that physical risk is present even in the transition scenarios.

Figure 5b shows the split of climate-related risks and opportunities to Aviva; credit, equity and sovereign risks are the largest components.

4°C insights:

Aviva is most exposed to the 4°C scenario where physical risk dominates, negatively impacting long-term investment returns on equities, corporate bonds, real estate, real estate loans and sovereign exposures.

1.5 - 2°C insights:

The aggressive and strong mitigation 1.5°C and 2°C scenarios are the only scenarios with potential upside.

Physical risk impacts are more limited in our analysis, but there is still downside risk on long-term investment returns from carbon intensive sectors (for example utilities) as a result of transition policy actions. This is offset, partially, by revenues on new technologies from some sectors (for example automotives).

Our results show there is a clear benefit in terms of keeping temperature rises below 2°C.

There is an inherent uncertainty in the modelling as well as a sensitivity to underlying methods and assumptions. It is also the case that many of the socio-ecological benefits and the reduced risk of reaching climate tipping points in a 1.5°C scenario are not captured in this analysis. Furthermore, maintaining an option on limiting warming to 1.5°C means targeting it now[1].

Figure 4: Aviva's Climate VaR output by scenario for shareholder funds as at 31/12/2021. Source: Aviva

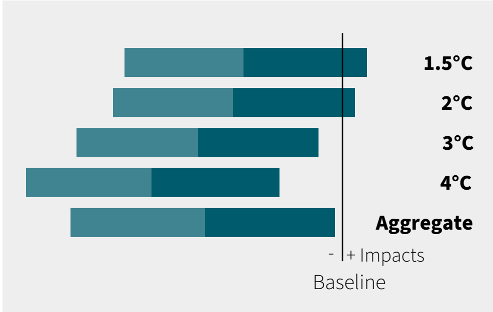


Figure 5a: Transition versus physical risk by scenario for Aviva's shareholder funds as at 31/12/2021. Source: Aviva

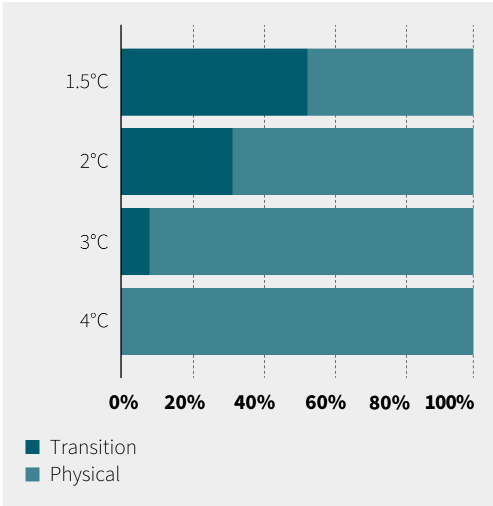
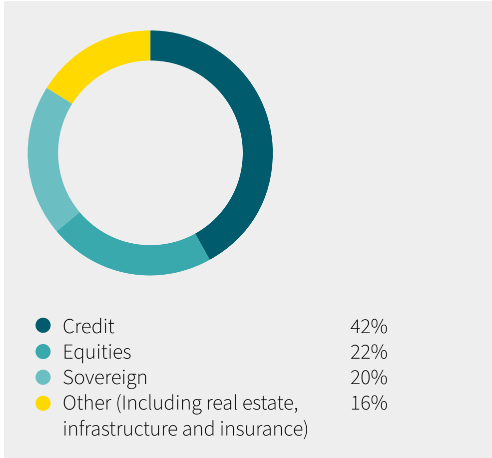


Figure 5b: Proportion of Climate VaR aggregated impacts split by asset type for Aviva's shareholder funds as at 31/12/2021. Source: Aviva



1 The Economics of 1.5°C Climate Change.

Our Strategic Focus

The findings from Climate VaR make it clear that we need to be strategic in our response, by managing our exposure to physical impacts and seizing the opportunities of contributing to the low carbon future. Our Climate Transition Plan is the roadmap to achieve this across our business.

To improve the resilience of the financial system, our economy and society more widely, we believe it is paramount that we work together. With our experience on climate matters, Aviva should lead from the front. We also have a duty as an Asset Manager, Asset Owner, Insurer and Employer, to continue to be stewards of the business built over the past 325 years.

To deliver on our climate ambition, and reduce our exposure to climate-related risks, we focus on five key areas:

Credit: Richie Morgan

Accountability and Leadership

We advocate for systemic change to the international financial architecture so we can collectively deliver on the goals of the Paris Agreement.

We collaborate across our industry by driving global alliances such as Glasgow Financial Alliance for Net Zero (GFANZ), United Nations backed Net Zero Asset Owner Alliance (NZAOA), United Nations backed Net Zero Insurance Alliance (NZIA), Net Zero Asset Managers initiative (NZAM) and ClimateWise.

Decarbonising our Investment Portfolio

We have set ambitious targets to be Net Zero in our Portfolio by 2040.

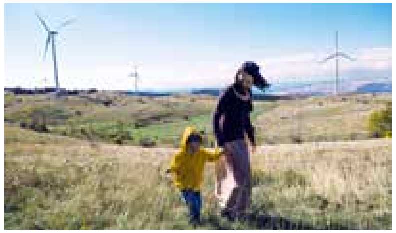
We have targeted the 30 largest global polluters in our Climate Engagement Escalation Programme.

We have implemented an investment Stoplist for companies making more than 5% of revenues from thermal coal.

We have committed to increase our green portfolio by investing £6 billion in green assets by 2025.

By 2025, we will invest £2.5bn in low carbon and renewable energy infrastructure.

We have committed £10 billion of assets from our auto-enrolment default funds and other policyholder funds into lower carbon strategies.



Insuring a Net Zero Future

We have set our ambition to become a 'top 3' insurer in the London Market Renewable Energy Sector by 2022.

We have published our ESG Baseline Underwriting Statement which clearly defines the activities we exclude as an insurer including in respect of the highest emission fuels.

We have committed to making our claims management process Net Zero by 2030.

Decarbonising our Operations and Supply Chain

We have committed to being Net Zero in our operations and supply chain by 2030.

We have committed to using 100% renewable electricity for all our offices by 2025.

We have committed to moving our global fleet of 1,540 vehicles to electric/hybrid by 2025 via EV100.

Embedding Climate in our Culture

Our staff pension scheme trustees aligned the scheme to be Net Zero by 2040.

ESG considerations have been incorporated into every decision-making process at Aviva.

Our employees have volunteered and fundraised through the Aviva Foundation, Aviva Community Fund (ACF) and our partnership with the WWF.

We have released 'Against our Nature', a book giving the reader a Hitchhiker's Guide to the climate crisis.

Accountability and Leadership

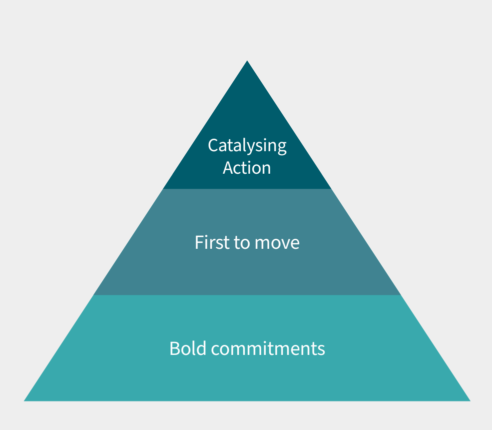
One way to manage the risks caused by the transition and physical risks of climate change is to lead. We believe Aviva is well positioned with our experience, control and influence to lead from the front.

Understanding the status quo

The actions and decisions taken across all domains of the economy are presently insufficient to realise the low carbon transition the world needs. **Courage to change, bold plans, optimism and catalytic action** are required to pivot the world towards a low carbon economy while the window to keep 1.5°C alive remains slightly ajar. We believe these attributes embody the true leadership necessary for progress that is not only right for us as a business – and which will protect value for our clients, investors and broader stakeholders – but is right for society. We know we cannot do this alone: we must all row together, to create powerful strokes of change – governments, markets, the financial system and broader society. Aviva will continue to lead from the front, while all the oars are aligning.

Our responsible and proactive leadership brings together all of our capabilities and strengths to serve the needs of our clients, and benefit society. At Aviva our purpose is clear: To be with our customers for a better tomorrow. We maintain our purpose by seeking to correct the financial system we are in, but it is currently delivering negative outcomes for customers, investors and broader society.

Figure 6: Attributes of a leader. Source: Aviva

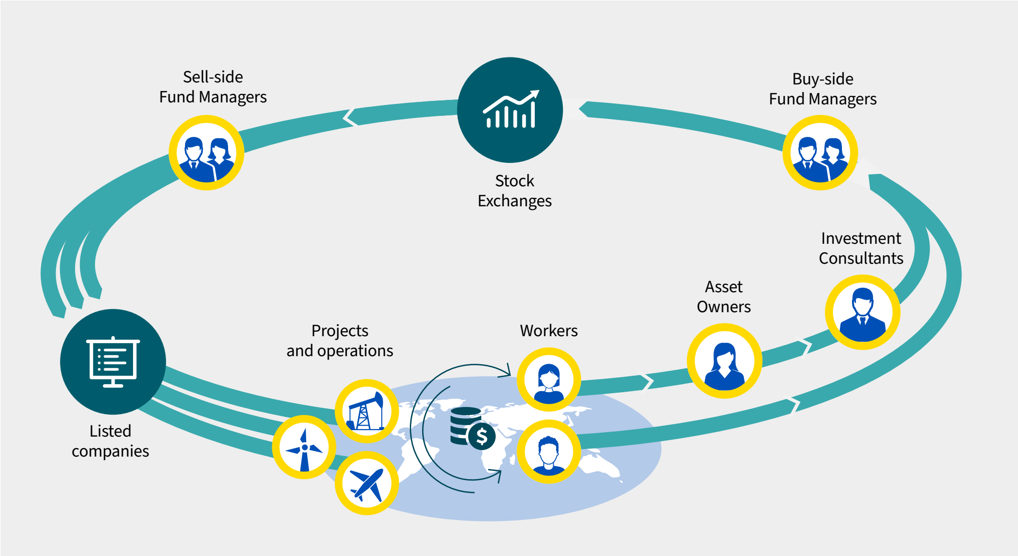


There are inherent issues with the current financial system

Fundamentally, the financial system assumes indefinite growth without internalising external impacts and does not give proper consideration to the Earth's ecological coping limits and planetary boundaries – all of which diminish the ability of the natural world to support and sustain our lives and livelihoods. This leaves the question: does the system serve the needs of the societies investing in it?

One way that capital flows into financial markets is by individuals contributing to their investments or pension funds on a regular basis. Asset Owners, Financial Advisors and Fund Managers then invest **your** money on **your** behalf, with the objective of making financial returns – and are judged on that performance – which then attracts further investment. Yet those investment decisions are typically guided by company valuation techniques that focus on short-term revenue and profit growth, often ignoring the potential longer-term impacts of climate change, as well as social and natural capital. As a result, there is a real risk that company performance, position and valuation is less accurate than many assume – in the worst case, long-term terminal value could plummet to zero.

Figure 7: Schematic showing how individuals can interact with capital markets. Source: Aviva



Accountability and Leadership continued

We are inadvertently engineering a dystopia

The world is currently on track to continue driving up global temperatures, exacerbate climate change and trigger tipping points that irreversibly alter the safe and stable climate that has allowed humanity to flourish for the last 10,000 years. Dystopia is not inevitable, we can use the time we have to re-wire the financial system to deliver against the goals of the Paris agreement.

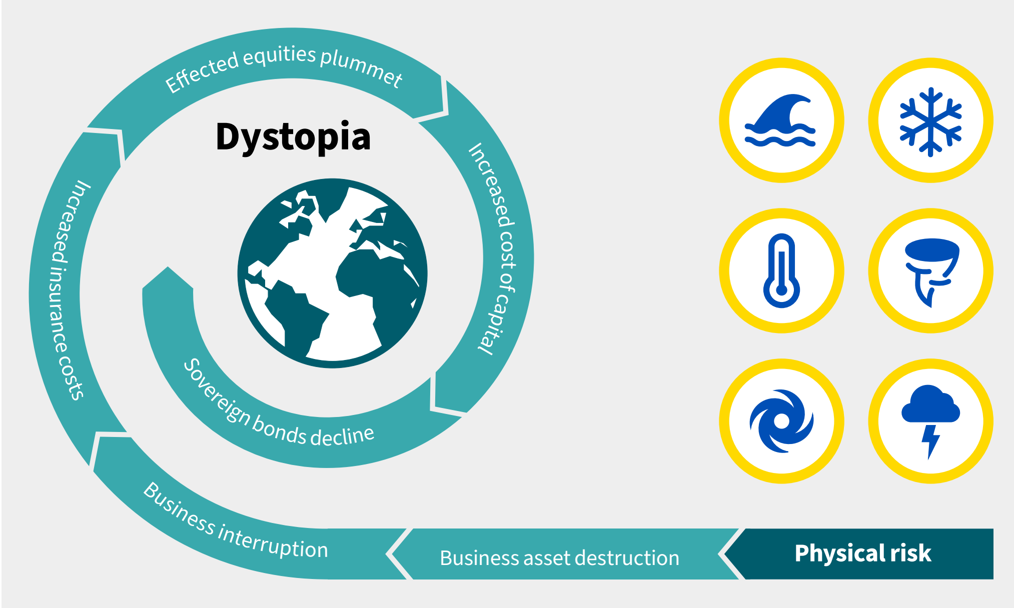
As this worsens, the risk to our business and society is:

- **More frequent and intense natural disasters** (storms, droughts, wildfires, floods, melting icecaps) will hurt great swathes of physically and financially vulnerable communities , damage infrastructure and halt business activity, destroying livelihoods, families, economies, and our way of life.
- **Insurers will face a rise in claims** and increases to their liabilities, with ripple effects going through to re-insurers.
- **Insurance premiums will increase** to the point where insurance for certain businesses, sectors and locations becomes untenable, causing businesses to stop operating due to excessive risk and their values to plummet.
- **Investment, equity, and credit values will tumble** as businesses fail to adapt to climate change and a low carbon economy, dramatically impacting investment portfolios.
- **Every market player and government will be exposed to increased capital costs,** due to the interconnectivity of the above issues, where finance is woven through our economies.

These domino effects matter to Aviva. We have an obligation to our customers, who entrust us to manage their pensions and investments, and a fiduciary duty to our shareholders to preserve their shareholder value over time. How then can we collectively avoid a market collapse that unravels us all?

> “Our investors, customers and people expect action, progress and improvement. And we are going to give it to them.”
>
> **Amanda Blanc**
> **Group Chief Executive Officer**

Figure 8: Physical events could cause a chain of events leading to economic dystopia. Source: Aviva



Accountability and Leadership continued

The path away from dystopia towards a better tomorrow

We need to take a path away from dystopia. In doing so, we can unlock the financial system to positively fight the climate crisis. In the UK alone, around £2.6 trillion[1] is invested in pension schemes, capital which could be allocated to enable business and the public sector to transition to a low carbon future. Aviva is not claiming to be able to do this alone, but together, we can get on the right path to a better tomorrow, even aiming for Utopia.

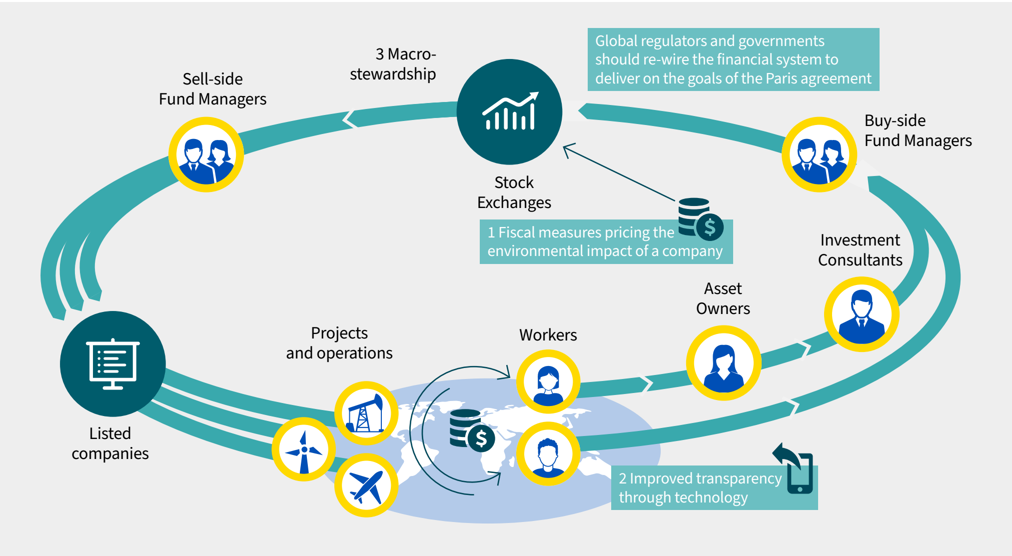
There are three changes, among others, that will be pivotal to getting closer to where we need to be (or even just to avoid world-wide climate catastrophe). These changes, supported by collaborative regulatory development, should help to reshape capital markets to incentivise sustainable decision making and improve asset protection:

1.Implement fiscal measures to bring negative externalities into market prices: to reflect the full social and environmental costs in company market valuations, by bringing environmental costs into company financial statements via carbon taxes and market mechanisms such as emissions trading schemes.

2. Engage individuals by improving transparency throughout the financial system: markets don't have a conscience, but people do. The reality is that our money funds the direction of business. For their stake in the business, investors get to vote in company decisions. Although there has been a seismic shift in societies' understanding of the potential impacts of climate change, we have not seen an increased interest in our voting record on behalf of of investors and customers. Modern technology offers solutions to increase the transparency of the financial system through apps and dashboards. If customers could see how their money is being used, and even choose a preference for how their votes are used at AGMs then climate cognisance could be more easily injected into investments and market dynamics.

3. Re-design an international financial architecture that supports carbon reduction: we are campaigning for systemic re-wiring of the international financial architecture. International bodies should provide specific mandates to all regulators and standard setters to play their role in creating and stewarding an international financial transition plan for Net Zero.

Figure 9: Schematic showing where fiscal measures, improved transparency and redesigning the international financial architecture will interact with capital flows within capital markets. Source: Aviva



We are committed to pushing for a better tomorrow

At Aviva, we are proud of our leadership role in society and acting out our values. We can control our own operations, but also have significant influence through the £401.4 billion in assets that we have stewardship over, alongside the innovations and customers we support via our insurance.

What are we doing to drive the required change?

The climate crisis is a collective problem that necessitates collective action in its solutions. For Aviva, this means we need to lead the way and bring our employees, industry peers, and communities on the journey with us. Some of the key actions include:

- We have an ambitious carbon reduction plan , with our internal operations and supply chain being Net Zero by 2030 (See section: Operational Carbon emissions and supply chain).
- We have been leading the debate for decades (See timeline section: Our Climate Story).
- We are driving cultural transformation within our organisation (See section: Embedding climate across our culture).
- Signed up to SBTi for Scope 1&2, Supply Chain, and Investment emissions.
- Committed to an electric future by EV100, switching our company car fleet to electric vehicles and installing EV charge points by 2025.
- We have committed to improve Biodiversity through our Terra Carte Pledge and financing for Biodiversity.

1 Source: Make my money matter webpage: What's the issue. (www.makemymoneymatter.co.uk/whats-the-issue/)

Accountability and Leadership continued

We set out here three activities we are particularly proud of:

A. Active Ownership

As a responsible investor, we have decided to take active ownership of our investment portfolios to achieve our Net Zero goal. There are differing views on this, but we believe that divestment would be an easy option and change little in the real world. We want to be an active owner and use our position in the market to push companies we invest in to commit to ambitious climate action – and drive the economic transition required.

B. Insurance to enable the transition

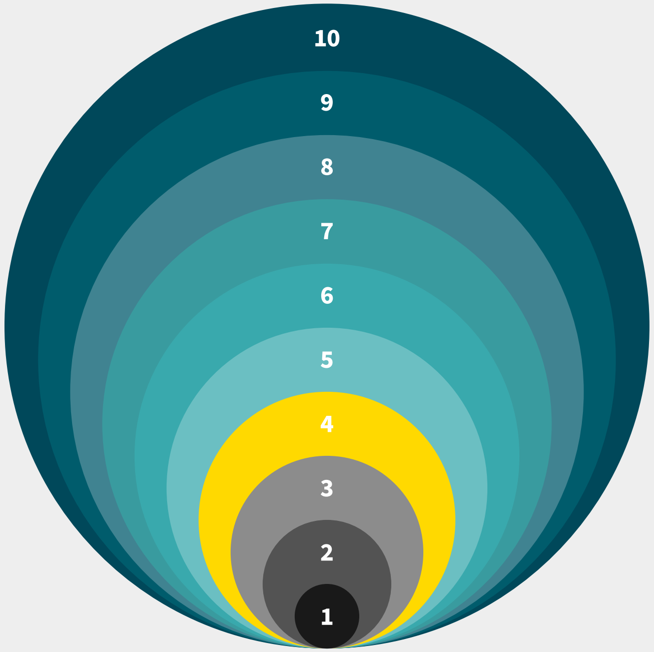
Insurance is a key pillar that the financial system is dependent on, giving Aviva significant influence on company behaviour and activity. In 2019, we made a bold commitment to exit the insurance of fossil fuel power generation assets and replaced this with a renewable insurance offering.

C. Influencing systemic change

Aviva takes its responsibility to influence systemic change, to nudge us all towards a just transition. We are doing this in many ways, from the innovative financial products we offer in the market, thorough using our voice in alliances such as the GFANZ, NZAOA, NZIA, IIGCC, Transition Pathway Initiative and Climate Action 100+.

We were actively engaged with policy makers, business and industry at COP26, supporting the announcement to make the UK the first Net Zero financial centre and requirement for businesses to issue a climate transition plan – we published a joint report with the WWF earlier this year asking the chancellor to mandate Net Zero transition plans aligned with a 1.5°C future, demonstrating again how we advocate for real change.

Figure 10: Our spheres of influence. Source: Aviva



10 Planetary boundary — We are advocating for planetary considerations within regulation and financial markets.

9 Civil society — Advocating for change will gather attention, civil society can demand more from governments and policy setters to implement change.

8 International Financial Architecture (IFA) — Advocate for systemic rewiring of the IFA to provide specific mandates to all regulators and standards setter to play their role in creating and stewarding an international financial transition plan for Net Zero.

7 Sovereign debt — We work with sovereigns to encourage participation in international alliances such as the NGFS.

6 International Financial Institutions (IFIs) Issuers — Aviva can partner with issuers to provide multilateral development funding for climate action projects.

5 Real asset and infrastructure — As an investor and insurer of infrastructure we can support green innovation as well as excluding fossil fuel projects from our investments and insurance boundaries.

4 Investee and insured companies — We can use our influence as shareholders to vote for climate action. As a major insurer we can choose which products we insure and influence our peers to follow suit.

3 Influence with our peers — Within the alliances we operate we can collaborate and seek to influence companies we invest in and policy decisions.

2 Our business and its influence — Aviva can influence our suppliers and use our purchasing power to demand change.

1 Clients and end beneficiaries — We provide insurance coverage to enable the use of green assets such as solar panels and electric vehicles. We can use exclusion lists and choose not to work with high-carbon emitters who are not transitioning.

Accountability and Leadership continued

Pioneering new sustainable finance instruments

Catalysing action through innovation and collaboration with market participants will be integral to driving the transition to a low-carbon economy. In May 2021, Aviva and BNP Paribas completed an ESG-linked interest rate swap repack (a contract where parties exchange one set of cashflows for another) with the Associated British Ports (ABP) on a 30-year term.

Aviva Investors real assets business acted on behalf of Aviva UK Life, who set the KPIs, in this latest sustainability linked instrument. While Aviva Investors provide a number of swaps to corporate and infrastructure clients a year, we have pioneered what is believed to be first institutional swap repack transaction to incorporate sustainability-linked KPIs, with more in the pipeline for 2022 and beyond. To ensure the targets in the arrangement were sufficiently ambitious, we engaged with ISS ESG to provide a second-party review.

A key pillar of the arrangement, which will drive positive action, is the offering to ABP of discounted hedging rates provided it meets environmental KPIs over the lifetime of the facility. The targets include a 65% reduction in combined Scope 1 and Scope 2 emissions by 2030, compared to the 2014 baseline. Given the long-term nature of the arrangement, these decarbonisation objectives mean that the arrangement can provide long-term cash flows to match liabilities in accordance with Aviva's ambitious Net Zero Portfolio by 2040 target.

Alliances	2021 Progress	Impact
Glasgow Financial Alliance for Net Zero (GFANZ)	In 2021, Aviva supported the creation of the GFANZ in the run up to COP26. After COP26, GFANZ's membership base had a combined AUM of $130 trillion.	GFANZ is working as an alliance across finance to turn commitments into action and to mobilise private capital by bringing together existing and new Net Zero finance initiatives.
Net Zero Asset Owner Alliance (NZAOA)	Aviva has contributed to the NZAOA's first progress report - 'Credible Ambition, Immediate Action' and is represented on the workstream developing sovereign bond carbon attribution methodology.	Financial services can better tackle the challenges of transitioning to a low carbon economy, such as improving data quality, by collaborating and aligning methodologies.
Net Zero Insurer Alliance (NZIA)	Aviva is piloting a carbon attribution model for underwriting, aligning to the CRO Forum's Weighted Average Carbon Intensity (WACI) methodology, to share with the other NZIA members as a possible way of measuring our impact.	Influencing our peers to incorporate the weighted carbon intensity into their underwriting decisions will drive up pricing for carbon intense operations and incentives low carbon alternatives.
World Benchmarking Alliance (WBA)	In 2018, we launched the WBA, who publish free and transparent benchmarks ranking companies on contributions towards achieving the UN SDGs. In 2021, WBA launched assessments on how companies are gearing up to the just transition, a study concluding that Electric Utilities and Automotive industries increasingly off track against climate targets, and an oil and gas benchmark.	By devising SDG performance metrics, investors have the information they need to make sustainable investment decisions within certain industries. We expect capital to move towards sustainable business as the data quality is improved.

It takes Aviva. We are a recognised leader and now we are inspiring the confidence to change our financial system and recreate a system that cares for our communities and customers.

Decarbonising our investment portfolio

Our investments represent the biggest share of the emissions to which we contribute as a company, and therefore also one of the areas on which our efforts should focus the most to reduce the impact of the transition to a low carbon economy on our financial performance.

As an asset owner, asset manager, and long-term savings and pensions provider, we are able to influence the global transition to lower carbon economies through our responsible investment.

Our assets span investments in international economies, real estate, infrastructure projects and companies around the globe. These investments help our customers save for their future.

We seek to align our investments with a pathway towards Net Zero carbon emissions and ensure consistency with the 1.5°C Paris ambition. That's why we aim to drive the transition of all assets to Net Zero by 2040. This is a decade ahead of the Net Zero Asset Owners Alliance commitment of transitioning portfolios across all asset classes to Net Zero emissions by 2050 and most economies Net Zero targets.

We recognise that this ambition is not easy, and therefore it is very important that we track our progress very closely. As part of our Climate Transition Plan, we outlined how we calculate our portfolio emissions and have set targets for how we will measure our portfolio transition.

Measuring decarbonisation success

The main metric we use to assess our portfolio performance for our Net Zero commitments is carbon intensity by revenue. This provides us with an assessment of the carbon intensity of our investees' businesses that we can use to track our investment carbon footprint. We target a reduction in the carbon intensity investments of 25% by 2025 and 60% by 2030. By the end of 2021, we had reduced the weighted average carbon intensity of our measurable investments by 16% compared against a 2019 baseline.

We also use an implied temperature rise metric (Portfolio Warming Potential), to provide forward-looking insights across our portfolio, to ensure our portfolio is aligning to our Net Zero ambition.

Figure 11: Aviva's Net Zero trajectory for Scope 3 (investment) emissions. Source: Aviva

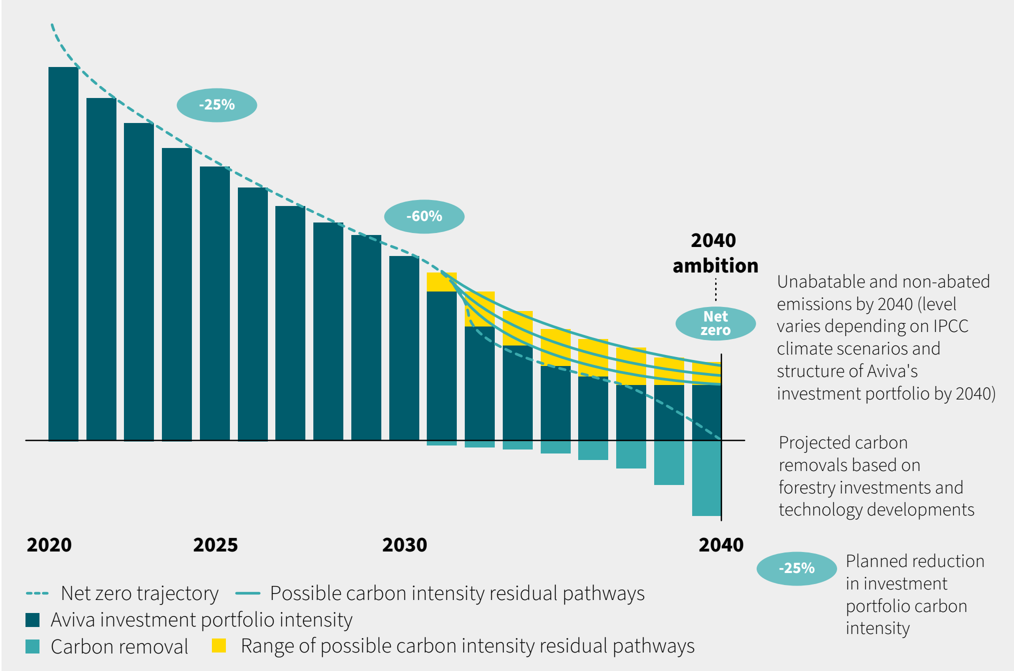


Figure 11, which is for illustrative purposes only, depicts how Aviva expects to reach Net Zero, in line with the SBTi Net Zero Standard. The carbon intensity trajectory for 2020-2030 aligns with our carbon footprint targets. However, the trajectory beyond 2030 is dependent on IPCC's climate scenarios and the evolving structure of Aviva's investment portfolio. As such, the portfolio carbon intensity reductions and the amount and type of carbon removals shown are a representation of the possible pathways. We will provide more information on this as we confirm our Science Based Targets later this year, aligning to the Net Zero standard, and 2030-2040 approach.

Decarbonising our investment portfolio continued

We are involved in investments in three ways:

Asset Owner

As an Asset Owner, we are the decision maker about where equity and real estate investments are made, though our ultimate influence over the target entity depends on the size of our investment.

Asset Manager

As an Asset Manager, we will act as long-term stewards of our clients' assets originating new assets that are aligned to a 2040 Net Zero pathway.

Savings and pension provider

For long-term savings and pensions products, we are investing customers' money and they are the decision maker as to where their funds are invested. To assist our customers, we integrate consideration of long-term climate-related issues into the products and services we offer.

It takes a range of levers to decarbonise

The first three levers within our portfolio decarbonisation strategy focus on reducing our exposure to the most harmful practices through engagement, policy and risk management processes, with the final two levers focus on grasping the opportunities arising from transition.

- To operationalise our Net Zero pledges, we will work with a full set of levers across five main areas:
- Active ownership: using our voice and vote to pressure companies and directors
- Divesting where necessary and applying portfolio constraints for high carbon emitting sectors and individual names
- Tilting investments towards cleaner sectors and the best companies within sectors
- Financing the transition: grasping the opportunity of a low carbon economy
- Providing products and services for our customers and tools to interrogate their portfolio

Active Ownership:

The 'Engagement First' philosophy of Aviva Investors promotes the relative merits of engagement over divestment as the more effective mechanism of delivering positive change and outcomes for our clients and society.

SBTi developments

Aviva committed to the Science Based Targets initiative (SBTi) and the Business Ambition for 1.5°C in March 2021. We are developing our science-based targets which will cover our scopes 1, 2 and 3 (investments and supply chain) emissions.

The most material category of emissions across our value chain come from our investments. We have outlined our emission calculation methodologies in our Climate Transition Plan, which are consistent with the SBTi's methodology for financial institutions, aligned to a 1.5°C pathway.

We plan to have our targets validated by SBTi and publicly announce them in 2022.

Decarbonising our investment portfolio continued

Climate Engagement Escalation Programme

Aviva Investors target engagement with 30 systemically important carbon emitters in which we invest, and that currently produce 30% of global scope 3 emissions, to encourage the reduction of their carbon footprint. Aviva Investors is committed to full divestment of targeted companies that fail to meet its climate expectations.

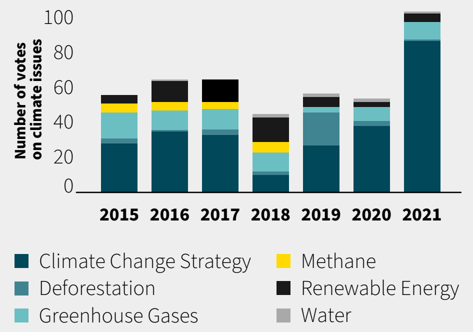
Our engagement with these companies is centred on following areas:

- **Climate targets:** Set 2050 Net Zero scope 1, 2 and 3 emissions targets for the entirety of their business operations, ideally validated by the SBTi.
- **Transition plans:** Decarbonisation roadmaps must be aligned with science, include near-term transition targets and be fully integrated across corporate strategy, core business and financing activities.
- **Management incentives:** Climate targets must be meaningfully reflected in short and long-term variable pay plans for senior leadership and the wider business.
- **Climate disclosures:** Align disclosures with the TCFD framework, including high-quality reporting of business impacts under various climate scenarios.
- **Climate lobbying:** Align all lobbying activities with the ambitions of the Paris Agreement.

During the year we developed the evaluation methodology, undertook a baseline assessment, initiated targeted engagement, and completed a year-end review of progress. **To date we have undertaken 122 individual company engagements, recorded 95 positive changes linked to our engagement asks, and placed 16 of the 30 companies on a watchlist for potential escalation in 2022.**

In January 2022, Aviva Investors announced it intends to vote against the election of directors at companies where their commitments on climate change, biodiversity and human rights fall short of its expectations.

Figure 12a: Active voting on resolutions related to climate issues (2015-2021) as at 31/12/2021. Source: Aviva Investors.



Overall engagement on climate issues has increased in the year, with 214 individual engagements in 2021, an increase of 81% from 2020.

Figure 12b: Overview of engagement held either individually or collaboratively on climate change-related issues. Source: Aviva Investors

Year	1-on-1	Collaboration
2015	75	60
2016	55	21
2017	33	65
2018	74	17
2019	65	8
2020	118	53
2021	214	53

The increase is in part through the climate engagement escalation programme, as well as ongoing engagement with businesses we lend to (via the debt markets). We have a particular focus on in-depth engagement with companies strategically exposed to climate-related risks due to their significant exposure to transition risks. As highlighted in Figure 12b, we also engage with companies collaboratively (member of Climate Action 100+, Institutional Investors Group on Climate Change, Transition Pathway Initiative etc.)

In addition to our direct engagements via our engagement escalation programme, we are continuing to use our influence as an asset owner to engage with investee companies on climate-related matters. In Figure 12a, we have provided a snapshot of the voting on climate and environmental issues. Aviva Investors voted on 104 resolutions in 2021 related to climate and environmental matters. This is a 93% increase from 2020, as companies respond to reporting requirements such as the TCFD and recognise the importance of engaging with their shareholders on environmental topics. Aviva does not always vote in favour of a company's climate strategy, instead regularly pushing for more stringent decarbonisation measures. We are becoming increasingly vocal when a company's climate change strategy does not align with Aviva's decarbonisation trajectory and values. We continue to stay engaged with, and monitor, shareholder voting on the wider environmental agenda given our partnership with WWF.

Decarbonising our investment portfolio continued

Our role as an active shareholder

Aviva's ownership of companies through our equity investments allows us to raise concerns on climate action directly with the key decision makers setting company strategy, as well as vote on shareholder resolutions. This year we did exactly that with a major international bank, who we felt was slow to make meaningful plans to reduce their exposures and financing of climate destructive activities. We called for the bank to declare an ambitious strategy on climate change: develop a house view on its Paris alignment and transition pathways across each sector, reduce exposure to fossil fuels and build an internal capacity to manage climate risks and opportunities across its portfolio.

The bank responded with a market leading ambition – to be one of the first banks globally to achieve Net Zero emissions in all financing activities by 2050. Their strategy was approved at their May AGM, where the climate policy received 99.99% support.

Divesting where necessary:
We believe that the highest-emission fuels should not be part of a low carbon future, and our Exclusions Policy reflects this. By the end of 2022, we will have divested from 202 companies making more than 5% of their revenue from thermal coal, and 7 companies making more than 10% of their revenue from unconventional fossil fuel extraction unless, they have signed up to SBTs or the funding is for ring-fenced green project finance. This applies to all shareholder funds and policyholder funds where possible.

Where companies fail to have their SBT validated within 18 months of submission, we will divest the equities and bonds and put the companies on our Stoplist. Further, in line with the Powering Past Coal Alliance (PPCA) Finance Principles, we commit to avoiding exposure to equity and debt instruments of companies that plan to generate electricity from unabated coal beyond the PPCA timeframe.

Aviva's exposure to the 202 thermal coal extraction and power generation companies and 7 unconventional fossil fuel companies on our Stoplist is currently £2.5 billion. However we believe it is the right choice to make for our business and our shareholders and customers.

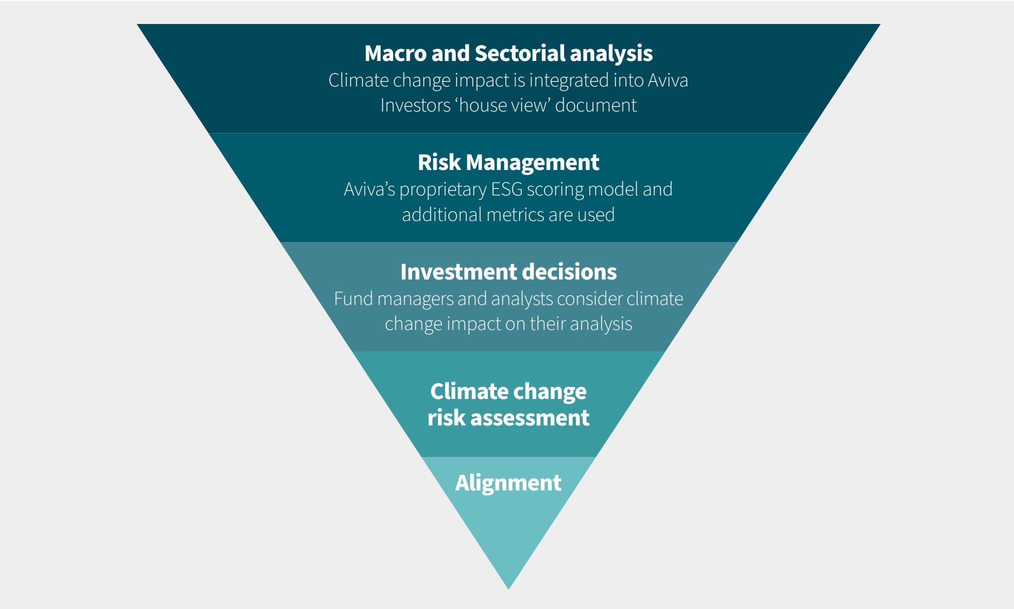
Additional links

> Aviva Investors' approach to responsible investment: Voting Policy

Tilting our Investments

At present, we embed physical and transition risk climate considerations in our investment selection and management processes, where possible, to tilt our portfolio towards leaders in emission reductions and avoid financing laggards.

Figure 13: Integrating climate-related risks and opportunities into investment considerations.
Source: Aviva Investors.



As part of our Climate Value-at-Risk scenario analysis, we assess the exposures of our assets and (insurance) liabilities to climate risks in different future scenarios. All of those scenarios present varied risks and opportunity profiles. We are able to manage and mitigate some of those risks, depending on the level of control we have in contractual arrangements.

However, some risks are inherent in a warming world and a transitioning economy which cannot be transferred and mitigated. In those situations, we make judgment calls about whether to remain invested given the risks, to preserve our client's capital and fulfil our fiduciary duties.

When integrating the management of climate-related risks and opportunities into our liquid asset portfolios, Aviva Investors considers several layers: macro and sectoral analysis; risk management; investment decisions; climate change risk assessment and alignment as set out in Figure 13.

- **Macro and Sectoral Analysis:** The House View[1] highlights the key trends that could affect our investment portfolio and has a formal consideration of the impacts of climate change on the macro-environment, whether this is from a policy, technology or scientific basis.
- **Risk Management:** Fund managers have access to a growing suite of tools and data to assess climate-related risks and opportunities. Examples include our proprietary ESG scoring models e.g. ESG 'Elements[2]', MSCI's ESG Ratings[3] and carbon intensity information. Aviva Investors has also developed a proprietary Climate Transition Risk (T-Risk) Model which assess the sub-industry risk exposure to both the physical and transition risks of climate change.
- **Investment Decisions:** Aviva has developed exclusion lists and engagement processes to assess transition risk exposure. With regards to climate in particular, our equity investment decisions now consider the universe of investment opportunities that our T-Risk Model puts out (reflecting fossil fuel screens and climate solution companies).
- **Climate Change Risk Assessment:** The T-Risk Model combines a top-down sub-industry perspective to create a climate risk exposure map for individual sub-industries; this is then combined with a company's climate risk management performance score, derived from the company's CDP rating, to determine if the transition risk management is commensurate to the risk exposure. In addition, we are exploring the use of other data sources for analysis (e.g. Scope 1, 2 and 3 data and implied temperature rise).
- **Alignment:** In 2021, Aviva's Net Zero Investment Execution unit was established to consider how to co-ordinate the alignment of the investment portfolios with a Net Zero pathway.

1 Aviva Investors House view: www.avivainvestors.com/en-gb/views/house-view/
2 For more detail on this model, please refer to the 2020 Climate-Related Disclosures
3 MSCI ESG Ratings helps investors identify ESG risks and opportunities within their portfolio. Companies are rated on a 'AAA' to 'CCC' scale according to their exposure to industry- specific ESG risks and their ability to manage those risks relative to peers.

Tilting our Investments continued

Our future priorities

We are currently in the process of enhancing our risk management processes and are looking at the feasibility of incorporating an internal carbon price into investment decisions. We recognise this is an important step to take to internalise the cost of carbon in our investment decisions, ensuring that we are investing in the best companies within sectors. We are not aware of other asset managers in the market currently using forward-looking carbon pricing to assess transition risk.

As part of our engagement strategy, we are doing our utmost to stay invested in companies who are transitioning away from high-emitting activities (sometimes referred to as brown revenue streams) and use our influence as they transition towards low-carbon activities (green revenue streams), to ensure that we are supporting and challenging those companies who are integral to the transition. With the announcement in October 2021 of the UK Green Finance Roadmap, covering the UK Green Taxonomy and International Sustainability Standards Board (ISSB), we are already devising a workplan to integrate this taxonomy and reporting requirements into our systems. We can then map and track the revenue and activities of our investments across different shades of green, to ensure our capital is directed to the low-carbon transition.

Financing the Transition

We will grasp the opportunities arising from the transition, which will include continuously seeking Net Zero transition opportunities across different forms of financing.

We have set goals for transition financing which represents one of the biggest contributions that the financial industry can bring towards a low carbon economy, including £2.5 billion in low-carbon and renewable energy infrastructure.

Aviva Investors Real Assets approach

Aviva Investors has £44 billion Real Assets under management (AUM) on a platform which comprises equity and debt investments in both real estate and infrastructure, with a concentration of assets in Europe and a growing interest in emerging markets.

In equity, the platform is focused on creating opportunities for clients through long lease, refurbished and development in real estate, and has a diversified portfolio of low carbon, renewable and social infrastructure projects including onshore wind, solar, and energy from waste.

In debt, the platform has a range of interests in hospitals, schools and utilities as well as financing trade and the development of new roads and rail in emerging markets.

In December 2020, Aviva Investors published our ‘Real Assets Net Zero Pathway’. This extends to assets under management across real estate, infrastructure and private debt, and is supported by five ambitious short-term investment goals to be delivered by 2025. The scope and boundary of this Net Zero pathway extends to direct investments, such as directly owned and managed equity assets, and financed emissions, which are loans and other debt instruments made to third parties.

The Net Zero target is focused on seizing the opportunities created by the climate transition and complements the Real Assets business plan launched in December 2020. The Real Assets platform has made progress towards delivery of the Net Zero target and supporting investment goals.

	Aviva Investors Real Assets 2025 Target (from a 2019 baseline)	2021 status update
1	Invest £2.5 billion in low-carbon and renewable energy infrastructure	£1.4 billion
2	Increase low-carbon and renewable energy generation capacity to 1.5 GW	1.1 GW
3	Deliver £1 billion of sustainable transition loans	£783 million
4	Create at least 50% of new pooled strategies with sustainable or impact labels until 2025	100%
5	Reduce real estate carbon intensity by 30% and energy intensity by 10%	37% (Carbon)[1] 19% (Energy)[1]

Low carbon and renewable energy infrastructure

Over the past two years the platform has invested £1.4 billion in low carbon and renewable energy infrastructure including solar, wind and energy centres. These investments cover solar photovoltaic (PV), offshore and onshore wind, energy centres, energy-from-waste, hydrogen generation, battery storage, low-carbon public transport, electric vehicle charging infrastructure, and energy efficient buildings (certified LEED Silver or BREEAM Very Good or above).

Our investments in renewable energy infrastructure take the platform's total energy generation capacity to 1.1 GW in the UK and Europe, ensuring we are on track to meet our 2025 goal of 1.5 GW. The scope of our target includes assets that are directly owned and managed, as well as financed activities where we act as a lender, and refinancing where our lending is contributing to a project that has already been delivered.

Empowering on-site clean energy

In July 2021, Aviva Investors funded a £3 million installation of photovoltaic panels at Next plc’s distribution centre Yorkshire site. The 2,400 kWp system will generate over 2.1 GWh of clean energy each year, accounting for approximately 34% of the unit’s needs and avoiding an estimated 447 tonnes of carbon dioxide (CO_2) annually.

By investing in this project, Aviva Investors have created on-site clean energy for Next and are actively reducing emissions generated on site, supporting both Aviva Investors’ decarbonisation pathway and Aviva plc’s decarbonisation goals in their Net Zero commitments. It also further enhances the environmental resilience of the asset and will support the decarbonisation of the UK’s power infrastructure through the production of clean energy.

Sustainability and Impact Labels

In 2021, we focused our product strategy on sustainable and impact products which allow our clients to finance the transition to a low-carbon economy, and to generate positive financial and non-financial outcomes. We look to grow our pipeline of sustainable and impact strategies, engaging with clients to design solutions that meet their needs.

In 2021 we developed the Climate Transition Real Assets Fund. The Fund is one of the first of its kind in the industry to offer investors direct investment in nature-based solutions alongside real estate and infrastructure. It will aim to deliver net annual returns over rolling five-year periods, whilst targeting Net Zero by 2040 or sooner.

Closing the emissions data gap

The Real Assets platform is committed to transparency and submits real estate and infrastructure equity funds’ data to the Global Real Estate Sustainability Benchmark (GRESB) annually. Aviva was a founding member of GRESB and continues to be an active participant and advisor to the benchmark. We will continue to disclose our UK real estate assets to the annual Real Estate Environmental Benchmark (REEB) process and measure the performance of our assets against this on a quarterly basis to guide our refurbishment and divestment decisions.

Additional links
> Aviva Investors’ Real Assets Net Zero Transition Pathway

1 The targeted reduction in real estate carbon intensity and energy intensity was partially achieved through lower occupancy rates in buildings.

Aviva Investors Real Assets approach continued

Delivering £1 billion in climate transition-focused loans

A sustainable lending strategy was launched in 2020, which has already delivered £783 million of climate transition focused debt investments placed in utilities and real estate sectors.

Reducing real estate carbon intensity

The impact of our direct investments has reduced substantially, with carbon intensity at 37% and energy intensity at 19% compared to a 2019 baseline. As assets return to full occupancy in 2022, we expect energy use and consequently carbon emissions to increase again to around 5% below our 2019 baseline. Across the asset lifecycle, we continue implement measures to reduce our exposure to transition risk and improve the energy efficiency of the real assets in our portfolio.

To improve the energy efficiency of our properties, we have and will continue to seize decarbonisation opportunities in the refurbishment cycle.

Climate transition risk due diligence has been introduced and Net Zero aligned planning through the acquisition phase. For both debt and equity real investments, exposure to legislative changes concerning Minimum Energy Efficiency Standards are assessed quarterly, where the volume of assets with non-compliant Energy Performance Certificate ratings reported internally.

Helping reduce the carbon footprint of UK health infrastructure

In October 2021, Aviva UK Life agreed a £200 million investment facility with Primary Health Properties (PHP), attaching KPI's which will reduce PHP's environmental footprint to the agreement. The arrangement is one of many sustainable loans made by Aviva Investors in 2021 featuring a reduction in the borrowing rate over time, conditional on meeting a prescribed set of sustainability targets over the 15-year facility. The progress towards goals will be reviewed annually over the full lifetime of the loan, to ensure PHP are on track to meet their long-term target.

The facility is a material contribution to the Real Asset business' commitment to provide £1 billion of climate transition real estate debt by 2025. Additionally, it reduces the carbon footprint of our portfolios and allows PHP to be rewarded for implementing their Responsible Business plan.

2021 Occupier engagement programme

In 2021 we undertook an occupier engagement programme. The programme is designed to create relationships with tenants in the buildings owned by our clients. Through engagement we hope to understand how the building is performing, what possible steps could be practically implemented to decarbonise the asset, and how we can work with the occupier to deliver this.

We asked occupiers about their preferences for on-site interventions like electric vehicle charging and solar panel installation. With the first round of engagements now complete, our asset management team will be supporting occupiers to implement the agreed measures in 2022.

Physical exposure due diligence

In addition to responding to the risks and opportunities related to the energy transition, we also need to assess that our assets are not heavily exposed to flood risk and other physical perils which damage the financial viability of our investments.

At the point of origination, our teams perform technical analysis and due diligence, using the MSCI Climate Value-at-Risk platform to assess the level of risk to an asset or location as part of the underwriting process for all transactions or use technical advisors to undertake surveys.

Where a buildings are shown to have high levels of climate risk, the transaction undergoes additional due diligence, with the outcome informing the investment decision.

In addition to assessing climate risk in each transaction, the Real Assets team work closely with MSCI, undertaking forward-looking assessments of climate risks for each portfolio on a quarterly basis, which covers the flood modelling and the chronic climate-related risks such as sea-level rise and heatwaves. In 2021, this modelling was applied to all managed real estate.

Sovereigns

We are a long-term investor in sovereign debt across our fixed income portfolio and are particularly focused on improving the sustainability outcomes linked with sovereign debt.

We use our 'Monitoring of Sovereign Risk' metric using external data points to monitor the exposure of our sovereign holdings to climate change. Whilst we are not presently materially exposed to countries which are partially vulnerable to material physical climate risks, we need to be alert to changing circumstances.

Aviva's sovereign strategy is underpinned by our ambition for all countries to commit and meet emission reduction targets, equipping companies, Finance Ministries, Central Banks and companies with the tools to decarbonise the global economy.

To enable this, we use our position and influence to drive the global decarbonisation movement by:

- Supporting emerging economies to adapt to climate change by building resilience to climate perils and support investments that enable a faster transition to a low carbon economy, through the provision of sovereign bonds.
- Devising common methodologies to improve data quality to aid transparency and comparability between jurisdictions.

An Equitable Global Transition

At Aviva, we believe it is important to drive an equitable transition, leveraging our influence as a sovereign investor to close the gap between emerging and developing nations.

In 2021, we engaged with 31 countries to urge them to address climate-related risks, including through joining global coalitions of best practice and collaboration, such as Ghana.

Following the success of our sovereign engagement strategy to date, in February 2022, we wrote to finance ministers and central banks of 37 countries highlighting our Climate Change and Biodiversity investment ambitions and asking for their active participation.

In relation to climate change, we have asked **finance ministers** to:

- Raise 2030 Nationally Determined Contribution targets this year, to align with the Paris Agreement
- Strengthen implementation policies and actions to deliver 2030 emission reduction targets
- Build physical resilience to climate change

We have asked **sovereign central banks** to:

- Join the Network of Central Banks and Supervisors for Greening the Financial system (NGFS).
- Disclose their institutional climate risks and integrate sustainability factors into own-portfolio management and actively consider ensuring monetary policy operations support the transition to a low-carbon economy.
- Support the adoption of International Financial Reporting Standards (IFRS) corporate climate disclosures.

Green Gilts

In September 2021 the UK Government launched their first issuance of green gilts. Our UK Life shareholder funds wrote £156 million of the two tranches of these green gilts with General Insurance shareholder funds writing a further £21 million, with £50 million invested from our with-profit funds. These gilts count towards UK Life's green asset target of £1.2 billion per annum.

Advocating with Alliances

In terms of joint engagement with Governments, Aviva currently co-leads the public policy advocacy workstreams of the NZAOA and GFANZ to develop methodologies and reporting requirements.

NZAOA:
We have defined our sovereign debt strategy in line with our Net Zero ambition, and actively work with the NZAOA to ensure consistency in approaches to sovereign debt across our industry.

The NZAOA has highlighted the challenge with data quality for sovereign debt. However, we have seen positive engagement from some nations, without reliance on high quality data, demonstrating that positive outcomes can be achieved through direct engagement, while we push for data quality to be continually improved.

The NZAOA's sovereign bond report is out for consultation, and we intend to mirror their recommendations in our future strategy.

GFANZ:
A strategic opportunity to promote Net Zero financial policy frameworks arises when countries are issuing new debt or refinancing existing debt. At this point, GFANZ members could use the conversations with the Debt Management Offices and their representatives in either central banks or finance ministries to promote Net Zero financial system policy development. To facilitate this, as Aviva, we will offer to help GFANZ develop a systematic approach to sovereign engagement on sustainability issues, building on the policy calls outlined above.

Providing products and services for our customers and tools to interrogate their portfolio

Empowering our customers by improving the transparency of investments is something we are passionate about. We seek to do this with products, tools and service offerings.

Investing in the low carbon transition

We have developed the **Climate Transition range** to help investors to support the transition to a low carbon economy across all core asset classes.

- Climate Transition European Equity Fund
- Climate Transition Global Equity Fund

The European and Global equities funds will take a long-term, high- conviction investment approach, targeting global companies that derive material revenues from goods and services addressing climate change mitigation and adaptation as well as investing in companies aligning their business models to a low carbon economy while excluding those companies with material exposure to fossil fuels.

In 2021, Aviva Investors launched a further two climate funds:

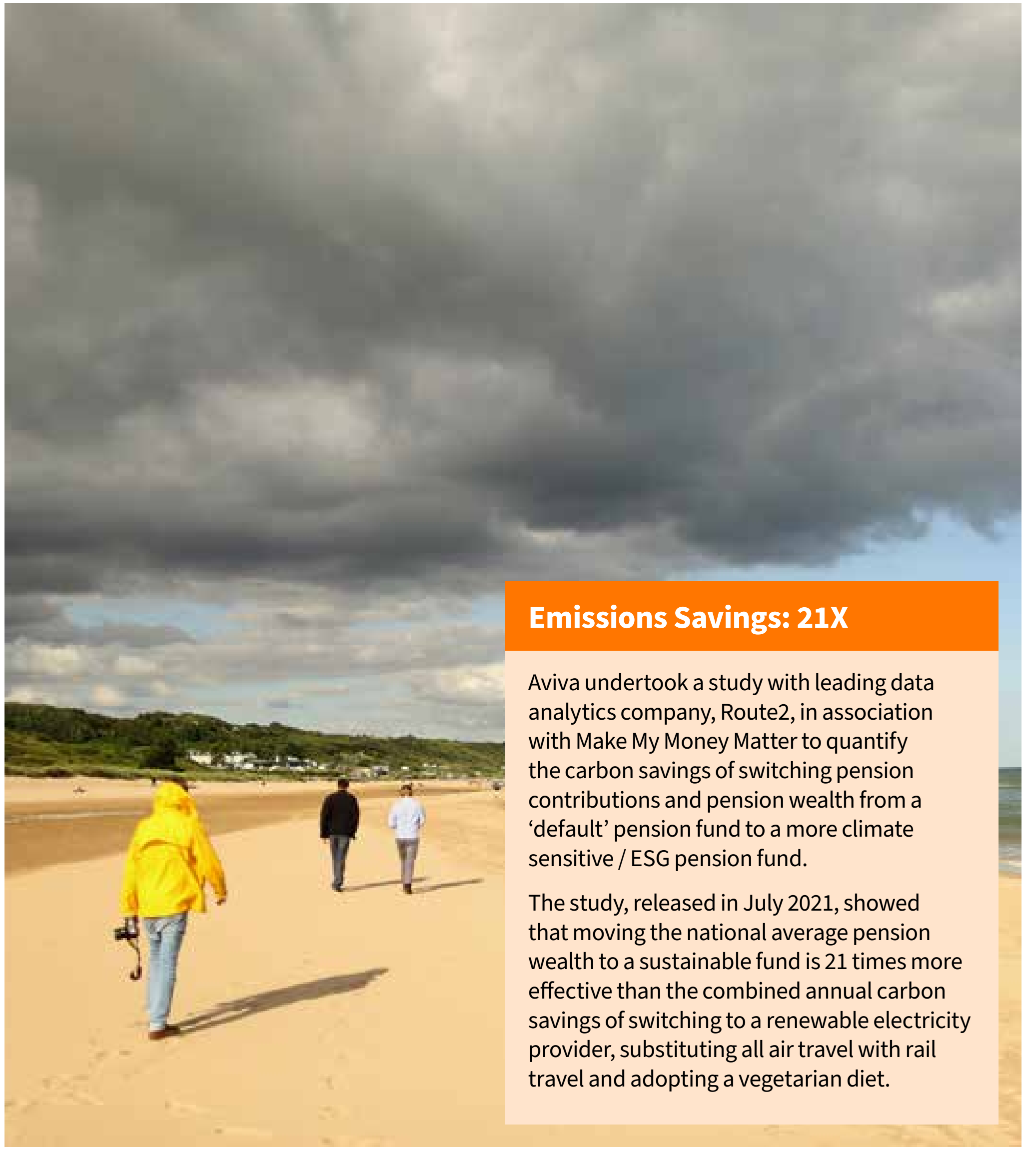
- Climate Transition Global Credit Fund
- Climate Transition Real Assets Fund

The Climate Transition Real Assets Fund is one of the first of its kind in the industry to offer investors direct investment in nature-based solutions alongside real estate and infrastructure. It will aim to deliver net annual returns over rolling five-year periods, whilst targeting Net Zero by 2040 or sooner. Carbon removals in the fund will be generated by afforestation (the planting of new trees), and not through the purchase of carbon offsets. Direct investment of this nature helps to remove emissions from the atmosphere and benefits nature, whilst generating a return for investors. The Fund will also seek to deliver social impact in infrastructure and real estate investments, through providing job opportunities and training, and procuring goods and services locally.

In 2018, our online investment subsidiary **Wealthify** launched an ethical investment option, focused on five ethical plans. Interest from customers has grown steadily, with 28% of new accounts in 2021 selecting the ethical option. This now accounts for 26% of total assets under management for Wealthify and growing. As Wealthify continues its mission to make investing more accessible, 2021 also saw the proportion of female investors increase further in both ethical plans (43% up from 39% in 2020) and original plans (33% up from 28% in 2020).

ESG Retail Investments

In March, we opened up the Stewardship Fund range to ISA customers on our adviser and direct platforms. The Stewardship Funds aim to support companies that make a positive contribution to society, through the product and services they serve and the way they provide them. The Funds avoid companies and sectors whose



Emissions Savings: 21X

Aviva undertook a study with leading data analytics company, Route2, in association with Make My Money Matter to quantify the carbon savings of switching pension contributions and pension wealth from a 'default' pension fund to a more climate sensitive / ESG pension fund.

The study, released in July 2021, showed that moving the national average pension wealth to a sustainable fund is 21 times more effective than the combined annual carbon savings of switching to a renewable electricity provider, substituting all air travel with rail travel and adopting a vegetarian diet.

Providing products and services for our customers and tools to interrogate their portfolio continued

products or services cause unmitigated social and environmental harm.

In November 2021, we launched a market-leading ESG Profiler tool on our adviser platform – this supports financial advisers reviewing customers' investments from an ESG perspective. The tool uses data sourced from MSCI and other ESG data providers to measure and review the holdings, where data is available, against six ESG preferences, including climate change.

There are plans to roll-out similar capability for retail direct customers in 2022.

ESG Profiler Success

Aviva Ireland have held ESG workshops showcasing the ESG Profiler tool to over 800 financial advisors (of the 3,000 we work with) and we have had positive engagement across all the jurisdictions we operate in. Upskilling our teams to link our customers' personal priorities and their investments.

Workplace Pensions

It is not well understood that switching an individual's pension contribution and pension wealth to an alternative fund or pension provider can deliver significant carbon footprint reduction.

In 2019, Aviva UK launched the 'Stewardship lifestyle strategy' - a workplace pension default investment strategy that incorporates ethical and ESG considerations. This option was extended in 2020 to include additional funds and means scheme members can be reassured that ethical and ESG considerations are integrated all the way through to their selected retirement date.

The funds exclude companies that do not meet certain ethical standards or that harm society or the environment.

In October 2020, we announced a Net Zero target for our UK auto-enrolment default pension funds.

In April 2021, we introduced an allocation to an ESG-focused strategy within the workplace My Future default investment solution. In addition to providing exposure to companies within the FTSE Developed Index that are well-positioned to maximise the opportunities and minimise the potential risks associated with certain ESG themes relative to other companies within the index, the strategy is designed to achieve a 50% lower exposure to carbon emission intensity and potential emissions relative to the FTSE Developed Index.

We are using ongoing contributions to build up a 50% allocation to this strategy within the equity component held in the My Future default investment solution. Aviva Investors has worked with the Aviva Staff Pension Scheme Trustee, one of its biggest customers, to introduce a new default investment strategy. The Aviva Staff Pension Scheme Board revised its Statement of Investment Principles in 2019 to take account of climate-related risks and opportunities as well as wider ESG issues.

The design of the new default has strong ESG content and is consistent with the Trustee's ambition for members' savings to be 'Net Zero carbon emissions' by 2040.

We have extended our pilot with Tumelo for a further year to bring visibility and voting rights to members of our Workplace pilot schemes. This customer engagement tool has been offered across our MyMoney and Unisure books to schemes of varying size, with one scheme of 18,000 members. We will continue to monitor both initial interest and ongoing engagement to determine our longer term proposition.

Aligning to Net Zero Pensions

As part of the Aviva Sustainability Ambition, we set out a goal to achieve 20% of new Savings & Retirement business being invested into sustainable impact or Net Zero aligned funds by the end of 2022. We are on track to meet our 2022 target, the figure for 2021 stood at 22%.

> “Aviva has targeted Net Zero carbon by 2040. We want to help our customers too, in their ambitions to reduce carbon by harnessing the power of their investments. Rigorous, open and transparent ESG assessment is vital to this.”

Mike Hogg
Head of Platform Proposition, Aviva

Additional links
> Understanding the power of your pension

Insuring a Net Zero Future

In the context of accelerating the transition to Net Zero for the whole economy, insurers play a unique role thanks to the nature of insurance contracts as enablers of the use of assets.

With our customers, we will continue to integrate climate change consideration at all stages ofthinking about risk – understanding, prevention, reduction and protection through insurance andreinsurance, so that our solutions continue to be accessible and affordable.

Our strategy to transition the life underwriting investments of our customers funds are addressed in the Decarbonising our Portfolio Investments section. See the Climate Scenario Analysis included in the Appendix, for how we integrate life insurance climate risks and opportunities into our Climate VaR modelling.

Calculating Net Zero Insurance

As Net Zero underwriting is a very new topic, we are developing a new methodology in conjunction with NZIA and Partnership for Carbon Accounting Financials (PCAF).

To help drive this forward we have been working with the Boston Consulting Group to propose a possible underwriting attribution methodology which works across both Personal and Commercial Insurance books of business, and at a client and asset level.

One methodological proposal we have examined is the use of an underwriting attribution factor where the technical premium (the risk cost element of the premium - not considering profit/expense loading) is divided by the Annualised Enterprise Value (or asset value). This calculation is based on the assumption that premiums enable emissions for one year (the standard term of the policy), therefore the asset value needs to be annualised.

Personal Lines

As insurers, we are able to influence customer behaviour through the coverage of products and services we provide.

We continue to develop our strategy around the response to climate change. In our claims management business, our climate response strategy focusses on:

- Developing climate-conscious products and services to incentivise climate-positive behaviour from customers.
- Reducing the associated emissions from claims management to become Net Zero by 2030.
- Supporting adaption and resilience measures for those customers at risk of extreme weather impacts.

Developing climate-conscious products and services

To support the transition to a low carbon economy, we are developing products and services which reward customers for environmentally responsible actions across our global markets. We now offer a range of 33 different green and low carbon insurance propositions across our markets.

For our motor insurance customers:
In Canada, we offer bespoke electric vehicle (EV) insurance and, more widely, our partnership with Lyft makes it easier for customers to choose car share journeys.

In the UK, we have responded to the increased demand for EVs by expanding our personal lines motor insurance cover for roadside breakdown, electrical surges and EV accessories.

We forecast that we will have over 1 million EV customers by 2030. Our in-house repair centres, Solus, have already invested to ensure that 50% of their technicians are qualified to repair electric vehicles all in sites across the UK.

For our domestic property insurance customers:
In the UK, solar panels on residential roofs, air/ground source heat pumps and battery storage attract no additional premium.

In Canada, we offer endorsements to cover domestic solar panels and wind turbines.

Reducing the associated emissions from claims management

Management of our customer claims is one of our core business processes. The associated direct and indirect emissions, produced when we manage claims, are materially linked to the activities our suppliers need to perform to assess damages, repair them or provide replacements.

From a carbon footprint standpoint, our claims management process is considered as part of our supply chain. For this reason, the approach we will apply to our claims management process mirrors the one we have across our supply chain. In this context, we will submit claims management and supply chain targets to SBTi as a single target for formal approval.

For vehicle repairs, we use recycled parts where possible. This is especially true for older vehicles, or vehicles where parts may no longer be available and would otherwise have to be declared a total loss. Working with our customers, we will consider the use of non-safety-critical recycled parts in specific vehicle repairs. Safety-critical parts are always replaced with new.

When paying out claims, we have the opportunity and responsibility to reduce our environmental impact through repair and restoration where possible.

In the UK, our improved drying process after flood claims reduces the associated carbon emissions. We continuously review our claims procedures to make sure the actions we take have a lower impact on the environment, for example provision of energy efficient replacement goods or improving the efficiency of our processes.

Adaption and resilience

As the frequency and intensity of extreme weather increases, we have, where possible, been working to reduce the impact on our customers' lives, livelihoods and build resilience to climate change.

In the UK and Canada, where appropriate, we work with customers to help them become more resilient e.g. offering coverage to install risk mitigation devices after a claim, and to 'build back better'.

In Canada, we were the first insurer to announce comprehensive water coverage on property policies. We sponsored a new code of practice for flood resilience, released in January 2020. The code covers all aspects of prevention and resilience to make properties more resilient to flood. We have also been working with Business in the Community supporting an online tool for small business resilience – 'Would you be ready?'.

We protect our customers from extreme weather through our insurance products and our low-carbon transition initiatives. However, we recognise that under a 1.5°C transition pathway we will experience changing weather trends compared to what is experienced today. As such, we want to be proactive in supporting adaptation initiatives to improve the resilience of our communities to extreme weather risks and ensure we can continue to provide affordable insurance.

In July 2021, we launched our first Building Future Communities report. In the report, we call for urgent action to ensure that UK homes and businesses are protected from flood and extreme weather events caused by climate change. The report calls for seven key steps that are urgently required by government, local authorities, developers, industry bodies and business to address the threats climate change poses to UK property, livelihoods and communities. The seven steps are:

	Our call for change	Our actions to drive change
1	**Greater use of innovative nature-based solutions that are adapted to the UK landscape** – innovative, site-specific nature-based solutions that help address multiple climate risk impacts.	Through Aviva's partnership with WWF, the River Soar catchment project (Leicestershire) has been launched to explore nature-based solutions that will increase the UK's resilience to a range of climate risks, and provide a best practice model that addresses the 'triple challenge' of feeding a growing population, combatting the climate crisis and reversing nature loss.
2	**Ensure small and medium-sized enterprises (SMEs) are sufficiently protected against extreme weather** – new commercial properties built today to be fit for purpose, and for the government to better support SMEs in preparing for climate events.	Aviva is calling for everyone involved in building and protecting properties to work together to ensure that every new commercial property built today is adequately protected from the changing impacts of extreme weather. Aviva has been working with Enterprise Nation on our Plan it with Purpose initiative to encourage SMEs to protect themselves from extreme weather. We have shared this with the Department of Business, Energy & Industrial Strategy (BEIS).
3	**Strengthen planning regulation to protect UK properties** – strengthen planning and building regulation to prevent new properties from being built on floodplains unless protected, and to ensure that all existing and future properties have adequate resilience and safety measures in place.	To prevent catastrophic damage to people, homes and businesses, Aviva has discussed with the Department for Levelling Up, Housing and Communities to strengthen planning policies to ensure that developers can be held to account when new properties flood. Insurers will be signposting residential customers most at risk to specialist insurers who can provide protection. Following a flood, Aviva provides cost neutral resilient repairs and actively encourages applications for Government resilience grants when available. Department for Environment, Food & Rural Affairs (DEFRA) has agreed that insurers will be able to offer additional resilient measures (called Build Back Better) to those who have been flooded up to a limit of £10,000. Aviva will offer this from summer 2022 to our worst affected customers.
4	**More collaboration and research across all stages of the building process to combine sustainability with safety** – from design to build, ensure that all current and future materials have both sustainability and safety in mind.	Aviva is calling for UK builders, developers, architects, planners, government, the insurance industry and the public to come together to ensure that we build responsibly for the UK landscape now and in the future, as well as working with industry to improve the levels of training and skills. This should build on the work of the industry-led Property Flood Resilience Code of Practice, sponsored by Aviva, launched in 2020.
5	**Improve access to home insurance and narrow the insurance gap to protect those most at risk** – increased research into the affordability and availability of insurance, and targeted measures to close the insurance gap – particularly among renters – and protect those most threatened by climate change.	Aviva is calling for the government to seek greater understanding of: a) which people and communities are most at risk of the impacts of climate change, b) who are least likely to have resilience measures in place, including insurance coverage, and c) how best to improve their levels of protection. We were part of a working group set up by the Financial Inclusion Policy Forum to set out recommendations that encourage innovation and collaboration on schemes that provide greater access to contents insurance for renters e.g. through Credit Unions. We also believe all social housing tenants should have access to adequate insurance cover. These measures should be considered as part of the Government's Renters Reforms White Paper expected in 2022.
6	**Encourage and incentivise property resilience to aid recovery** – greater understanding, insight and collaboration on effective campaigns and incentives that drive preventative action against extreme weather impacts. These should include government grants to help businesses and households increase their climate resilience be more after extreme weather events.	We sponsored a new code of practice for property flood resilience, released in January 2020. We have also prepared a commercial flood guide for businesses. Our reach only goes so far, so we are encouraging BEIS to reinstate a scheme similar to Green Homes Grants, to help bring businesses and households to a greener and more resilient state after extreme weather events, particularly in high-risk areas.
7	**Collaboration across recovery organisations to strengthen crisis response and resilience at community level** – increased collaboration and support for communities through a more streamlined, quicker and joined-up crisis response to climate events, using insights from COVID-19 and existing community-level partnerships.	To address this problem, the Aviva Foundation has partnered with the University of Hull's Flood Innovation Centre to 'map the gaps' in post-flood recovery processes. The partnership focuses on the immediate aftermath of flood events in the Humber: one of the UK's most flood-vulnerable regions. Together, we are seeking to encourage SMEs to ensure they prepare for, and protect themselves against, flooding and other extreme weather events and identify areas where better knowledge and communication between organisations could help communities get back on their feet more quickly after a crisis and share this with our customers.

Additional links
> Building Future Communities Report
> Property Flood Resilience Code of Practice

Insuring a Net Zero future continued

Commercial Insurance

Ceasing to insure the most harmful assets

In March, we stated that by the end of 2021, we would stop underwriting insurance for companies making more than 5% of their revenue from thermal coal or unconventional fossil fuels (oil sands, shale oil and gas, deepwater oil and arctic drilling), unless they have signed up to the SBTi. We have achieved that commitment.

We will monitor the progress of these companies' commitment to reduce their emissions, to ensure they are delivering on their emissions underwriting targets.

In 2021, to strengthen our Group Underwriting Boundaries, and to align to our goal of having a Net Zero insurance portfolio by 2040, we further stipulated the activities that would fall within our new climate change-related underwriting strategy.

Aviva will no longer offer insurance coverage to firms directly involved in fossil fuels, which includes:

- The construction of any coal-fired power stations.
- Power generation risks that generate power from coal.
- Any new fossil fuel mining or extraction projects.
- Companies where more than 5% of their revenues are directly generated from extracting fossil fuels using conventional methods.
- Offshore oil and gas rigs and platforms.

We recognise that by exiting the market completely, we would create a void for less ethical insurers to provide coverage for these businesses, and we would not be able to influence their activities. Therefore, to support businesses transitioning away from coal and unconventional fossil fuels, we will continue to provide:

- Employee benefit insurances.
- Management Liability for these businesses.
- Construction/property coverages for their standalone Renewable Energy assets.
- Underwriting for companies signed up to 1.5°C Science Based Targets.

We will continue to provide risk management support and guidance to assist our customers as they seek to reduce emissions and evolve their business practices to minimise the impact on the environment.

> "Insurers must not get in the way of customers' Net Zero transitions. Insurance needs to get behind and be the vanguard of enabling that change, not blocking anything or providing barriers to the transition."
>
> **Owen Morris**
> **MD Personal Lines Insurance**

Insuring a Net Zero future continued

Transition to Renewables

The insurance landscape will undergo significant changes in the next 30 years as the transition to a lower carbon economy unfolds.

Our transition away from fossil fuels is dependent on low carbon innovations and we have a role to play facilitating new technology through our insurance offerings. Renewable energy presents complex project risks through solar and wind infrastructure, leading us to expand the technical expertise in our team to ensure we are providing a risk-engineered approach to our product offering.

As an example of low carbon innovations, there has been rapid growth in Battery Energy Storage Systems (BESS) infrastructure to support required National Grid resilience as a result of the intermittent nature of wind and solar in the UK . Such investments require insurance and bring a range of risks. By taking a risk management led approach to these risks we have become market leaders in underwriting BESS in the UK.

Aviva is targeting a position as a 'top 3' renewable energy insurer in the London Market by the end of 2022.

As we look to the future opportunities for expanding our renewable insurance products, we are exploring insurance solutions to support the innovation of hydrogen and carbon capture infrastructure.

Re-energising underwriting

One of the biggest challenges in the fight against climate change is reducing society's reliance on fossil fuels. Three years ago, we pivoted away from underwriting £13.5 million gross written premiums (GWP) of fossil fuel power generation assets through the specialist London Market, to c.£1 million in 2021 only focusing on companies that have robust plans to transition away from fossil fuels to renewables. Over the same period, we have increased our underwriting of renewable energy projects to more than 150% of the size that the fossil fuel power generation book was, when we exited the market in 2019.

To achieve this, has required a cultural transformation across the underwriting business, with appetite decisions not purely made on financial returns, but also considering the climate impact of those strategic decisions. This change in policy has led to some challenging conversations such as whether it's appropriate to underwrite carbon capture, utilisation and storage infrastructure attached to a coal plant. Ultimately, providing any insurance coverage which prolongs the life of coal is inconsistent with Aviva's values and therefore in this case the opportunity was not pursued.

We have significantly grown our renewable energy account and now support insurances of 75GW of installed capacity across six continents. This exceeds the entire renewable capacity of the UK.

Decarbonising our operations and supply chain

We think it is important that Aviva, as a business, leads by example in reducing the environmental impact of its operations and supply chain.

Operations

In our operations we do this in many ways, including through energy efficiency via clever use of technology and digital communications, using renewable energy sources and minimising the carbon intensity of our car fleet. Reducing our impact on the planet is not new for us, we've been doing it for over twenty years, and in 2006 we became the first major insurer to be carbon neutral. We plan to continue leading on these fronts in the years to come too, as we increase our climate-positive impacts. We aim to have Net Zero carbon operations by 2030 and are committed to using 100% renewable electricity by 2025 (aligned to the RE100 commitment). We also have a strategy in motion to work with our partners to reach Net Zero carbon in our supply chain by 2030, supported with the adoption of the Science Based Targets. Figure 14 of Aviva's Scope 1 and 2 emissions trajectory is for illustrative purposes only.

Renewable energy and emission reductions

We have already achieved our long-term energy emissions reduction target of 70% by 2030, set in 2010, by reducing our emissions by 81%. We are now aiming for our Group-wide operations to be Net Zero by 2030. Currently, 81% of electricity used by our global operations is from renewable resources, a 19% increase from 2020. We are committed to using 100% renewable electricity by 2025 (aligned to the RE100 commitment) and have made substantial progress in the year to increase our renewable energy capacity whilst decreasing our overall energy needs.

Clean energy

We installed rooftop solar PV at our new Glasgow site. This has become the main energy source for the site, and will produce an estimated 28,866 kWh of energy per annum, avoiding 6.7 tonnes of carbon dioxide annually. This is the first of our tenanted sites where we have undertaken a renewables project and are exploring further opportunities across our tenanted offices.

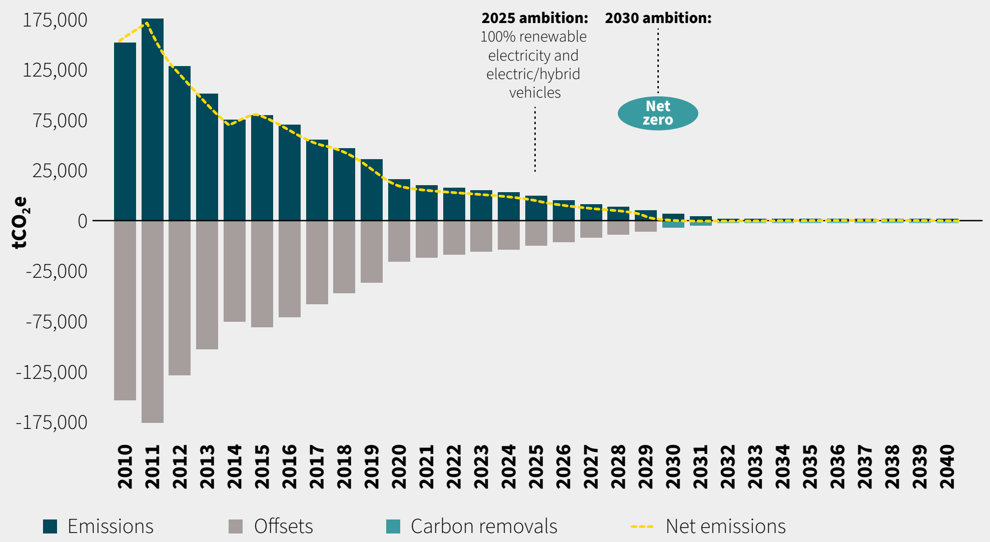
In January 2022, the solar panels on our Norwich Surrey Street office were switched on. This, along with our solar ports, panels and EV charging points, means we now have installed renewable energy infrastructure across four sites in the UK (following the portfolio review this year).

Following the success of this work in the UK, we are expanding our programme in Ireland and Canada, to ensure we are on track for our 2025 target.

Data-driven abatement

As a leader in operational decarbonisation, we have implemented numerous innovative mechanisms to reduce emissions. We are currently working to further identify and abate the emissions across our estate that are more challenging to eliminate. In 2021, we rolled out our Smart Building Optimisation Programme across ten of our offices, implementing data capture technology linked to the building management controls. This enabled us to understand where efficiencies and reductions can be made.

Figure 14: Aviva's Scope 1 and 2 emissions (operations). Source: Aviva



Emissions reduction forecasts are for illustrative purposes only. Pathways are based on a reduction of 8% per year 2020-2030. This goes beyond SBTi's AC 1.5 degree pathway (>4.2% per year, which would reach next zero by 2040). Exact targets and milestones will be determined as part of SBT commitment.

This data has enabled us to reduce power demands across all buildings, resulting in 12%[1] lower energy usage – saving us costs and reducing our impact on the environment. The success of the initiative in the UK has led to us rolling out the technology in Ireland in 2021 and Canada in January 2022, with the payback period of under a year expected to be realised in all regions.

Buildings blocks

This year, we put our Broadlands office in Norwich up for sale as part of a review of estate requirements across the portfolio to reduce office space by 40%, following our movement to flexible working arrangements. When we purchased the premises in 2013, the property had a G grade EPC rating. We commissioned a project internally to improve the energy efficiency of the building by carport rooftops.

1 https://carbon.ci/case-studies/aviva-plc/

Decarbonising our operations and supply chain continued

As a result, the premises achieved an A+ grade EPC rating in 2021 and therefore classified as a Net Zero carbon building. We are proud to have created a low carbon legacy in these properties, and to have shown other companies how energy efficiency and renewable energies in the built environment are a vital component to enduring climate solutions.

Car fleet

We have committed to moving our global vehicle fleet consisting of 931 vehicles to electric/hybrid by 2025 via EV100.

In the UK, we have 74 electric vehicle charging points at seven office locations and moved 58% of our car fleet to EVs. For the Group-wide car fleet, EVs currently make up 39% of the total.

Improving offsetting transparency

Whilst we are ambitious in our renewable energy programme, there are still emissions across our value chain which we are currently unable to abate. Aviva has been carbon neutral in our business operations since 2006, through the purchase and retirement of carbon offsets from the voluntary carbon market.

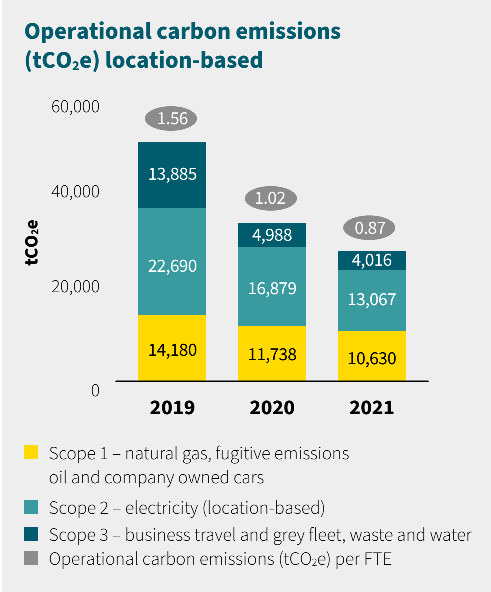
With more companies considering how they treat their residual carbon emissions from their operations, the focus on offsetting emissions and the type of offsets employed has increased dramatically. We are continuing to maintain the carbon neutrality of our operations through use of avoidance/reduction credits (representing the carbon dioxide equivalent that is prevented from being emitted into the atmosphere) through to 2030.

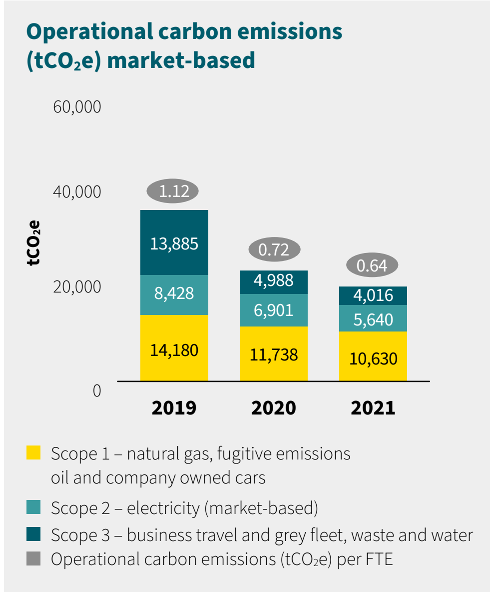
At that stage we will switch to using removal credits (representing the carbon removed from the atmosphere as the result of a carbon removal project). To contain costs and ensure the continued robustness of our operational carbon neutrality status, we worked with carbon development partners to focus on the development of a Gold Standard cookstove project in the Bihar region of India. This project will deliver enough carbon avoidance credits to ensure our operations remain carbon neutral through to 2030.

Accounting for homeworking

In 2021, we expanded our operational carbon emissions methodology to calculate the emissions produced per employee, which includes the emissions from homeworking to reflect our hybrid operating model. As this methodology is still nascent and is based on a number of assumptions we have not included these emissions in our operational carbon footprint table. However, we estimate this equates to 3,051 tCO_2e for our core businesses, net of the Renewable Electricity Certificates (RECs) we have purchased. We believe these emissions to be Aviva's responsibility and have, therefore, purchased carbon avoidance offsets to account for them. In our Annual Report and Accounts, we have included an expanded table featuring our energy use and carbon emissions data to reflect the requirements of the UK Streamlined Energy and Carbon Reporting (SECR) framework.

Figure 15: Absolute operational carbon emissions tCO_2e. Source: Aviva.





Reducing our environmental footprint

Our UK business met our zero landfill target in 2015. Between 2019 and 2020 our workplaces were free of single-use plastic containers. However, due to COVID-19 we have had to reintroduce a limited amount for health and safety reasons. It remains a short-term challenge that we continue to address, along with other considerations in light of COVID-19, but we are looking for solutions to eliminate single-use plastic once again in 2022.

Additional links
> Social-purpose

Decarbonising our operations and supply chain continued

Operational Supply Chain

Following our bold commitment in March 2021 to become a Net Zero company by 2040 and have a Net Zero supply chain by 2030, we have mobilised a Procurement workstream in Aviva's Operations Net Zero Programme and set about ensuring that our purchased goods and services (Scope 3 Category 1) are aligned to the low carbon economy transition.

We are increasingly looking to work with organisations that have a shared ambition to reduce our environmental impact globally, and particularly those that have enshrined this commitment through external benchmarks such as Science Based Targets. Our improvement activities focus on three areas to deliver our decarbonisation strategy: People, Partners and Processes. The table sets out major achievements in these areas from this year and our priorities for next year.

	2021 Achievements	Priorities for 2022
People	Building awareness – engaging our teams regularly to increase their understanding of the Group-wide commitments impacting their roles and how we will be changing our ways of working. We have established channels for sharing the latest updates and also in collaborating on our own personal ESG changes and journeys.	We will be scheduling formal training on emerging best practice in sustainable sourcing, to augment regular learning sessions with internal and external ESG experts, as well as wide networking with peers to continue to grow our knowledge and capability. We have also begun building a knowledge library of useful resources for our commodity category managers to continually upskill in this key area.
Partners	We ran an ESG questionnaire with a range of functions at our top 40 emitting suppliers to establish our current supply chain ESG position and grow our understanding of supply chain data challenges. We have been proactively engaging our top 80% of suppliers (by spend) to understand their plans and strategies on ESG and collaborating with a specific few who have the greatest environmental impact. We have developed a new ESG schedule which will now apply to all new contracts on our standard terms. We are also compliant with an Aviva-wide organisation 'Stoplist' which sets out organisations, sectors and projects we will not invest in, underwrite, or engage as a supplier due to their ESG credentials.	We will review our key existing supplier contracts to ensure they have sufficiently strong ESG commitments that move towards our 2030 target. We plan to start excluding new suppliers based on their ESG credentials by the end of 2022. We will be running a conference later in 2022 to collaborate with and recognise our stand-out suppliers on their ESG performance.
Processes	We have recently become a customer of Ecovadis, the leading ESG supplier ratings provider, to enhance our understanding of our supplier sustainability profile. We have already updated our supplier landing pages and RFP headers to reflect our much bolder ESG agenda and amended our onboarding processes to capture more information about suppliers' ESG status. We have also added ESG KPIs into our key management reporting within procurement.	We are implementing the Ecovadis service to integrate with our supplier systems so that we can use the information in supplier selection decisions and management processes with our existing suppliers in 2022. We will be dialling up the strength of the ESG criteria such as the application of weighting in our new supplier selection processes throughout 2022.

Embedding climate change across our culture

Our employees are the driving force behind everything we achieve as a business, which is why we are empowering our employees to take climate action with us.

Being in the insurance sector and seeing the impact of climate on our customers it is imperative to Aviva that our employees understand the urgency of the climate crisis; and integrate this into their work. This will ensure we can embed climate action across our organisation and protect our reputation as a climate leader.

To improve the knowledge and awareness of our employees, we have partnered with the WWF to provide learning experiences for our employees about climate science and climate solutions and to develop their skills around climate science communication.

Every job can go green

During 2021, 20,995 of our employees completed the training and are increasingly seeking to apply this learning to their area of the business from the risk surveyors to the workplace pension sales team.

To help empower our employees to take positive climate action within the business, we have deliberately taken steps to integrate climate considerations into the day-to-day decisions we all make, from insurance through to procurement. By doing so, we not only provide products and services that the world needs, but we also protect our brand and reputation as a climate leader.

And that is why we believe that as a climate leader we must, and do, weave climate risk management and action into our culture, through our systems and processes.

An example of this is through the dedicated work we have been doing this year to enhance the climate risk reporting and controls that are utilised across our Group and business unit functions, upskilling our workforce along the way and ensuring that climate is engrained in what we do.

Offering green benefits

This year we also welcomed the announcement by the trustees of our main UK employee pension scheme around their decision to ensure that our scheme's investments have the goal of Net Zero carbon emissions by 2040. This is another step to boost our employee spirit on climate action; we have no control over this decision but are delighted with the outcome to align with Aviva's own climate ambition.

We seek to change the conversation around climate across society

To add to the education campaign, in 2021, James Whiteman, Steve Waygood and Martin Cassidy from Aviva Investors released a new book entitled 'Against our Nature – A Hitchhikers guide to the climate crisis'. The book sets out what we can all do to help our planet and is a great example of how our employees are driving action as a climate leader in the market.

As the foreword to the book states:

> "It's brilliant. You should read it right to the end. You don't have to read it all at once. You don't actually even have to read it in the right order. But it will definitely change your usefulness as a human. It'll definitely help the planet. And it'll definitely entertain you. It's win / win / win."
>
> **Richard Curtis**
> **Writer, film director and co-founder of Make My Money Matter**

Driving the cultural change internally at Aviva

The transformation required to respond to climate change, demands a significant change in individual behaviour. To help drive this transformation we are enabling our employees to change their lifestyles and reduce their environmental footprint in several ways. In 2021 we launched our Electric Vehicle (EV) leasing scheme which will be offered to our UK employees who are eligible to the car leasing scheme. One of the key challenges with individuals transitioning to EVs is having the appropriate places to charge their cars – therefore we are installing charging points across 10% of our parking spaces at UK offices by 2025.

Additional links
> Against our Nature - A hitchiker's guide to the climate crisis

Embedding climate change across our culture continued

Our employees recognise the imperative of climate action and we want to give them the tools to take action. We do this in many ways, including the following:

The office	At home	Reward and performance	Benefits and recognition	Every job can go green!	Volunteering and giving
• Reduce office waste UK: Recycles all IT equipment • Educating our employees about energy usage, recycling and biodiversity. • All our sites are now paperless. • UK car sharing tool connecting over 400 employees in 180 active car sharing groups, and in Ireland we are part of the Taxsaver Commuter Ticket Scheme enabling colleagues to buy subsidised tickets for public transport. • Expanding EV charging ports across our offices, 10% of standard parking spaces by 2025.	• Understand their climate impact, usage of WWF my footprint App • Aviva Extras, our employee benefits scheme, helps our UK employees switch to renewable energy providers. • Aviva Flex allows our employees to offset their personal emissions.	• As pension providers, we understand how pensions play a key role in tackling climate change. Across all markets, our staff pension schemes have ESG fund options. In the UK, the default choice for the Aviva Staff Pension scheme solution has switched to ESG funds as we seek to align to the Group's Net Zero 2040 ambition. • Senior Management long term incentive plan is directly linked to reductions in carbon intensity of our investment portfolio. The remuneration policy included the climate metric for the first time this year.	• Increasing the limits on the cycle to work scheme benefits across the UK (up to £4,000, 100% increase) and Ireland (up to €1,500, maximising the government allowance), to cover electric bikes. • All our eligible employees have the options to lease an electric vehicle with significant tax savings in the UK, via our company car scheme.	• At Aviva, to empower our employees to take positive climate action within the business, ESG considerations are integrated into our decision-making processes, from insurance to procurement decisions. • The employee Climate customer Innovation fund empowers colleagues to bring their ideas for 'greening' our products and services to life. We had 35 entries in our latest challenge. The winner received an electric bike, and the top 20 ideas were taken through a two-week acceleration programme at the beginning of 2022. • Our Voice of Aviva analysis shows 90% of employees taking personal sustainability actions at work and 60% taking actions within their core role.	• ACF's Climate community fund, provides £150,000 allocated by our employees to climate projects, with the option of using up to 3 days per year volunteering with these projects. • The Aviva Foundation, our charitable grant providing Foundation, allows our employees to volunteer in their communities.

Risk Management

Risk Management

Rigorous and consistent risk management framework is embedded across Aviva.

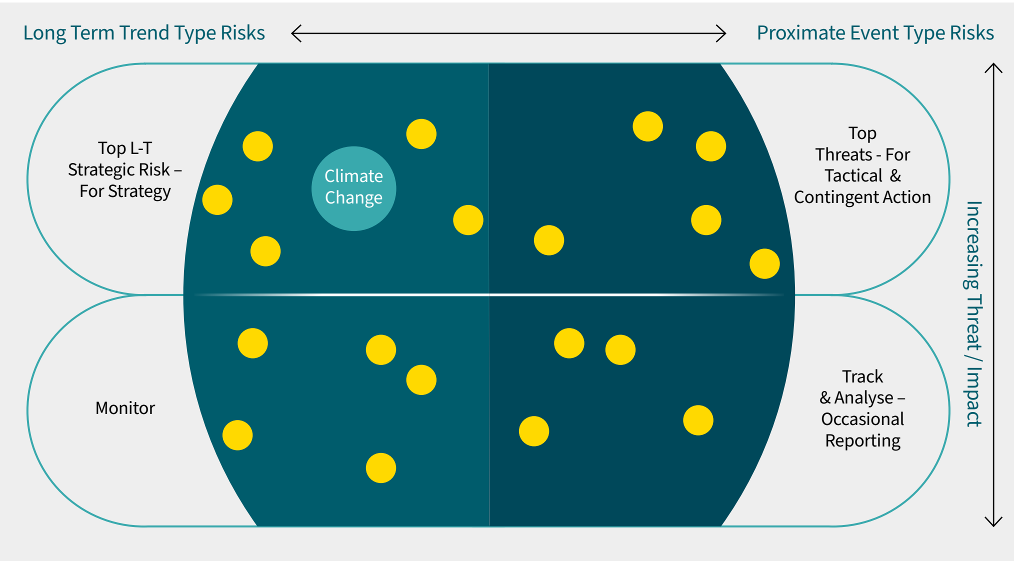
Aviva's risk management framework sets out how we identify, measure, monitor, manage and report on the risks to which our business is, or could be, exposed to (including climate-related risks).

Our process for identifying and assessing climate-related risks

We use our risk identification process to identify potential exposure to climate-related risks via the associated physical and transition transmission channels (for example new climate policies or increases in average temperatures). We then conduct exposure analysis to understand how these risks will impact our most material exposures.

We map emerging risks and trends on our emerging risk spectrum (see figure 16) according to the nature and size of their impact to assess their materiality, which dictates the prioritisation for management action and reporting necessary. This is primarily a qualitative assessment informed by quantitative indicators. Aviva considers climate change to be a significant risk to our strategy and business model and its impacts are already being felt. Therefore, we are acting now through our Sustainability Ambition to mitigate and manage its impacts both today and in the future. Through these actions, we continue to build resilience to climate-related transition, physical and liability risks.

Figure 16: Aviva Group Emerging Risk Spectrum - January 2022 Risk. Source: Aviva



Our process for integrating climate-related risks into risk management

The key trends impacting our business, including climate change, are set out in Our risks and risk management section of the Strategic Report in our 2021 Annual Report and Accounts. The principal risks impacted by climate change are credit risk, market risk, general insurance risk and life insurance risk.

In 2019, we updated our risk policies (including our Risk Management Framework and our Own Risk and Solvency Assessment (ORSA) policies) and our business planning instructions to explicitly include climate-related risks.

In 2020, we updated our business standards to integrate climate-related risks across all risk and control management activities.

We also defined our climate risk preferences (see table in this section).

Risk Management continued

In 2020, we also incorporated climate metrics, targets and operating risk limits for the first time in our business plan, to facilitate risk-based decision making. In doing so, we have taken into consideration the fact that climate-related risks and opportunities do not always easily align with existing risk management processes.

In 2021, we published our Aviva's Sustainability Ambition and this has been reflected in our business plan. It has also been reflected in our risk management and risk appetite frameworks to ensure our climate risk appetite (supported by a dashboard of metrics) is aligned with our Sustainability Ambition, Senior Management Long-Term Incentive Plan and our external commitments.

Our process to manage climate-related risks

These measures allow Aviva to identify, measure, monitor, manage and report on the climate-related risks to which our business is, or could be, exposed to and ensure climate-related risks and opportunities are embedded in our day-to-day decision making in line with our risk management and risk appetite frameworks.

Risk Appetite Statement

We have a very low appetite for climate-related risks which could have a material negative impact upon our balance sheet and business model as well as our customers and wider society. We actively seek to reduce our exposure over time to the downside risks arising from the transition to a low carbon economy. We seek to identify and support solutions that will drive a transition to a low-carbon, climate resilient economy. We seek to limit our net exposure to the more acute and chronic physical risks that will occur in the event the Paris Agreement target is not met[1]. We actively avoid material exposure to climate litigation risks.

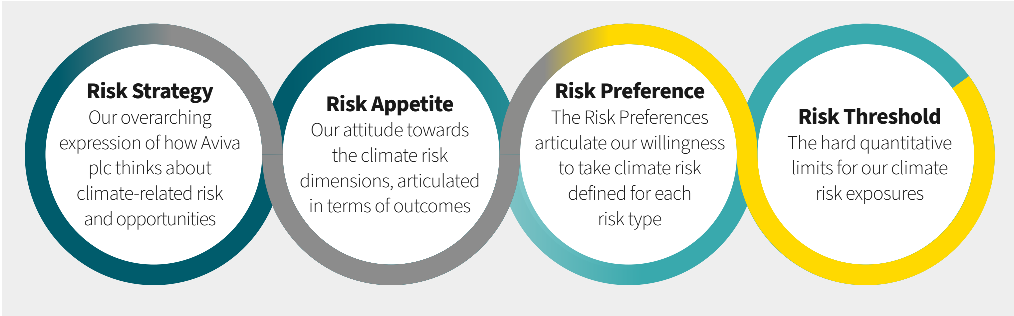
Escalation process

The climate risk appetite, its metrics and associated thresholds are set by the Board. When the overall appetite is breached the Board is notified and the breach is discussed at the next sub-committee or board meeting as relevant.

Frequency of review

We monitor our climate metrics against these thresholds and targets on a quarterly basis.

Figure 17: key components within Aviva's Climate Risk Appetite. Source: Aviva



Risk Preferences

Risk Type	Preference	Rationale
Transition risk	Avoid[1]	We seek to reduce the impact on our business that is likely to arise from the extensive policy, technology and market changes resulting from the transition to a low carbon economy. Depending on the nature, speed and focus of these changes, transition risks may pose varying levels of financial and reputational risks.
Physical risk	Accept[2]	We seek to limit, or where appropriate reduce, our investment and net underwriting exposure to the more acute and chronic physical effects of climate change, whilst recognising that we have capabilities to manage these risks, support adaptation and build resilience.
Litigation risk	Avoid	We are averse to climate litigation risk that could arise from parties who have suffered loss and damage from climate change and seek to recover losses from Aviva if they consider that investment or underwriting activities have contributed to that loss.

1 We want a small amount of this risk
2 We want a moderate amount of this risk

1 We note that physical risks will also occur even in the event the Paris Agreement target is met.

Metrics and Targets

Metrics and Targets

Our metrics to assess climate-related risks and opportunities

We use a variety of metrics and tools to manage the potential financial impact of climate-related risks and opportunities on our business, as well as to monitor our alignment with global or national targets on climate change mitigation. We share metrics on a quarterly basis at a Group and business unit level; these metrics are used internally in various processes from monitoring risk appetite to business planning to measuring progress against our external climate plan.

Whilst recognising the limitations of the metrics and tools used (e.g. scope of coverage, data availability and extended time horizons as well as the uncertainty associated with some of the underlying assumptions), we believe they are valuable in supporting our climate-related governance, strategy and risk management. We utilise internal data, as well as external data sources and providers, to produce the climate metrics.

Climate Metric	Asset/liability class	Physical/ Transition risk	Scope[1]	Measurement[4]	External Data Provider (where relevant)
Climate VaR[2]	Equity, Credit, Sovereign, Real Estate, Life and General insurance liabilities	Physical & Transition	Shareholder (including shareholder component of with-profit funds)	Assess the potential business impacts of future climate-related risks and opportunities for different IPCC scenarios and in aggregate.	MSCI[5], ND-GAIN, ClimateWise
Absolute operational carbon emissions[3]	Operational carbon emissions	Transition	Aviva operations	Measure the operational carbon emissions in tCO_2e.	DEFRA, IEA
Weighted average carbon intensity	Equity and Credit	Transition	Shareholder and with-profit funds	Use weighted average carbon intensity data to assess the exposure of our assets compared to 25% reduction target by 2025 to reduce our carbon footprint.	MSCI[5]
Investment in green assets	Green assets	Transition	Shareholder and customer funds	Measure Aviva's investment in green, social and sustainability bonds, sustainability linked loans, low carbon infrastructure and real estate and climate transition funds.	Bloomberg
Portfolio warming potential	Equity, Credit, Real Estate, Sovereign and Green Assets	Transition	Shareholder and with-profit funds	Measure the portfolio temperature pathways and alignment to Paris Agreement target.	MSCI[5], Climate Action Tracker
Monitoring sovereign holdings	Sovereign holdings	Physical	Shareholder and with-profit funds	Measure our exposure to countries highly or moderately vulnerable to climate change and review sovereigns holdings with Notre Dame-Global Adaptation Initiative (ND-GAIN) country index scores below 50.	ND-GAIN, World Bank, Climate Watch Data
Weather-related losses	General Insurance liabilities	Physical	General insurance business	Actual weather-related losses versus expected losses by year and business unit (net of reinsurance) and weather impact on Aviva's Combined Operating Ratio (COR) (net of reinsurance).	

The 2021 performance for the Climate Value-at-Risk and absolute operational carbon emissions metrics are included in the Strategy section. The 2021 performance for the other climate metrics is set out in the following pages. We have also included an update on how we measure and track climate-related litigation risk in this section.

Comparatives

In 2021 Aviva announced the disposal of its international businesses in France, Italy, Poland and Vietnam. As a result the comparatives have been re-presented to exclude these discontinued businesses to enable a consistent comparison between 2021 and 2020 metrics. Our comparatives have also been updated to include any methodology changes, such as the inclusion of with-profit funds.

1 Metrics include the Group's core markets (UK, Ireland and Canada) and our International investments in China and India.The Group's Assets Under Management are set out in the Appendix.
2 See Our climate scenario analysis section for the reporting of our Climate VaR metric
3 See the Decarbonising our operations and supply section for the Absolute operational carbon emissions metrics for 2021
4 The reporting criteria available on our website provide more information on the definition and calculation of these metrics
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Metrics and Targets continued

Weighted average carbon intensity

In line with the TCFD guidelines, we monitor the carbon footprint of our credit and equity portfolio for shareholder and with-profit funds on a regular basis. We use weighted average carbon intensity data (tCO_2e[1]/$m sales) to assess our investment portfolio's sensitivity to an increase in carbon prices and our progress to the Paris Agreement target.

Carbon intensity is based on scope 1 and scope 2 location-based carbon emissions[1] for the investee company[2] in accordance with the methodology used by MSCI.

We have reduced our weighted average carbon intensity by 7% compared to last year, and by 16% compared against a 2019 baseline, in line with our Sustainability Ambition and NZAOA reduction targets of 25% by 2025 and by 60% by 2030.

This is due to our intentional investment in less carbon intensive industries, and in companies that are actively reducing their carbon intensity - our primary investment decarbonisation strategy. As we continue to reduce the carbon intensity of our investments, they will increasingly align with the Paris Agreement temperature target. We will continue on this journey with direct engagement with investee companies, and will reserve our right to reduce our exposure to intensive companies that are not transitioning to a low carbon economy and reallocate our capital to those who are.

Figure 18 shows that weighted average carbon intensity scores of credit and equities in Aviva's shareholder and with-profit funds have decreased over 2021. We have high data coverage backing each of these scores, shown by the yellow dots on each bar.

As not all organisations publish emissions data (or indeed have their emissions data estimated by data providers), coverage of less than 100% is to be expected.

The table below shows weighted average carbon intensity metrics broken down by market. For all our key markets, weighted average carbon intensity scores of credit and equities for that market's shareholder and with-profit funds have decreased over 2021.

Figure 19 shows that carbon intensive sectors represent 21% of credit and equities in Aviva's shareholder and with-profit funds but contribute 83% of the weighted average carbon intensity. The Electricity sector is the largest single contributor, representing 7% of the portfolio but contributing to 47% of the weighted average carbon intensity.

We are continuing to work with the NZAOA and other cross-industry bodies to extend carbon intensity measures to additional asset classes. We are starting to report real estate data to the NZAOA against our reduction targets. We expect to extend our disclosure to cover these measures for real estate assets, as well as sovereign and private/illiquid assets, over 2022.

Areas of development include:

- The ongoing review of the robustness of scope 3 data which we will look to report once it is of sufficient quality.
- Sector specific carbon intensity measures.
- Constructing a forward-looking view of carbon intensity.

Weighted average carbon intensity (tCO_2e/$m sales) of credit and equities by market (shareholder and with-profit funds only)	**2021**	**2020**
UK & Ireland Life	129	145
UK & Ireland General Insurance	84	98
Canada	46	52

Figure 18: Weighted average carbon intensity (tCO_2e/$m sales) of credit and equities in Aviva's shareholder and with-profit funds as at 31/12/2021 compared to 2020[4] AS. Source: Aviva/MSCI[3].

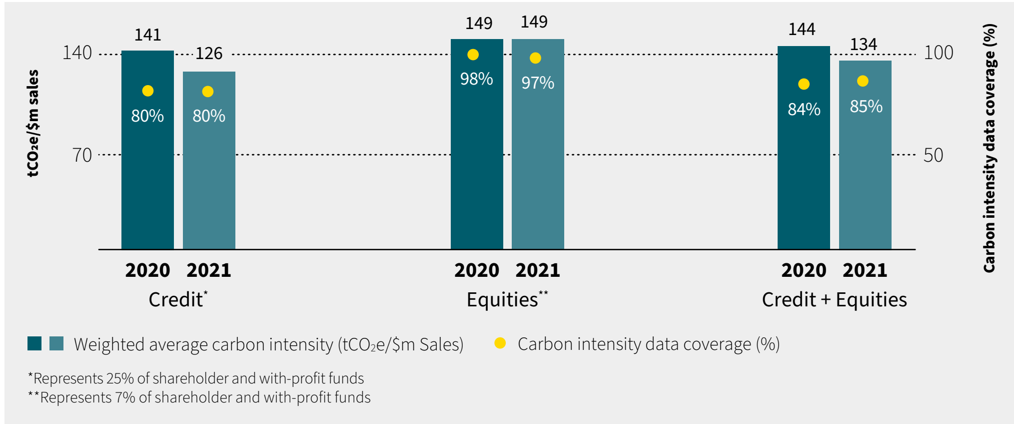
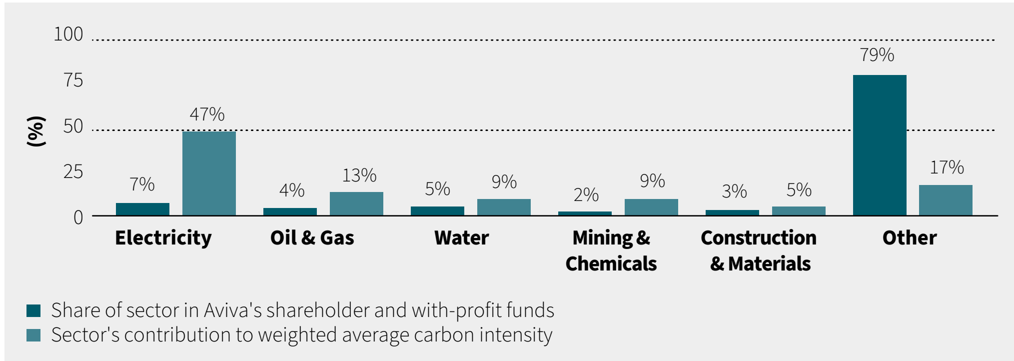


Figure 19: Aviva's exposure to carbon intensive sectors in shareholder and with-profit funds (credit and equities) as at 31/12/2021. Source: Aviva/ MSCI[3].



1 Scope 1 and Scope 2 emissions. Scope 3 is excluded at present due to data credibility and availability. As per the TCFD consultation, we support the inclusion of scope 3 and will move to include it as soon as the data permits
2 Where the carbon intensity score for an investee company is not available, where possible we have used an exposure-weighted carbon intensity score of the constituent companies that are part of the investee company's ultimate parent
3 Certain information ©2021. MSCI ESG Research LLC. Reproduced by permission
4 Independent reasonable assurance has been provided only over 2021 data marked with AS. PwC's assurance statement and a link to Aviva's Reporting Criteria can be found in this document.

Metrics and Targets continued

Investment in green assets

Participation and financial leadership in the low-carbon transition provides significant growth and impact opportunities for Aviva. We are committed to increasing our level of investment in the green economy in line with our green asset targets and metrics.

We define green assets as follows:

- Low carbon infrastructure assets (including low carbon real estate).
- Green bonds and loans (including green gilts), social bonds, sustainability bonds, and green and sustainability-linked loans.
- Climate transition funds.

The portfolio scope for green assets covers our own assets and policyholder money invested (i.e. excluding third-party client investments by Aviva Investors).

In 2021, we refined our definition of our green assets to include green gilts, social bonds and sustainability-linked loans, and to reflect discontinued businesses. The comparatives have been updated accordingly.

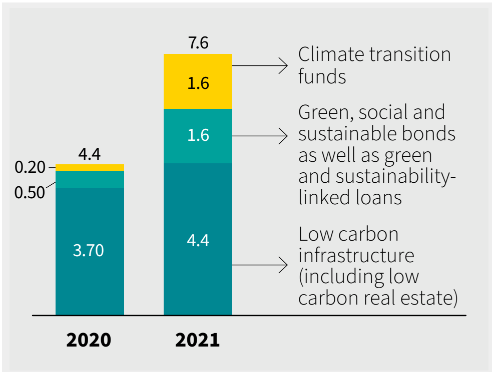
Aviva supports the development of economy-wide definitions of green assets, including through the UK Green Finance Roadmap, UK Green Taxonomy and Sustainability Labelling Regime, which will improve comparability between organisations.

Figure 20 shows that our green assets at 31 December 2021 totalled £7.6 billion (2020: £4.4 billion). The green assets by market table shows the green assets for each of our core markets.

Of the £7.6 billion in green assets:

- £4.4 billion are in low carbon infrastructure. Over the year, we have written £780 million of new infrastructure investments in green transport, energy from waste and energy efficiency projects. These investments in renewable and low carbon energy generation support the transition to a Net Zero economy.
- £1.6 billion are in green, social and sustainability bonds, and green and sustainability-linked loans. In 2021, we subscribed to the UK government's first ever issuance of green gilts.
- £1.6 billion are in climate transition funds[1]. Over 2021, the assets under management of our credit and equity transition funds grew substantially and we launched our real assets transition fund.

Figure 20: Investment in green assets (£bn)[2] AS. Source: Aviva.



Progress against targets

As part of our Aviva Sustainability Ambition in 2021, we have targeted to invest an additional £6 billion in green assets by 2025 from a 31 December 2019 baseline, including £1.5 billion of policyholder money into climate transition funds.

Since the beginning of 2020, we have already made significant progress towards meeting these targets, having invested £4 billion in green assets, of which £1.3 billion relates to policyholder money in climate transition funds.

Canada has achieved its target to invest $100 million Canadian Dollars (CAD) in green bonds by the end of 2021, with an additional target of $200 million CAD and $350 million CAD in 2022 and 2023 respectively.

Aviva Investors targeted that by 2025, we will have invested an additional £2.5 billion in low carbon and renewable infrastructure and £1 billion in climate-transition focused loans from year-end 2019. This target covers investments in third parties, and therefore is not covered in full in this metric as the scope is defined as Aviva's and its customers money.

The vast bulk of our green assets sit in UK and Ireland Life, and the amount of green assets for each of our Life and General Insurance businesses are included in the table below.

Green assets by market (£bn)	2021	2020
UK & Ireland Life	7.0	4.3
UK & Ireland General Insurance	0.2	0.1
Canada	0.1	0.0

1 This represents the total assets under management of the climate transition funds of which £1.3 billion relates to policyholder money from UK & Ireland Life and £0.3 billion relates to external investment in these funds

2 Independent reasonable assurance has been provided only over 2021 data marked with AS. PwC's assurance statement and a link to Aviva's Reporting Criteria can be found in this document

Metrics and Targets continued

Portfolio warming potential

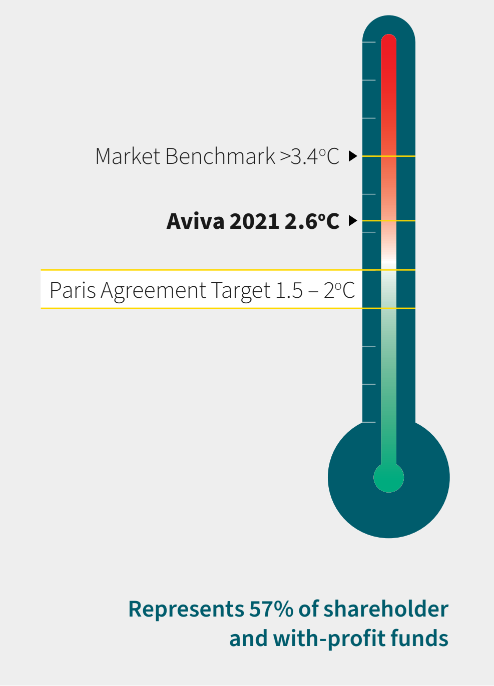
We use a portfolio warming potential metric to assess our shareholder and with-profit funds' credit, equity, real estate, green infrastructure and sovereign bond investments' alignment with the Paris Agreement target. This is based on the alignment of each company within the portfolio to the sectoral greenhouse gas emission intensity needed for each sector to make its contribution to reach the Paris Agreement target.

The portfolio warming potential methodology captures Scope 1, 2 and 3 emissions and a cooling potential element, to capture avoided emissions based on low carbon patents and revenues, as well as company-reported decarbonisation targets to provide a forward-looking perspective[2]. We have been reporting on this metric since 2018.

Figure 21 shows that the total warming potential projected for Aviva's shareholder and with-profit funds is 2.6°C, based on 57% of the assets in scope of the metric definition, well below the market benchmark[3]. The warming potential of the credit and equity investments amount to 2.7°C and 3.0°C respectively.

Using the 1.5°C Paris Agreement target, we have reduced our portfolio warming potential by 10% compared to last year (which had a warming potential of 2.9°C), and by 16% compared against a 2019 baseline (which had a warming potential of 3.1°C), in line with our Sustainability Ambition.

Figure 21: Aviva's Portfolio Warming Potential (in °C) for shareholder and with-profit funds as at 31/12/2021. Source: Aviva/ MSCI[5].



This reduction reflects both Aviva's and its invested companies' actions to reduce emissions and is also consistent with the latest IPCC synthesis report and commitments made at COP 26.

The portfolio warming measure covers our most material exposures:

- We use MSCI analysis to provide warming potential temperatures for our equity, corporate bond and property investments.
- We have derived portfolio warming potential temperatures for our sovereign exposures based on an analysis of individual governments' climate actions and how they compare against the Paris Agreement target, taking into account independent analysis conducted by organisations such as Climate Action Tracker[1].
- The warming potential for green infrastructure assets is based on internal analysis.

We continue to take actions to reduce our investment exposure to carbon intensive sectors over time, in line with our climate transition plan. This should lead to a reduction in the warming potential of Aviva's shareholder and with-profit funds consistent with our Sustainability Ambition to become a Net Zero insurer by 2040.

Over 2022, we expect to move to a revised portfolio alignment measure provided by MSCI - Implied Temperature Rise[4], which is more closely aligned to the TCFD consultation recommendations specifically set out by the Portfolio Alignment Team in their paper 'Measuring Portfolio Alignment'.

1 The Climate Action Tracker is an independent scientific analysis tracking government climate action since 2009. https://climateactiontracker.org/countries/uk/
2 Scope 3 emissions data is largely estimated. To account for this, we have applied a credibility weighting to the Scope 3 element contribution to our overall warming potential. The sensitivity of our overall warming potential to the credibility weighting applied is ±0.2°C
3 MSCI All Country World Index (ACWI) Investable Market Index (IMI)
4 For 2021, the implied temperature rise for Aviva's shareholder and with-profit funds' credit and equity investments are 2.2°C and 2.7°C respectively
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Metrics and Targets continued

Monitoring sovereign holdings

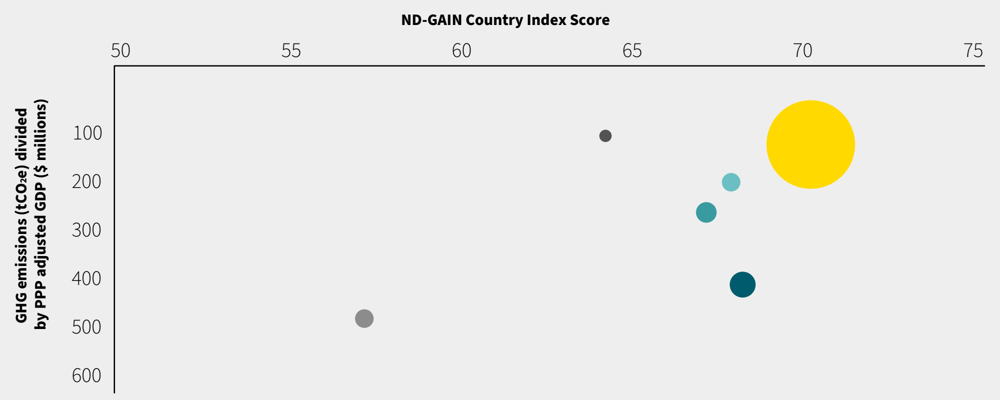
Aviva uses the University of Notre Dame Global Adaptation Initiative (ND-GAIN) country index[1] to measure our sovereign holdings' exposure to climate-related risks. The ND-GAIN country index measures a country's vulnerability to the physical effects of climate change and its readiness to adapt to its effects by considering economic, governance and social readiness. A country is scored on the index between 0 and 100 (higher is better). We have been reporting on this metric since 2018.

Separately, the NZAOA is working towards publishing a methodology for calculating sovereign emissions intensity in early 2023; we have included a sovereign emissions intensity metric (greenhouse gas emissions by PPP-adjusted GDP) in Figure 22 using draft methodology set out by PCAF and expect to move to the NZAOA basis once it has been agreed. This metric measures a country's emission intensity on a purchasing power parity adjusted basis - the lower the score the better.

Figure 22 shows ND-GAIN country index scores on the horizontal axis and sovereign emissions intensity on the vertical axis with the size of the bubbles representing the contribution to the total shareholder and with-profit sovereign holdings. The top-right corner represents sovereigns exhibiting relatively low emissions and strong resilience.

The United Kingdom and Ireland score well against both measures with both high ND-GAIN country index and low sovereign emissions intensity scores. Canada is an outlier with regards to its sovereign emissions intensity score, despite its high ND-GAIN country index score.

Figure 22: Sovereign holdings exposure to climate-related risks[2] AS (ND-GAIN country index scores and sovereign emission intensity for Aviva's top sovereign holdings in shareholder and with-profit funds as at 31/12/2021. Source: Aviva, ND-GAIN (2019), World Bank and Climate Watch Data)



The first number in the above legend represents the ND-Gain country index score, the second number is the GHG emissions divided by PPP adjusted GDP and the 3rd number represents the percentage contribution to the total shareholder and with-profit sovereign exposure as at 31 December 2021.

For sovereign bonds, Aviva is predominantly exposed to sovereigns from developed markets. We have no significant exposure to countries highly vulnerable to the physical effects of climate change and our exposure to moderately exposed countries is captured as part of our risk management and monitoring of sovereign risk. We also have no material exposure to sovereigns whose credit quality is reliant on oil and gas production.

We monitor our exposure to countries with an ND-GAIN country index score of under 50. At 2021, this amounts to 2% of our overall sovereign exposure, with half of this relating to our international investment in India.

In addition to our risk monitoring, we engage with finance ministries around the world on climate change mitigation and adaptation/resilience and will continue to increase our profile in this regard.

1 https://gain.nd.edu/our-work/country-index
2 Independent reasonable assurance has been provided only over 2021 data marked with AS. PwC's assurance statement and a link to Aviva's Reporting Criteria can be found in this document.

Metrics and Targets continued

Weather-related losses

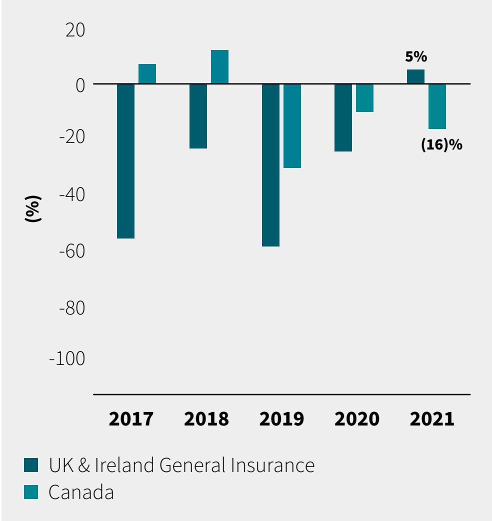
Aviva is dedicated to helping our customers protect their properties against devastating floods. For many years, when settling property flood claims we have carried out cost neutral repairs[1]. We also support the Code of Practice for property flood resilience and the recently published Guidance – to provide property owners with independent professional advice and reliable installation to increase confidence with their resilient flood repairs to reduce flood damage, speed up recovery and reoccupation. In addition, we train our in-house field claims teams to advise on property flood resilient measures as part of the repair process. Our Risk Management team provide advice and guidance to customers on the steps they can take to protect their premises to mitigate the impacts of flooding on their property and ensure our business customers have plans in place to enable them to continue to trade.

We recognise that weather-related events may become more frequent, severe, clustered and persistent. The speed of this change and the ability of society to adopt mitigation strategies may impact our ability to profitably provide products for our customers at affordable levels over the longer term. We build the possibility of extreme weather events into our pricing to ensure it is adequate and monitor actual weather-related losses versus expected weather losses by business. Catastrophic event model results are supplemented by in-house disaster scenarios. Overall, the actual weather-related losses in 2021 are broadly line with the expected weather-related losses[2]. The weather-related losses in UK & Ireland General Insurance were slightly worse than expected (driven by flash floods in July in the UK), this was offset by the weather-related losses in Canada being less than the expected amount.

Our general insurance business exposure is limited by being predominantly in Northern Europe and Canada along with some world-wide exposure from our corporate underwriting (which is covered within our existing reinsurance programmes). We require our general insurance businesses to protect against all large, single catastrophe events by purchasing reinsurance in line with local regulatory requirements or, where none exist, to at least a 1-in-250-year event. The catastrophe reinsurance programmes limit Aviva's losses, depending on territory, from a relatively low retention level[3] up to at least a 1-in-250-year event. Factors determining these decisions include capital efficiency, appetite for general insurance earnings volatility and reinsurance market competitiveness. Aviva Canada has reinsurance cover up to a 1-in-500-year event[4], in line with government requirements. In the medium to longer term, there is potential for the premiums we need to charge to cover our risk exposure to increase in line with intensity and frequency of extreme weather.

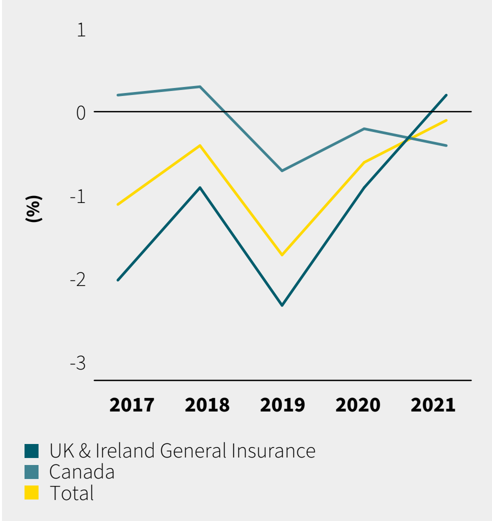
Looking across all of our property insurance portfolios, the proportion of property insurance premiums attributable to weather-related losses is currently quite small, so the impact on premiums would be correspondingly low. Naturally there are areas at higher risk, which would see proportionate increases in premiums based on the risk. In those cases, we consider that the continued presence of industry-wide initiatives like FloodRe in the UK and development of risk mitigation techniques as well as public investment in flood defences would be vital in ensuring widespread access to insurance for all.

Figure 23: Actual weather-related losses versus expected losses[5] AS (by year and business unit, net of reinsurance). Source: Aviva.



In Figure 23, when the actual weather-related losses is equal to the LTA, the percentage is equal to 0%. Better than expected performance will result in a negative percentage and worse than expected performance will be a positive percentage.

Figure 24: Weather impact on Aviva's Combined Operating Ratio (COR) (net of reinsurance). Source: Aviva.



In Figure 24, when the impact on COR is as expected, the percentage is equal to 0%. Better than expected performance will be a negative percentage (hence a reduction in COR) and worse than expected performance will be a positive percentage (hence an increase in COR).

As can be seen in both figure 23 and 24, the actual related-weather losses have performed better than expected (or at least in line with expectation) from 2017 to 2021.

1 'Cost neutral repairs' are resilient repairs being built into the cost of reinstatement - e.g. using waterproof plasterboard, raising electric points
2 The expectation for weather-related losses is based on the long-term average (LTA)
3 The retention levels in the UK are £150 million on a per-occurrence basis and £175 million on an annual aggregate basis, while in Canada they are set at $CAD 50 million
4 The Office of the Superintendent of Financial Institutions, the local regulator in Canada, established a glide path to a 1:500 protection which was put in place in January 2022 (prior to that, the cover was up to a 1-in-490-year event)
5 Independent reasonable assurance has been provided only over 2021 data marked with AS. PwC's assurance statement and a link to Aviva's Reporting Criteria can be found in this document.

Metrics and Targets continued

Litigation risks

Climate-related litigation continues to be a growing trend globally with the number of climate-related litigation cases having more than doubled in the last six years. Litigation is increasingly being viewed as an effective tool that could be used by investors, shareholders and civil society to influence policy decisions and corporate behaviour[1].

Aviva undertakes litigation risk assessment with the support of in-house counsel. We believe Aviva is proactive in considering the potential impacts that could arise from climate-related litigation risk and we monitor our potential exposure to this risk alongside other climate-related risks. The two litigation trends, at present, that are most likely to affect Aviva are:

- Litigation actions that seek to force companies to increase their disclosure of the impact of climate change (physical and transition risks). This could extend to the climate-related risks associated with the assets in which the company invests as well as the projects and companies that are directly, or indirectly, financed.
- Litigation that targets asset owners, such as our insurance businesses or asset managers (e.g. Aviva Investors), in relation to the climate impact of their investments.

Historically, the vast majority of climate-related litigation risk cases to date have been brought in the US and the majority of these were unsuccessful cases that were primarily focused on public nuisance. Of the cases outside the US, the majority have been brought against governments, although there have also been a small number of cases against corporations. More recently, climate-related litigation has become more common across other jurisdictions, including the UK[2].

The nature of these cases has moved towards alleged breaches of corporate law, misleading conduct, fraud, human rights and breaches of disclosure rules in listing and other corporate regimes. In addition, climate-related claims are increasingly being pursued by investors and activist shareholders. As a result, shareholders, consumers and regulators around the world are showing an increased willingness to challenge companies that are perceived to have failed to take meaningful action in respect of climate change or have misrepresented the risks to which they are exposed and the actions they are taking.

Aviva believes that the best mitigation against climate-related litigation risk is the robust governance, due diligence and disclosure framework that we have put in place around our exposures to climate change as set out in the Governance section of this report. Furthermore, Aviva's assessment is that the direct impact from any legal challenges, and any associated fines, continues to be low across our global portfolio.

In 2021, we performed further reviews of climate-related litigation risk, extending the work carried out in 2020[3], in the following key areas:

- Direct financial impacts arising from risks posed to Aviva via the underwriting of liability insurance products (i.e. where Aviva provides cover to customers who are themselves litigated against);
- Direct financial impacts arising from failure to apply regulatory requirements and/or disclosures; and
- Other potentially material financial impacts arising from direct litigation against Aviva.

1 https://www.lse.ac.uk/granthaminstitute/publication/global-trends-in-climate-litigation-2021-snapshot/
2 https://www.ngfs.net/sites/default/files/medias/documents/climate_related_litigation.pdf
3 In 2020, all litigation risk outputs and methodology decisions have been reviewed and challenged by a specially constituted expert panel with internal and external membership

Metrics and Targets continued

Risks arising from liability insurance products

In relation to risks arising from the underwriting of liability insurance products, our assessment identified that the majority of climate-related litigation risk relates to the following products:

- Directors and Officers Liability Insurance
- Public Liability Insurance
- Financial Institutions Insurance
- Professional Indemnity Insurance
- Pensions Trustees Liability Insurance
- Environmental Liability Insurance

The climate-related litigation risk associated with each of these products is considered to be low, due to a combination of policy wording restrictions, low exposures in high risk sectors and reinsurance arrangements being in place to mitigate any areas of potentially significant exposure.

In 2021, Aviva participated in the CBES exercise. As part of this exercise, we have carried out a quantitative approach to assessing potential exposures to climate-related litigation risk in relation to the above products.

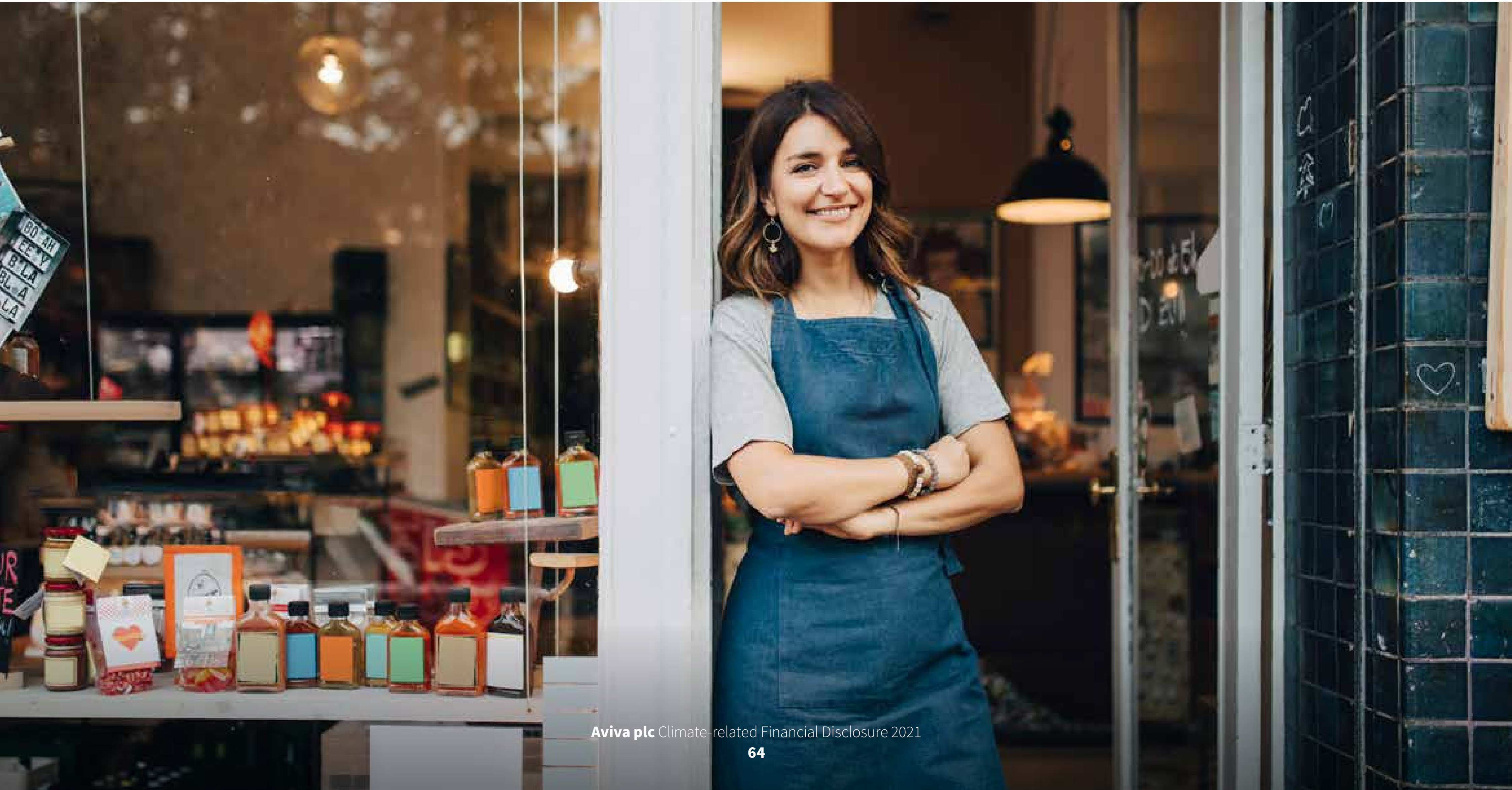
Risks arising from failure to apply regulatory requirements/disclosures

There are a number of recent, and emerging, regulatory requirements relating to climate and ESG-related disclosures. For example: TCFD disclosures, the Non-Financial Reporting Directive (NFRD) and MiFID II, the European Sustainable Finance Disclosure Regulation (SFDR) and the UK Sustainable Disclosure Regulation (SDR). Aviva complies with all current regulatory requirements that are relevant to our business and we regularly review any proposals to change these requirements, or to introduce new ones, to ensure that we remain compliant and adopt early where possible. With reference to SFDR, specific reviews have been carried out during 2020 and 2021 to ensure that Aviva continues to be compliant with new requirements. As a result of the reviews performed and detailed work carried out in these areas, Aviva has assessed the current risk of a significant direct financial impact arising from failure to apply regulatory requirements relating to climate and ESG-related disclosures as low.

Risks arising from other sources of direct litigation against Aviva

In addition to the above specific areas, work has been carried out in 2021 to identify any other areas of potential sources of climate-related litigation risk that could result in direct litigation against Aviva. The main area identified from these reviews related to possible 'Greenwashing' type legal actions arising from the range of funds managed by Aviva Investors. Reviews have been carried out to assess the level of litigation risk that could arise from funds that have a climate/ESG mandate and also across our existing mainstream fund portfolio. In both cases, we consider the risk of direct climate-related litigation against Aviva to be low. We recognise that litigation risk continues to be an emerging area of focus for both companies and regulators, and we will continue to monitor and review climate-related litigation risk in 2022.

Independent Assurance



Independent Reasonable Assurance Report to the Directors of Aviva plc on selected sustainability metrics

The Board of Directors of Aviva plc ('Aviva') engaged us to obtain reasonable assurance on the selected sustainability metrics (the 'Subject Matter Information') set out in Aviva's Annual Report and Accounts 2021, Sustainability Report 2021 and Climate-related Financial Disclosure 2021 (together the '2021 Reports') described more fully opposite.

Our assurance opinion does not extend to information in respect of earlier periods or to any other information included in, or linked from the 2021 Reports.

Our reasonable assurance opinion

In our opinion, the Subject Matter Information contained in Aviva's 2021 Reports for the year ended 31 December 2021 has been prepared, in all material respects, in accordance with the Reporting Criteria defined in the 'Subject Matter Information and Reporting Criteria' section opposite.

Subject Matter Information and Reporting Criteria

The Subject Matter Information needs to be read and understood together with the Reporting Criteria, which Aviva is solely responsible for selecting and applying. The Subject Matter Information and the Reporting Criteria are as set out in the table opposite and are marked with the symbol AS in the Sustainability Report 2021 and Climate-related Financial Disclosure 2021:

Subject Matter Information	Annual Report and Accounts: Our sustainability ambition	Annual Report and Accounts: Our climate-related financial disclosure	Sustainability Report	Climate-related Financial Disclosure	Reporting Criteria
Weighted average carbon intensity (tCO_2e/$m sales) of credit and equities in Aviva's shareholder and with-profit funds		•	•	•	Reporting criteria as published on 2 March 2022[1]
Investment in Green Assets		•	•	•	
Sovereign holdings exposure to climate-related risks (ND-GAIN)				•	
Actual weather-related losses versus expected losses				•	
Reduction in CO_2e against 2010 baseline	•		•		
Operational carbon emissions scope 1, 2 and 3 (location-based and market-based)	•		•		
Carbon offsets	•		•		
Intensity ratios i. Scope 1 and 2 – location-based emissions (tCO_2e) / £ million GWP ii. Total location-based emissions (tCO_2e) / £ million GWP iii. Total location-based emissions (tCO_2e) / employee	•		•		
Electricity used from renewable sources (%)	•		•		
Energy consumption (MWh)	•		•		
% of employees that have read, understood and accepted the business ethics code	•		•		
Amount of community investment (£) – including value of skills	•		•		

1 The maintenance and integrity of Aviva's website is the responsibility of the Directors; the work carried out by us does not involve consideration of these matters and, accordingly, we accept no responsibility for any changes that may have occurred to the reported Subject Matter Information or Reporting Criteria when presented on Aviva's website at www.aviva.com/content/dam/aviva-corporate/documents/investors/pdfs/reports/2021/aviva-cr-reporting-criteria-2021.pdf.

Independent Reasonable Assurance Report to the Directors of Aviva plc on selected sustainability metrics continued

Inherent limitations

The absence of a significant body of established practice on which to draw to evaluate and measure non-financial information allows for different, but acceptable, evaluation and measurement techniques that can affect comparability between entities and over time.

Non-financial performance information is subject to more inherent limitations than financial information, given the characteristics of the underlying subject matter and the methods used for determining such information. The precision of different measurement techniques may also vary.

In particular:

- The weighted average carbon intensity of credit and equities is based on actual and estimated carbon emission intensity factors provided by a third party provider.
- Carbon offsets are subject to inherent limitations, including but not limited to the extent of social impact, the risk of double counting, lack of additionality, leakage, permanence and uncertainties as to whether the expected reductions or removals will occur. This could impact the estimated reduction or removal of CO_2e assigned to those offsets.

The uncertainties and limitations are laid out in more detail in the Reporting Criteria.

Responsibilities of Aviva's directors

The Directors of Aviva are responsible for:

- determining appropriate reporting topics and selecting or establishing suitable Reporting Criteria for measuring or evaluating the underlying subject matter;
- ensuring that those criteria are relevant and appropriate to Aviva and the intended users of the 2021 Reports;
- the preparation of the Subject Matter Information in accordance with the Reporting Criteria including designing, implementing and maintaining systems, processes and internal controls over information relevant to the evaluation or measurement of the Subject Matter Information, which is free from material misstatement, whether due to fraud or error, against the Reporting Criteria; and
- producing the 2021 Reports, including underlying information and a statement of directors' responsibility, which provides a complete, accurate, balanced reflection of Aviva's performance in this area and discloses, with supporting rationale, matters relevant to the intended users of the 2021 Reports.

Our responsibilities

We are responsible for:

- planning and performing the engagement to obtain reasonable assurance about whether the Subject Matter Information is free from material misstatement, whether due to fraud or error;
- forming an independent opinion, based on the evidence we have obtained; and
- reporting our opinion to the Directors of Aviva.

Professional standards applied

We performed a reasonable assurance engagement in accordance with International Standard on Assurance Engagements 3000 (Revised) 'Assurance Engagements other than Audits or Reviews of Historical Financial Information' and, in respect of the greenhouse gas emissions, in accordance with International Standard on Assurance Engagements 3410 'Assurance engagements on greenhouse gas statements', issued by the International Auditing and Assurance Standards Board.

Our independence and quality control

We have complied with the Institute of Chartered Accountants in England and Wales Code of Ethics, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour, that are at least as demanding as the applicable provisions of the International Ethics Standards Board for Accountants International Code of Ethics for Professional Accountants (including International Independence Standards).

We apply International Standard on Quality Control (UK) 1 and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Independent Reasonable Assurance Report to the Directors of Aviva plc on selected sustainability metrics continued

Summary of work performed as the basis for our assurance conclusion

A reasonable assurance engagement involves performing procedures to obtain evidence about the Subject Matter Information. The nature, timing and extent of procedures selected depend on professional judgement, including the assessment of risks of material misstatement, whether due to fraud or error, in the Subject Matter Information. In making those risk assessments, we considered internal controls relevant to Aviva's preparation of the Subject Matter Information. A reasonable assurance engagement also includes:

- Considering the suitability in the circumstances of Aviva's use of the Reporting Criteria as the basis for preparing the Subject Matter Information;
- Evaluating the appropriateness of evaluation and measurement methods, reporting policies used and the reasonableness of estimates made by Aviva; and
- Evaluating the disclosures in, and overall presentation of the Subject Matter Information.

Our procedures did not include testing the accuracy of the externally published input data provided by third parties, namely the estimated emission intensity factors provided by MSCI and the sovereign climate risk data sourced from Notre Dame Global Adaptation Initiative (ND-GAIN). Nor did we evaluate the quality or validity of the underlying carbon offsets.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other information

The other information comprises all of the information in the 2021 Reports other than the Subject Matter Information and our assurance report. The directors are responsible for the other information. As explained above, our assurance conclusion does not extend to the other information and, accordingly, we do not express any form of assurance thereon. In connection with our assurance of the Subject Matter Information, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the Subject Matter Information or our knowledge obtained during the assurance engagement, or otherwise appears to contain a material misstatement of fact. If we identify an apparent material inconsistency or material misstatement of fact, we are required to perform procedures to conclude whether there is a material misstatement of the Subject Matter Information or a material misstatement of the other information, and to take appropriate actions in the circumstances.

Use and distribution of our report

This report, including our opinion, has been prepared solely for the Board of Directors of Aviva in accordance with the agreement between us dated 7 December 2021, in order to assist the Directors in reporting Aviva's sustainability performance and activities. We permit this report to be disclosed in the 2021 reports for the year ended 31 December 2021, to assist the Directors in responding to their governance responsibilities by obtaining an independent assurance report in connection with the Subject Matter Information. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Board of Directors and Aviva for our work or this report except where terms are expressly agreed between us in writing.

PricewaterhouseCoopers LLP
Chartered Accountants
London
1 March 2022

Appendix

Climate Scenario Analysis

In accordance with the recommendations of the TCFD, Aviva has developed a Climate VaR measure which enables scenario analysis to determine the potential business impacts of future climate-related risks and opportunities. This appendix sets out our approach.

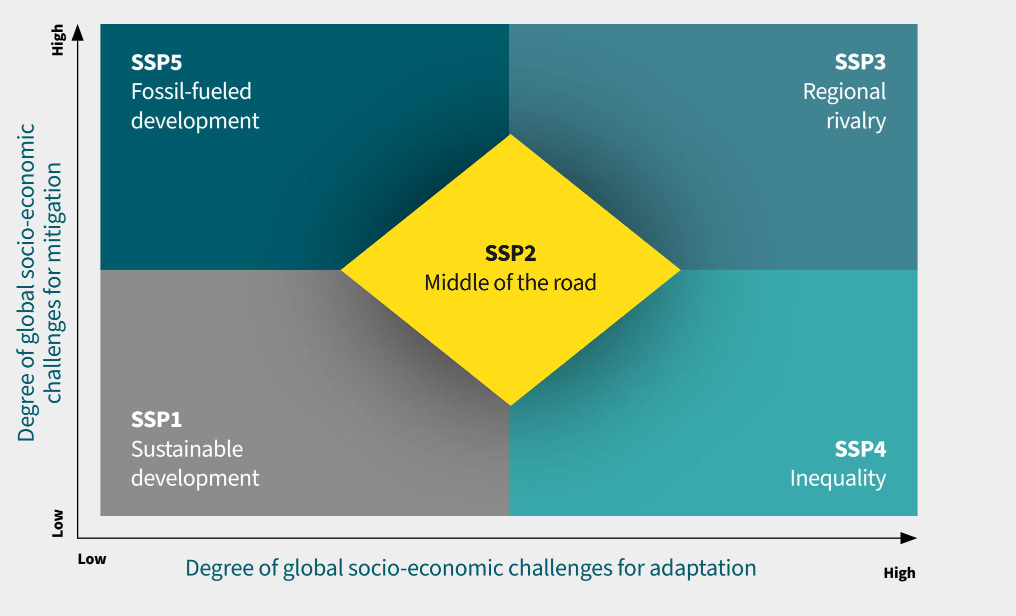
Climate scenarios considered

Aviva assesses the potential business impacts of future climate-related risks and opportunities under different IPCC scenarios and in aggregate[1]. The IPCC scenarios describe the effect on the energy balance of the global climate system due to changes in the composition of the atmosphere from sources like greenhouse gas emissions, other air pollutants[2] and changes in land use. The four IPCC scenarios identified in the IPCC Fifth Assessment Report (AR5) represent different Representative Concentration Pathways (RCPs) which describe the composition of the atmosphere and the impact on global warming at the end of the 21st century. Figure 25 summarises the link between these RCPs, potential temperature rises by 2100 and the level of mitigation required, which we will use to describe the scenarios in this report.

Figure 25: Mapping for RCPs, potential temperature rises and levels of mitigations. Source: TCFD.

RCP	Temperature rise	Description
RCP2.6	1.5°C	Aggressive mitigation
RCP4.5	2°C	Strong mitigation
RCP6.0	3°C	Some mitigation
RCP8.5	4°C	No further mitigation

Figure 26: Mitigation and adaptation challenges depicted by each SSP



Source: https://www.mdpi.com/1660-4601/15/1/3

Aggressive mitigation is the only scenario where it is more likely than not that the temperature change in 2100 will be less than 2°C. Since the original AR5 report new RCPs have been developed, such as RCP1.9 which limits global warming to 1.5°C, and pathways are now being considered together with five Shared Socioeconomic Pathways[3] (SSPs).

These consider socio-economic characteristics including things such as population, economic growth, education, urbanisation and the rate of technological development. In addition, scenarios can also be selected that represent early policy action or late policy action. The timing of climate action can represent orderly and disorderly transition pathways. Figure 26 illustrates the five different SSPs.

1 Aviva was awarded the Climate Risk Initiative of the Year 2020 by InsuranceERM. https://www.insuranceerm.com/content/galleries/insuranceerm-annual-awards-2020-uk-and-europe-winners/climate-risk-initiative-of-the-year-aviva.html
2 Fundamentals of Air Pollution (Fifth Edition); Daniel Vallero; 2014. https://www.sciencedirect.com/book/9780124017337/fundamentals-of-air-pollution
3 The Shared Socioeconomic Pathways and their energy, land use, and greenhouse gas emissions implications: An overview; Keywan Riahi et al.; 2017. https://www.sciencedirect.com/science/article/pii/S0959378016300681

Climate Scenario Analysis continued

Development

Aviva developed this Climate VaR measure in conjunction with the UNEP FI investor pilot project, which developed models and scenario analysis tools to assess the potential impact on corporate bonds, equity securities and real estate of different scenarios in conjunction with MSCI[1].

MSCI calculates the impact of transition based on a range of Integrated Assessment Models' assessments of different combinations of SSPs and temperature changes:

- The AIM/CGE model[2] from the Japanese National Institute for Environmental Studies (NIES)[3]
- The IMAGE model[4] (Integrated Model to Assess the Global Environment) developed in conjunction with the PBL Netherlands Environmental Assessment Agency in partnership with the University of Utrecht
- The GCAM model[5] (Global Change Assessment Model) primarily developed by the Joint Global Change Research Institute (JGCRI) in the USA
- The REMIND model (Regional Model of Investment and Development) developed by Potsdam Institute for Climate Impact Research (specifically for the NGFS scenarios)

MSCI calculates the impact of physical risk in the IPCC RCP 8.5 scenario. MSCI calculates both the expected physical impact in this scenario as well as an aggressive physical impact based on a higher 95th percentile. Figures 27 and 28 show large dispersion around the global average temperature change in different RCPs and around the mean from the impact of climate change on sea level rise.

While the scenarios reflect current scientific research, there clearly remains significant uncertainty regarding future climate trajectories as well as political risk with respect to implementation of the Paris Agreement and Nationally Determined Contributions (NDCs)[6].

It is also important to note that the four RCP scenarios identified in AR5 all assume a gradual path, in which temperatures slowly rise but climate policy is ramped up at varying speeds with a fairly high degree of global co-ordination. They do not consider the transition risk in a more chaotic policy environment, where there is lack of global co-ordination and policy action is taken too late and too suddenly.

Time horizon modelled for different scenarios

Transition and physical risk are modelled consistently until the end of the 21st century. For physical risk, the longer time horizon is required to capture the worst physical impacts of climate change, as these are not likely to manifest themselves until the second half of the century. If a specific use case is based on a shorter time horizon (e.g. 15 years), the financial impacts can be assessed over this time horizon.

Figure 27: Global average surface temperature change. Source: Based on IPCC. AR5 (2014)

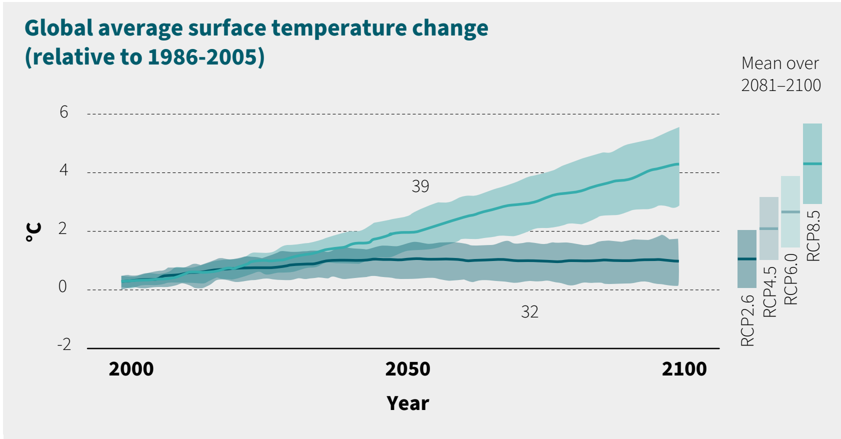
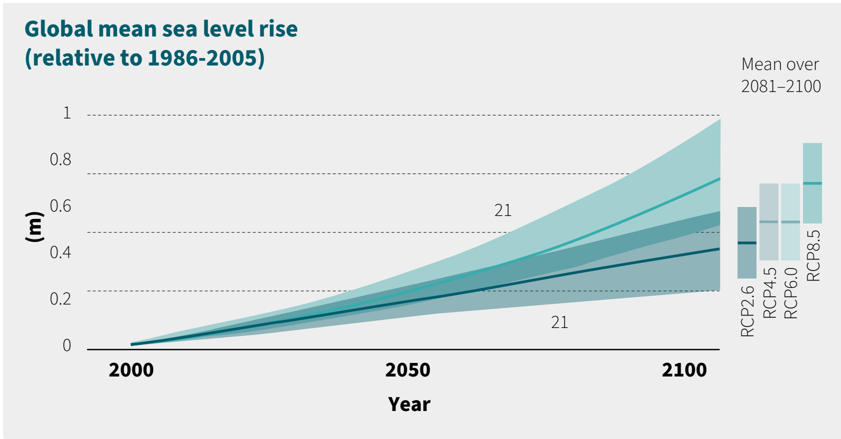


Figure 28: Example of global mean sea level rise. Source: Based on IPCC. AR5 (2014)



1 For MSCI data used throughout this report: Although Aviva's information providers, including without limitation, MSCI ESG Research LLC and its affiliates (the 'ESG Parties'), obtain information (the 'Information') from sources they consider reliable, none of the ESG Parties warrants or guarantees the originality, accuracy and/ or completeness, of any data herein and expressly disclaim all express or implied warranties, including those of merchantability and fitness for a particular purpose. The Information may only be used for your internal use, may not be reproduced or redisseminated in any form and may not be used as a basis for, or a component of, any financial instruments or products or indices. Further, none of the Information can in and of itself be used to determine which securities to buy or sell or when to buy or sell them. None of the ESG Parties shall have any liability for any errors or omissions in connection with any data herein, or any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.

2 The AIM/CGE model is a multi-regional, multi-sectoral, computable general equilibrium (CGE) model.

3 The National Institute for Environmental Studies (NIES) is a Japanese research institute that undertakes a broad range of environmental research in an interdisciplinary and comprehensive manner.

4 The IMAGE model is an ecological-environmental model.

5 The GCAM model is a dynamic-recursive model.

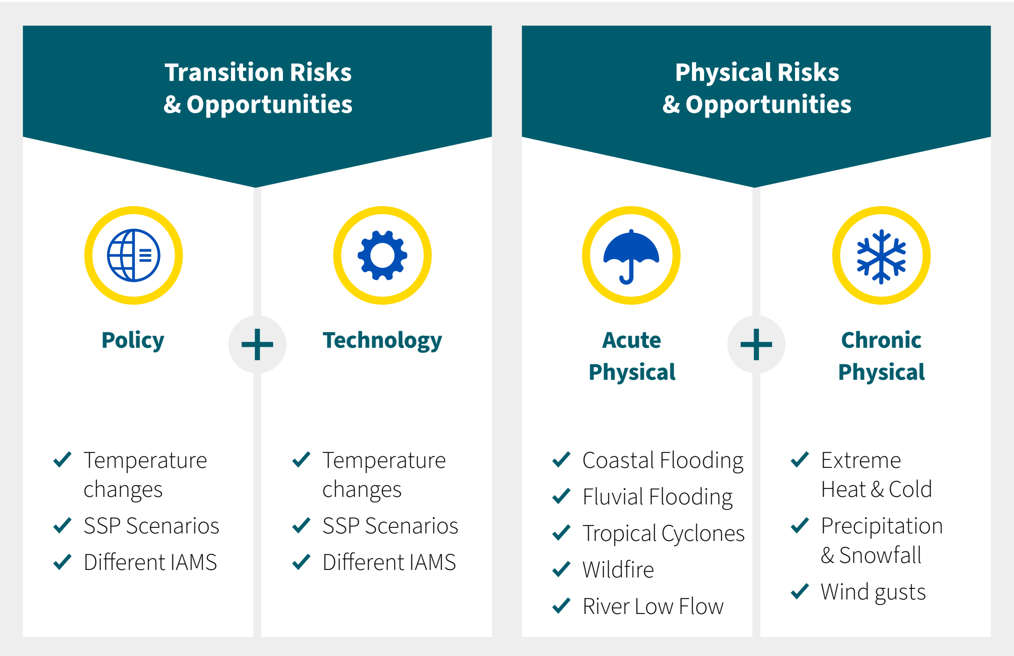
6 Intended Nationally Determined Contributions is a term used under the UN Framework Convention on Climate Change for reductions in greenhouse gas emissions that all countries that signed the UNFCCC were asked to publish in the lead-up to COP21.

Climate Scenario Analysis continued

Risks and opportunities covered

The modelling of transition and physical risks and opportunities specifically covers the projected costs of policy action related to limiting greenhouse gas emissions as well as projected profits from green revenues arising from developing new technologies and patents. In addition, it captures acute weather impacts such as coastal and fluvial flooding and tropical cyclones, as well as chronic impacts from gradual changes in extreme heat and cold, heavy precipitation and snowfall or wind gusts. Regional sea level rise is an important input to the risk model and constitutes a key driver of coastal flooding impacts. It is important to note that the changes in acute and chronic impacts can also have a positive as well as negative effect on individual companies or instruments (see figure 29).

Figure 29: Risks and opportunities covered. Source: Based on MSCI[1].



Building Block Approach

To assess these risks and opportunities, a Building Block Approach has been adopted (see figure 30).

Figure 30: Building Block Approach. Source: Based on MSCI[1].

When assessing the impact of climate-related risks and opportunities associated with each scenario, different financial indicators need to be used and assumptions made. To assess the impact on market value of investments and the impact on reserves or premiums, for example, the following assumptions need to be considered:

1. The extent to which asset valuations, reserves and premiums already take account of the climate-related risks and opportunities in each scenario;
2. The likely timing of future changes to asset valuations, where not all of these climate-related risks and opportunities are currently considered;
3. Changes in our asset portfolio over time and the timing of such changes relative to the timing of any future market corrections to take account of these climate-related risks and opportunities;
4. The extent to which future costs can be passed on to customers and/or sales volumes could reduce or increase for specific lines of business; and
5. The impact on reinsurance market capacity and pricing, as well as the creditworthiness of reinsurers, and the implications for our reinsurance strategy.

1 Certain information ©2021 MSCI ESG Research LLC. Reproduced by permission.

Climate Scenario Analysis continued

Finally, to assess the overall impact of climate-related risks and opportunities across all scenarios, the relative likelihoods or probabilities of each scenario need to be assigned. To do this Aviva considered amongst other things the current scientific analysis of the likely trajectory of emissions as well as policy commitments made by countries to reduce emissions (see figure 31).

Transition risks and opportunities

The financial impact of transition risks and opportunities are calculated relative to the RCP 8.5 scenario (i.e. there are assumed to be no transition costs or opportunities in the RCP 8.5 scenario, where current emissions are presumed to continue to rise at the current rate). The calculation covers both emission reduction prices (see figure 32) and revenues from new technologies.

Figure 31: Most likely outcome based on where we are. Source: Aviva.

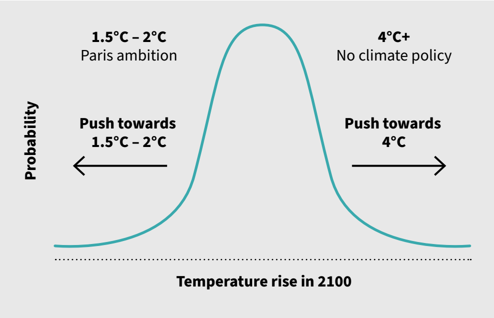
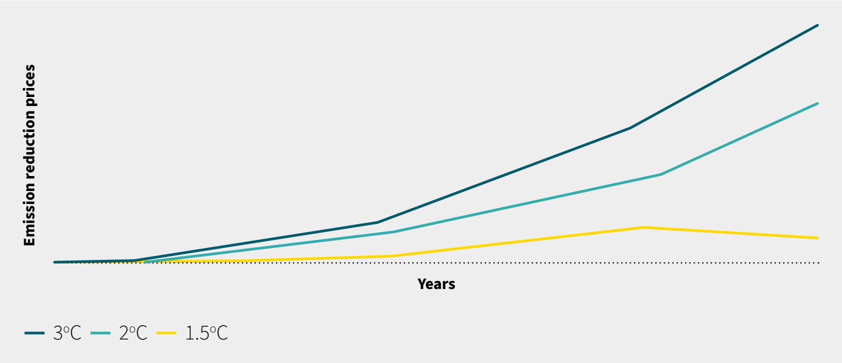


Figure 32: Emission reduction prices (2010 US$/$tCO_2e$). Source: Based on MSCI[1]



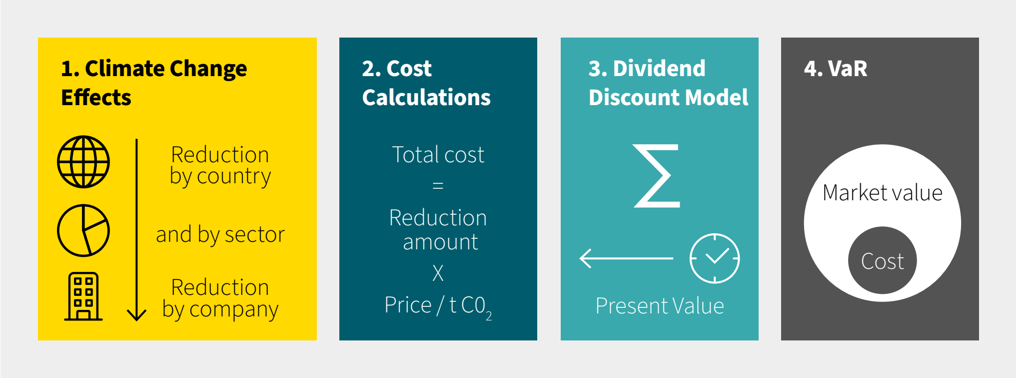
Investments

The following high level methodology (see figure 33) is used to assess the potential downside risk from different transition scenarios on our investments.

For both corporate bonds and equity securities the difference between the market value and the adjusted value after factoring in future climate change costs and/or revenues is measured (i.e. the impact relative to current climate conditions and emissions trajectory). To estimate the impact in a consistent way when a company has issued both shares and bonds, the Merton model[2] is used. This model enables the impact on a business as a whole to be translated into a change in value of its corporate bonds and equity securities. As both costs and opportunities are covered, the Climate VaR can be either negative or positive depending on the balance of future anticipated carbon-related costs and revenues for individual companies or instruments.

MSCI has also developed a methodology for estimating the transition exposure of property assets which we have used for both direct real estate and real estate-linked debt holdings. For infrastructure assets, Aviva has used the ClimateWise Transition Risk Framework to identify the key risk exposures across our portfolio of assets, taking into account how transition risks and opportunities vary by geography, sector and sub-sector to assess the potential impact in different climate scenarios.

Figure 33: High level methodology overview. Source: Based on MSCI[1].



1 Certain information ©2021 MSCI ESG Research LLC. Reproduced by permission.
2 Analysts and investors utilise the Merton model to understand how capable a company is at meeting financial obligations, servicing its debt, and weighing the general possibility that it will go into credit default.

Climate Scenario Analysis continued

Insurance liabilities

Aviva has assessed the impact on life insurance reserves from the potential reduction in mortality rates resulting from less air pollution in the aggressive and strong mitigation scenarios. This reflects an anticipated reduction in carbon emissions and an increase in electric vehicles replacing vehicles with internal combustion engines. For each transition scenario, there is potential for fewer deaths relating to air pollution. Although we note that this is very much dependent on the fuel mix generating electrical power for the grid. While waste-to-energy plants have similar particulate outputs to gas-fired power stations, biomass plants such as wood pellet-fired facilities, for their many positives, produce significantly more particulates than gas-fired power stations, for example[1].

On the general insurance side, transition risks and opportunities may also arise. For example, the wider adoption of electric vehicles and the rise of car-sharing and automated cars might decrease the pool of vehicles to be insured, leading to a decrease in claims frequencies but also premiums. However, these effects have not been included to date. We plan to extend our modelling to cover general insurance transition risks and opportunities over time.

Physical risks and opportunities

The financial impact of physical risks and opportunities is based on an assessment of both the expected costs in the RCP 8.5 scenario and the costs at a higher 95th percentile arising from hazards such as: extreme heat and cold, heavy precipitation and snow, coastal flooding, fluvial flooding, wind gusts, tropical cyclones, wildfire, and river low flow. We use the expected costs and the costs at a higher percentile to define a distribution of physical risk outcomes for each scenario and thus capture some of the more extreme potential physical effects of climate change while using a time horizon until the end of the century to maintain consistency with transition risk.

Investments

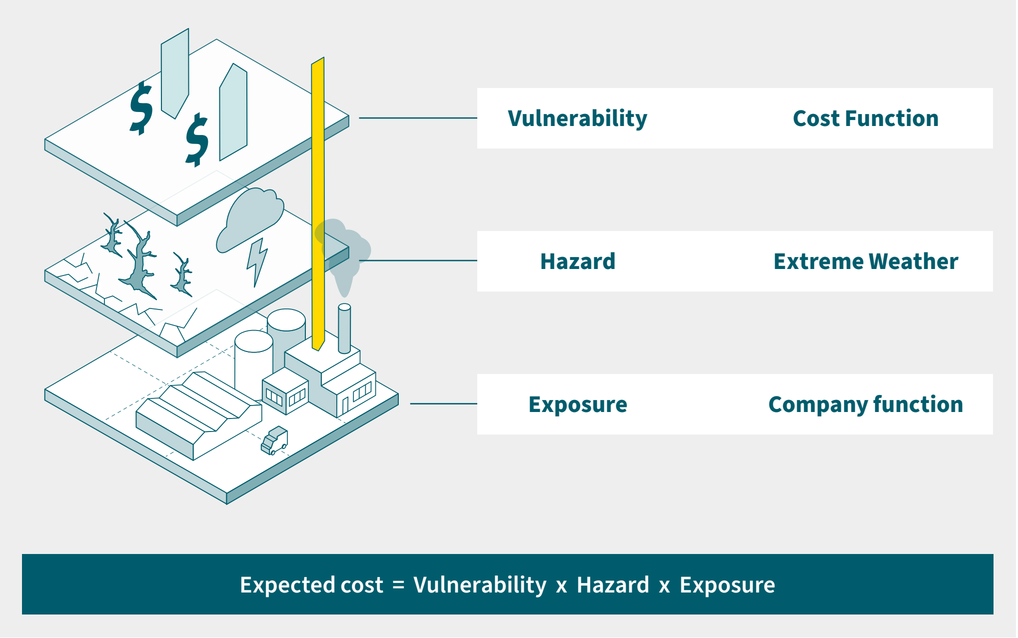
The physical risks on investments are generally going to be driven by the exposure of the facilities (buildings, plant, infrastructure) owned or used by the company that has issued the financial instrument, their 'facilities', and the supply chain they rely on for producing their end product. We use the high-level methodology shown in figure 33 to assess the potential physical risk from different scenarios on our investments in this regard.

The cost (in figure 34) is built up by mapping the facilities onto a world map, with measures that define the facility's exposure to different extreme weather hazards, and then combining this with a vulnerability function that converts the exposure and an assessment of the physical hazard impact in each scenario into an estimated monetary cost, per facility.

For both corporate bonds and equity shares, the difference between the market value and the adjusted value after factoring in aggregated facility costs and/or revenues is measured. The costs and/or revenues to a business are measured relative to an assessment of physical risks under current conditions as these are assumed to be already factored into the market value. This business impact is then translated into a change in the value of its corporate bonds and equity securities using the Merton model.

Aviva recognises that the current approach does not, for example, capture the impact on companies' supply chains nor necessarily demand for its products and services or potential mitigating impact of insurance. For example, in the case of a major car manufacturer their real assets will mainly include their factories and machinery and possibly their dealerships.

Figure 34: Impact modelling and expected cost estimate. Source: Based on MSCI[1].



1 Climate change effects on human health projections of temperature-related mortality for the UK during 2020s, 2050s and 2080s; Shakoor Hajat et al.; February 2014. https://jech.bmj.com/content/68/7/641

Climate Scenario Analysis continued

Their supply chain will be broad, complex and potentially geographically diverse and if disrupted it could adversely impact companies' costs and/or revenues. We will continue to work internally and with external partners to develop best practice in this area. For directly held real estate assets, real estate loans and infrastructure assets, we use the same approach described above. For directly held real estate the impact is carried directly against the property valuation. For real estate loans, we assess the physical climate change risk impact by running the stressed property value through our debt valuation models.

For sovereign bonds, the impact on the market value of a security is measured by assessing how a sovereign's rating could change as a result of the occurrence of different extreme weather hazards in each scenario. The following climate-related factors may impact sovereign debt: exposure and vulnerability to climate change; readiness and adaptation; ability to raise money for mitigation and post-disaster repair; ability to raise money via taxation and debt; reliance on foreign aid and support of the International Monetary Fund and other supra-national bodies. To assess a sovereign's vulnerability to climate change and readiness, the Notre Dame University's Notre Dame-Global Adaptation Initiative (ND-GAIN)[1] measure for country climate change risk has been used. We note that the assessment of sovereign debt is difficult because sovereigns are exposed to climate change via several vectors: government buildings and government-owned infrastructure, cost of emergency relief to areas affected by climate-related disasters, aid and rebuilding costs and the cost of acting as insurer of last resort. So, the ND-GAIN[2] data has been used to help support expert judgements about the appropriate stresses to apply to different sovereign bonds in our modelling at this stage. We will continue to work internally and with external partners to develop best practice in this area.

Insurance liabilities

The Climate VaR for life insurance risks calculates the impact on reserves of a change in mortality rates as a result of the occurrence of different extreme weather hazards in each scenario based on a review of academic literature linking climate change to potential changes in mortality rates.[3,4,5,6] For higher temperature scenarios, where climate change has dramatically taken hold, the picture is complicated. For example, it is possible that both summers and winters will be warmer or that seasons will in fact be more extreme. The latter is more likely to have an adverse impact and for the UK could plausibly result from the Gulf Stream changing its path and missing the UK.

On the general insurance side, the Climate VaR calculates the impact on premiums as a result of the occurrence of different extreme weather hazards in each scenario. The impact on premiums is then used to determine the impact on our business, considering the impact on pricing, sales volumes and our reinsurance strategy. Our scope of physical risks covers different regions (UK and Canada) and various perils (flood, freeze, subsidence, wildfire, winter storm, hail and severe convective storm) noting that the precise list of perils is region-dependent. We have worked with internal and external experts to consider how climate change could change the frequency and severity of UK flooding and leveraged our existing catastrophe modelling capability to assess the impact of this on premiums.

1 Certain information ©2021 MSCI ESG Research LLC. Reproduced by permission.
2 https://gain.nd.edu/our-work/country-index/
3 The Lancet Planetary Health, Volume 1, Issue 9, Projections of temperature-related excess mortality under climate change scenarios, Pages e360-e367; Antonio Gasparrini et al.; December 2017. https://www.sciencedirect.com/science/article/pii/S2542519617301560
4 Every breath we take: The lifelong impact of air pollution, Royal College of Physicians; Martin William et al.; 23rd February 2016. https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution
5 The Lancet Countdown on health benefits from the UK Climate Change Act: a modelling study for Great Britain, The Lancet; Jessica Elkin et al.; May 2018. https://www.thelancet.com/journals/lanpla/article/PIIS2542-5196(18)30067-6/fulltext
6 Hot and Bothered report, Club Vita, 4th July 2018. https://www.clubvita.co.uk/collaborative-research/hot-and-bothered

Additional links
> Dame-Global Adaptation Index

Climate Scenario Analysis continued

Aggregation of climate-related risks and opportunities

We aggregate all the component parts of our exposure to derive an aggregate view of the impact of climate-related risks and opportunities, using an approach that is motivated by our approach to modelling operational risk. This approach, which has been developed in conjunction with Elseware, a risk management and quantification expert consultancy, uses a Bayesian Network[1] methodology. The attraction of this approach is that we can combine a set of beliefs, expert judgements, internal data and external data to assess the potential impact of these risks, on an aggregated basis. We can then determine an overall Climate VaR for each scenario (see figure 35).

The impact distributions of each climate scenario are then combined to give a fully aggregated result across all four scenarios. This final step of aggregation uses the assigned likelihood given to each scenario taking into consideration amongst other things the current scientific analysis of the likely trajectory of emissions as well as policy commitments made by countries to reduce emissions (see figure 36).

Figure 35: Aviva's aggregation process for each scenario. Source: Aviva

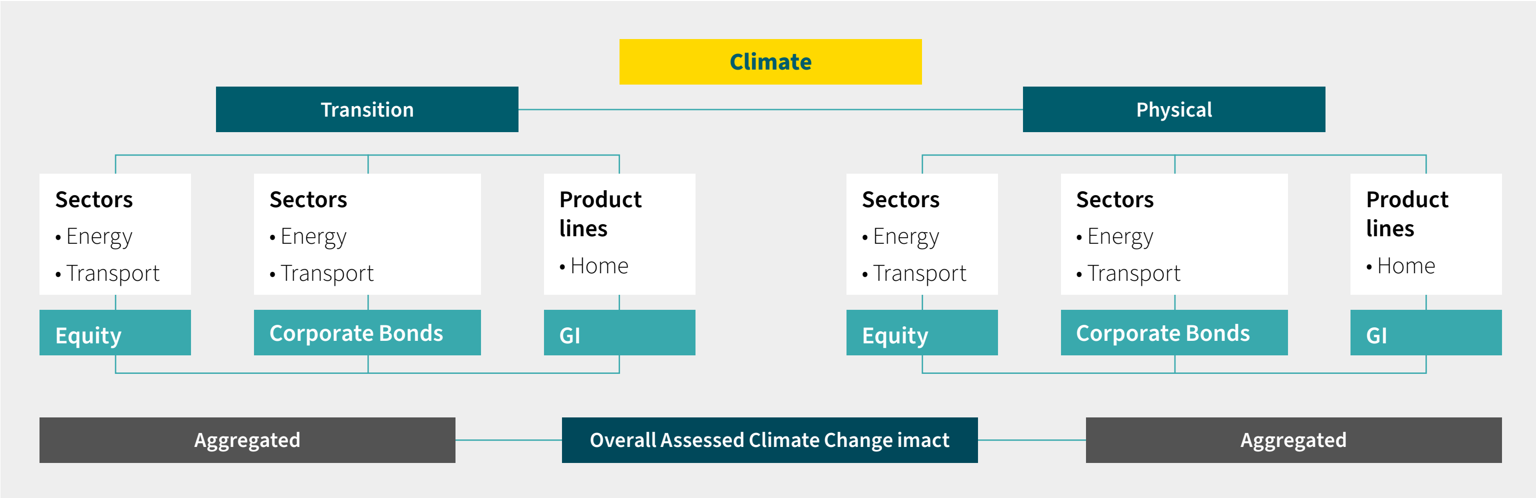


Figure 36: Overall assessed climate change impact. Source: Aviva

1 Probabilistic graphical model that represents a set of variables and their conditional dependencies via a directed acyclic graph.

Climate Scenario Analysis continued

Stress Testing

Aviva is one of ten major insurers participating in the Bank of England's 2021 Climate Biennial Exploratory Scenario[1] (CBES) exercise. This exercise tests the resilience of the insurance and banking industries to the physical and transition risks from climate change and examines the scale of adjustment needed in the coming decades for the system to remain resilient.

The Bank has specified three exploratory stress scenarios (two transition focused and one of rising temperatures) which Aviva has completed at a Group level. This exercise uses an extended 30-year modelling horizon and focuses on investment counterparty analysis and General Insurance property risk. The banks have provided macroeconomic, physical and transition risk and insurance-specific variables linked to the three climate scenarios. The scenarios build on the reference scenarios developed by the NGFS.

A high level description of the three scenarios is given below:

- Early policy action scenario: Where there is early and decisive action to reduce global emissions in a gradual way, policies are implemented relatively smoothly and financial markets price in the transition in an orderly fashion and take advantage of the opportunities. These actions are enough to limit global average temperature increases to below 2°C but this increase in global temperatures still leads to higher physical risks.
- Late policy action scenario: Where action to address climate change is delayed by ten years, a deeper adjustment is required to compensate for the delayed start, evidenced by a steeper increase in global carbon prices, dramatic shifts in company and consumer behaviour and sharp repricing of assets, leading to a macroeconomic shock. The climate target is met (global average temperature increases are limited to below 2°C); however achieving this brings significant disruption to the economy. Physical risks rise more quickly than in the early policy action scenario and transition risks are severe.
- No additional policy action scenario: Where no policy action beyond that which has already been announced is delivered. Therefore, the transition is insufficient for the world to meet its climate goal, there is limited technological transition and global average temperature increases substantially by 2080. Under this scenario, there are limited transition risks, but physical risks are significant.

We have submitted our response to phase 1 of the exercise to the Bank. Phase 2 will run in Q1 2022 with the Bank publishing its findings from the CBES exercise in May 2022.

The results of phase 1 have been shared with senior management and boards at both Group and BU level.

The exercise has been important in further developing the sophistication of our climate risk modelling and internal expertise, we have incorporated relevant elements (e.g. more granular General insrance physical risk modelling) into our Climate Value-at-Risk Measure.

Additional links

> Climate Biennial Exploratory Scenario

1 https://www.bankofengland.co.uk/paper/2019/biennial-exploratory-scenario-climate-change-discussion-paper

Assets Under Management (AUM): Context

AUM represents all assets managed or administered by or on behalf of the Group's subsidiaries, including those assets managed by Aviva Investors and by third parties. AUM include assets that are reported within the Group's statement of financial position (which can be grouped into policyholder assets, participating fund assets and shareholder assets) and those assets belonging to external clients outside the Aviva Group which are therefore not included in the Group's statement of financial position. The classification between policyholder, participating and shareholder reflects the type of fund to which investment returns are credited, with both policyholders and shareholders having an interest in participating funds. Participating fund assets are equivalent to with-profit funds.

2021	Policyholder assets £m	Participating fund assets £m	Shareholder assets £m	External funds £m	Total £m
Assets managed on behalf of Group's subsidiaries					
Investment property	4,650	1,941	412	—	7,003
Loans	1,777	3,383	33,464	—	38,624
Debt securities	42,407	27,105	63,739	—	133,251
Equity securities	85,186	8,808	1,175	—	95,169
Other investments	28,521	4,943	3,077	—	36,541
Cash and cash equivalents	5,474	1,349	5,662	—	12,485
Other	5,372	662	158	—	6,192
	173,387	48,191	107,687	—	329,265
Assets managed on behalf of third parties[1]					
Aviva Investors	—	—	—	52,620	52,620
UK Platform[2]	—	—	—	43,101	43,101
Other	—	—	—	544	544
Less: third-party funds and UK Platform included in assets managed on behalf of Group's subsidiaries	—	—	—	(22,836)	(22,836)
	—	—	—	73,429	73,429
Total	173,387	48,191	107,687	73,429	402,694
Total %	43.1%	12.0%	26.7%	18.2%	100.0%
2020 Total	187,079	145,415	113,130	89,066	534,690
2020 Total %	35.0%	27.2%	21.2%	16.6%	100.0%

1 AUM managed on behalf of third parties cannot be directly reconciled to the financial statements.
2 UK Platform relates to the assets under management in the UK Savings & Retirement business.

Comparatives

2020 AUM totals includes the balances associated with the discontinued operations for which disposal transactions completed in 2021. This equates to total AUM of £153,432 million.

If you have any questions, please contact
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