It takes AVIVA

Aviva Canada

2022 Climate-related Financial Disclosure

About Aviva Canada

Who we are

Aviva Canada is one of the leading property and casualty insurance groups in the country, providing home, automobile, lifestyle, and business insurance to 2.4 million customers. A subsidiary of UK-based Aviva plc, Aviva Canada has more than 4,000 employees focused on creating a bright and sustainable future for our people, our customers, our communities, and our planet. In 2021, Aviva announced its ambition on a global level to become a net-zero carbon emissions company by 2040, the most demanding target of any major insurance company in the world.

Our Canadian heritage

Aviva's origins can be traced back to England more than 300 years ago. We have deep roots in Canada too. In 1835, the first Canadian-based Aviva heritage company – Canada Accident Assurance Company – was formed. Over the 20th century, many Aviva predecessor insurance companies merged, combined their strengths and changed their names. On May 5, 2003, the CGU Insurance Company of Canada became Aviva Insurance Company of Canada.

It all starts with our customers. Make the most out of life. Plan for the future. Have the confidence that if things go wrong, we'll be there to help put them right.

It takes Aviva.

About this report

This report has been prepared in accordance with the Taskforce on Climate-Related Financial Disclosures (TCFD).

This report complements Aviva Canada's Sustainability Report and Public Accountability Statement, providing a summary of Aviva Canada's sustainability and Environmental, Social and Governance (ESG) performance for the fiscal year January 1 to December 31, 2022.

Our reports also complement Aviva plc's Climate-related Financial Disclosure 2022, Annual Report & Accounts 2022, and Sustainability Report 2022.

Our reporting approach

The content of this report is focused on the requirements of Aviva Canada's stakeholders, relevant regulations, and sustainability rating and benchmarking providers. It focuses on the concepts and key performance indicators (KPIs) that reflect Aviva's most material climate issues and has been prepared in accordance with the Taskforce on Climate-related Financial Disclosures (TCFD).

Aviva believes clearly stated ambitions and performance information are essential for enhancing the quality, reliability and comparability of climate reporting. Aviva is committed to disclosing meaningful data to improve our climate disclosures for internal decision making and for our external stakeholders. As an investor, Aviva also relies on this type of information to integrate sustainability into our core business activities. As part of this commitment, Aviva has changed the structure of the Targets and Metrics section, covering material frameworks and methodologies which Aviva considers important in terms of communicating our approach to calculate emissions. Aviva Canada's TCFD report follows the same methodology. For more details, see the Targets and Metrics section of Aviva plc's TCFD report. Climate metrics include estimates of emissions and climate change and forward-looking metrics such as ambitions, targets, climate scenarios and climate projections and forecasts. For more details, see the Cautionary Statements in Aviva plc's report.

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Foreword

Aviva Canada's TCFD report brings together its disclosure in accordance with the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD). Aviva Canada has set out how we have complied in the TCFD compliance summary. Aviva Canada's report should be read in conjunction with the Cautionary Statements.

Aviva Canada's TCFD report 2022 was approved by the Canadian Board on July 26, 2023.

Assurance approach

Aviva Canada appointed PwC Canada to provide independent assurance over three sustainability metrics, indicated with AS for reasonable assurance in this report.

Aviva Canada covers 100% of its subsidiaries. All financial figures are expressed in Canadian dollars unless otherwise stated.

This report sets out how Aviva Canada incorporates climate-related risks and opportunities into our governance, strategy, risk management, and metrics and targets, in line with the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD), published in October 2021. The metrics included in our Canadian TCFD disclosure were assured to a 'Reasonable' Level of assurance (akin to the same level of comfort given in a financial audit). This is recommended for all companies by the TCFD. We support the critical work of the International Sustainability Standards Board (ISSB) in developing and setting global sustainability standards that aim to realize high quality, transparent, reliable and comparable reporting by companies on climate and other ESG issues. This will help ensure that the right strategic decisions are made across the economy, to address climate change and support a more coordinated, smoother transition. 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.

Globally, we use a variety of metrics and tools to manage and monitor our alignment with global or national targets on climate change mitigation, and to assess the potential financial impact of climate-related risks and opportunities on our business. In this Canadian disclosure, we cover the three metrics that are disclosed on a local business basis, by Aviva Canada: 1) weighted average carbon intensity, 2) investment in sustainable assets, and 3) weather-related losses. For details on the remaining metrics that we report on an Aviva-wide basis only, please refer to Aviva plc's 2022 Climate-related Financial Disclosure and Reporting Criteria document.

CEO message

We are living in a climate emergency.

The latest Intergovernmental Panel on Climate Change (IPCC) report found that with greater urgency and more immediate ambitious action, we can still secure a livable sustainable future for all. We must move faster to limit emissions and at the same time prepare for more extreme weather in the future.

As a leading property and casualty insurer, we see the devastating impact of climate change on our customers every day. As I'm writing this, our people are on the ground helping customers affected by the wildfires in Alberta and Nova Scotia. This is what we do. We are at the forefront of tackling climate change – getting customers back on track after severe weather events, offering build back options such as climate-resilient materials and handling claims sustainably. We're also making available more climate-conscious products, including incentivizing personal insurance customers to switch to hybrid or electric vehicles with a premium discount.

Banks and insurance companies will soon need to provide disclosures on their climate-related risks and exposures*. At Aviva Canada, we chose to voluntarily disclose and report ahead of this requirement, publishing our first Sustainability Report, including a TCFD chapter, last year. This is because there's enormous value in disclosure as part of the journey to a more sustainable future. Understanding the data is a fundamental first step to taking effective action. Incomplete data is not a reason to hold off disclosure reporting.

For our 2022 TCFD report, we've once again assured the following metrics to a "reasonable" level of assurance by PwC**. They are: 1) weighted average carbon intensity, 2) investment in sustainable assets, and 3) weather-related losses.

We'll continue to work with governments, companies and partners of the projects we invest in to encourage greater disclosure. It's easy to be impatient, as I am, in wanting to see more being done to tackle climate change and biodiversity loss. I'd love to see peers and other businesses take what Aviva is doing and try to beat us, set the bar higher or take actions that will be more impactful. Healthy competition is a good thing and can accelerate Canadians moving to a low to zero-carbon economy.

For us at Aviva, we're committed to evolving and improving our reporting, to give interested stakeholders the most useful information about our business. We see it as a win-win. The metrics and data will help us better understand our own risks and opportunities, which in turn, will help guide our actions towards our ambition to be net zero by 2040.

Jason Storah
Chief Executive Officer, Aviva Canada

* Canada moves toward mandatory climate disclosures: osfi-bsif.gc.ca/Eng/osfi-bsif/med/Pages/b15-nr.aspx.

** The metrics included in our Canadian TCFD disclosure were assured to a 'Reasonable' Level of assurance (akin to the same level of comfort given in a financial audit), recommended for all companies by the TCFD.

Overview

Purpose

Our purpose is to be with our customers today for a better tomorrow. We will achieve this through our corporate strategy, and by acting responsibly on the sustainability issues that are most important to our business and society.

Globally, we have been looking after customers for 325 years. We are deeply invested in our people, our communities and the planet. We're here to be with people today as well as working for a better tomorrow.

Strategy

We have set clear priorities to become the leading insurer in Canada – the top choice for customers, distributors and our people. Our strategy is aligned to Aviva plc's strategic pillars.

Growth

Evolve and diversify our portfolio by growing commercial lines, pursuing new profit pools, delivering growth at scale and top-decile profitability.

Customer

Set a new industry standard for customer experience and delivering fast and fair claims settlement.

Efficiency

Build best-in-class capabilities by creating a leading data and analytics practice and modernizing our technology.

Sustainability

Lead the industry on sustainability using our scale to drive customers, businesses, and governments to act with greater urgency in the transition to a low-carbon economy.

Values

Our values help us deliver our ambitions. The values of Care, Community, Commitment and Confidence help guide the decisions we make as individuals and as an organization. Aligned to our Purpose and our Strategy, they define what it means to be part of Aviva.

Our Canadian climate story

Aviva's climate goals

Our ambition is to become a net-zero carbon emissions company by 2040*. Read more about our climate goals at www.aviva.com/climate-goals.

Our progress so far

- Aviva becomes the first major insurer to announce net zero by 2040 ambition
- achieved 43.3% reduction of Aviva plc's absolute Scope 1 and Scope 2 operational emissions from 2019 base year
- Aviva plc is a founding member of the Net Zero Insurance Alliance (NZIA). Aviva Canada is also represented
- stopped underwriting insurance for companies making more than 5% of their revenue from coal or unconventional fossil fuels, unless they have signed up to Science Based Targets initiative (SBTi)
- published Biodiversity Policy
- achieved 100% renewable electricity for all Canadian offices, ahead of our 2025 goal

New in 2022

- Aviva plc released first Climate Transition Plan
- Aviva Canada published its first annual Sustainability Report, including a TCFD chapter
- Aviva Canada launched its inaugural Climate Day in June where over 1,100 employees came together to take action on climate, planting trees
- Aviva plc, with contributions from Aviva Canada, published "one-year-on" Biodiversity Report
- Aviva plc, including Aviva Canada, attended COP15 on biodiversity
- Aviva plc, including Aviva Canada, achieved validation of its science-based targets (SBTs) by SBTi

By 2023

Invest $350M in sustainable assets

By 2025

Cut 25% of the carbon intensity in our investments

Use 100% electric/hybrid new vehicle leases for our Canadian fleet

By 2030

Cut 60% of the carbon intensity in our investments

Have net-zero operations and a net-zero supply chain

£100M committed to nature-based solutions

By 2040

Be a net-zero company across our value chain, with net-zero carbon investments and insurance

* This will cover shareholder and policyholder assets where we have control and data; and the main asset classes of core markets (credit, equities, direct real estate and sovereign debt). We will be able to expand this further as new data and methodologies become available. For more details please see www.aviva.com/climate-goals.

Our strategy is encapsulated in our Climate Transition Plan

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

As a leading insurer in Canada, we have a responsibility and a key role in contributing to the transition to a low-carbon economy. In March 2021, Aviva including Aviva Canada 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.

Aviva's global 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.

Climate Transition Plan

In March 2022 Aviva plc set out the next steps 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 decarbonization through our investments and insurance activities.

To execute on our ambition, Aviva plc, including Aviva Canada, developed its initial Climate Transition Plan, in line with TCFD guidance, the Glasgow Financial Alliance for Net Zero (GFANZ) recommendation on best practices on transition plans, and Institutional Investors Group on Climate Change (IIGCC) principles.

Aviva's plan uses five building blocks to describe how we intend to minimize risks and capture opportunities.

1. **Strategy and ambition:** details commitment, ambition, and scope of net-zero pledges.
2. **Methodology:** defines the approach to identify, measure and monitor climate-related ambitions with reference to investments, insurance, and operations.
3. **Action plans:** provides clarity on the measures needed to achieve defined ambitions. This supports engagement with companies invested in, underwritten and in our supply chain.
4. **Climate risk management:** defines the risk appetite and ensuring alignment with the Climate Transition Plan.
5. **Target operating model:** defines roles and responsibilities to ensure the execution of the Climate Transition Plan and create climate cultural awareness throughout the organization.

1 Scope will be UK, Ireland and Canada, all main asset classes (credit, equities, direct real estate, and sovereigns) when methodology developed; including shareholder assets and policyholder assets where we have decision making control and data.

Our net-zero ambition

We are focused on five key areas to deliver on our climate strategy:

Accountability and leadership: Ensuring Aviva leads from the front through alliances and our actions to meet net zero

Decarbonizing our investment portfolio: Reducing financed emissions in our investment portfolio and investing in sustainable assets

Insuring a net-zero future: Underwriting renewable energy infrastructure and proposing a methodology for net-zero underwriting

Targeting operations and supply chain: To be net zero by 2030 through the SBTi

Embedding climate in our culture: By educating our employees on their role in the just transition to a low-carbon future

Impact quantification

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. Aviva has made several methodology improvements in 2022 and will continue to enhance our capabilities in line with industry developments and standards.

While Aviva is working towards our global net-zero 2040 ambition, we acknowledge that Aviva's group of companies have relationships with businesses and investee companies that may be associated with significant emissions. Over time our work will include reviewing these arrangements with the aim of aligning these to our net-zero 2040 ambition.

2022 key highlights

Climate action

$449M
Invested in sustainable assets, ahead of our 2023 target

100%
Renewable electricity for all offices, ahead of our 2025 target

Embedding sustainability

50/50
First major financial services company in Canada to achieve 50/50 male-female split for VP and above

35%
Visible minorities at the VP level and above

Building stronger communities

153K
Canadians helped

$3.6M
Invested in communities

8,835
Volunteer hours

$210K
In employee donations

$197K
In matched corporate donations

2022 climate highlights

What we set out to do	What we achieved
Accountability & leadership	
Sign up to the SBTi[1]	• gained validation of targets from the SBTi
Lead and influence	• as part of the Sustainable Finance Action Council (SFAC), provided recommendations to the Government on prioritization pertaining to disclosures – that Canada should aim to achieve near-complete coverage of the Canadian economy with disclosures aligned to international standards
Lead, report and disclose	• published first Sustainability Report, including a TCFD chapter, ahead of mandatory requirements • TCFD disclosed three Canadian metrics, assured to a "reasonable" level of assurance ◦ weighted average carbon intensity ◦ investment in sustainable assets ◦ weather-related losses
Tackle biodiversity loss	• Aviva Canada's CEO participated in several speaking events at COP15, pushing for collaboration with governments and businesses • contributed to Aviva plc's Biodiversity Report
WWF-Canada partnership and Nature and Climate Grant Fund	• supported 6 organizations for the 2022–2023 field season. Impact made: ◦ 302+ hectares of wetland, grassland, shoreline, agricultural and former industrial sites restored ◦ 61,714 trees and shrubs planted ◦ over 51 species at risk populations benefiting from restoration
Nature-based carbon removal projects to support us in sequestering our residual emissions	• set aside $23M (of global budget of €100 million) for Canadian nature-based carbon projects

What we set out to do	What we achieved
Decarbonizing our investment portfolio	
Set ambitious targets for our Canadian investment portfolio including: • reduction in carbon intensity of investments of 25% by 2025 and by 60% by 2030 • $350M invested in sustainable assets by 2023	• 44% cumulative reduction in carbon intensity since 2019 • $449M of sustainable assets purchased ahead of our 2023 target
Insuring a net-zero future	
Work with industry to develop net-zero underwriting methodology with NZIA	• contributed to the development of the NZIA target setting protocol
Supporting customers through transition to net zero	• helped TransAlta, a customer, to transition, with a surety bond to support the reclamation of its coal mine
Offering climate-conscious products	• introduced a new electric vehicle (EV) insurance solution that offers features and benefits to personal insurance customers to make EV adoption easier • offers up to $1,000 to install a backwater valve or sump pump following damage from a water claim • established a renewable energy working group across underwriting, client relationship management, and risk management ◦ wrote six new accounts, totaling approximately $7M in the first year ◦ piloted our first parametric insurance product for small and medium businesses in select industry segments

1 The SBTi is a collaboration between United Nations Global Compact, CDP (a global disclosure system), World Resources Institute and Worldwide Fund for Nature.

Targeting operations and supply chain

What we set out to do	What we achieved
Get suppliers signed up to the SBTi	• established interim net-zero supply chain target of supplier spend signed up to the SBTi • created a strategy and roadmap for engaging suppliers to support Aviva in our net-zero journey by signing up to SBTi and supporting sustainable claims management processes
Renewable energy and emission reductions	• met RE100 commitment of achieving 100% renewable energy two years early
Data-driven office buildings	• achieved reduction in power demands across all buildings, resulting in lower energy usage, saving us costs and reduced impact on the environment • awarded the Green Apple Environmental Award for this smart building optimization work with our partner, Carbon Intelligence, in Oakville and Markham offices
Accelerate the use of electric or plug-in hybrid vehicles in corporate fleet • deliver all new company car leases through battery electric, plug-in hybrid (PHEV), or hydrogen fuel cell electric vehicles by 2025	• added three PHEVs to our corporate fleet in 2022. We continue to explore solutions to ensure we meet our commitment
Eliminate single-use plastics from our operations	• remains a short-term challenge that we continue to address. Looking for solutions to eliminate single-use plastic once again in 2023

Embedding climate in our culture

What we set out to do	What we achieved
Involve our people in taking climate action and tackling biodiversity loss	• launched inaugural Climate Day in June 2022 where over 1,100 of our people came together to take action on climate, planting trees • partnered with 18 of our brokers, suppliers and landlords across the country to plant native plant gardens at their offices • offered a $50 subsidy to our people to purchase native plants including seeds, seedlings, flowers, trees and shrubs • over 1,000 of our people took action and planted a native plant in their own gardens • hosted webinars on native plants and native seed harvesting
Provide climate training for our people	• 100% of our people took the training module

TCFD compliance summary

The TCFD outlines 11 recommendations for organizations to include in their climate reporting. The table below directs to the relevant section where the 11 TCFD recommendations are covered in this report for Aviva Canada. While we have complied with the 11 recommendations, we continue to work towards expanding the scope of our targets and metrics, developing the methodology of our climate scenario analysis and enhancing our disclosure in this area. Please also refer to Aviva plc's TCFD report 2022 for more information.

TCFD pillars	TCFD recommended pillars	Sections the disclosures are included in
Governance Disclose the organization's governance around climate-related issues and opportunities	a. Describe the board's oversight of climate-related risks and opportunities	• Governance – Board oversight, management's roles and responsibilities (see pages 15–17)
	b. Describe management's role in assessing and managing climate-related risks and opportunities	• Governance – Board oversight, management's roles and responsibilities (see pages 15–17)
Strategy Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's business, strategy and financial planning where such information is material	a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long-term	• Our climate strategy, risks and opportunities (see page 21)
	b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	• Our climate strategy, risks and opportunities (see page 21) • Our strategic focus (see page 26)
	c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	• Our climate Value At Risk (VaR) measure (see page 25)
Risk management Disclose how the organization identifies, assesses, and manages climate-related Risks	a. Describe the organization's processes for identifying and assessing climate-related risks	• Risk management (see page 42) – refer to 'Our process for identifying and assessing climate-related risks'
	b. Describe the organization's processes for managing climate-related risks	• Risk management (see page 42) – refer to 'Our process to manage climate-related risks'
	c. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	• Risk management (see page 42) – refer to 'Our process to manage climate-related risks'
Targets and metrics Disclose the targets and metrics used to assess and manage relevant climate-related risks and opportunities where such information is material	a. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	• Our metrics to assess climate-related risks and opportunities (see page 45)
	b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	• Decarbonizing our investment portfolio (see page 30) • Targeting our operations and supply chain (see page 35) • Our metrics to assess climate-related risks and opportunities (see page 45)
	c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	• Our 2022 climate highlights (see pages 11–12) • Looking ahead (see page 57) • Our metrics to assess climate-related risks and opportunities (see page 45)

Governance for climate risk is embedded in Aviva's governance framework

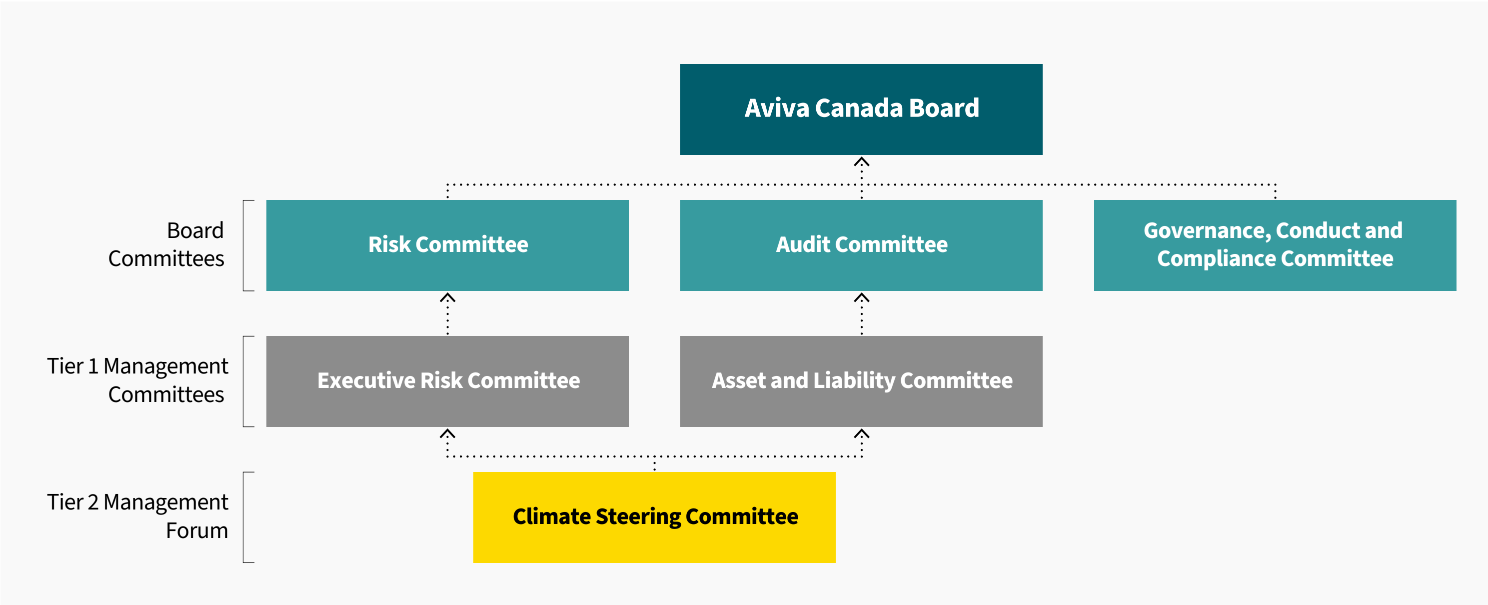
Governance

We're embedding the consideration of climate change across our organization.

Aviva Canada has a strong governance framework, with effective and robust controls. We have integrated climate into our risk appetite framework, defined our climate risk preference and incorporated climate risks into our business plans to facilitate risk-based decision making. It allows the Board and its committees, management committees and senior leadership to integrate climate-related risks and opportunities into our strategy, decision making and business processes.

The governance structure, primary committees and their respective roles and responsibilities are summarized in Figure 1 below. Our sustainability team provides advisory services internally.

Figure 1: Aviva Canada's climate governance structure



Board	Roles and responsibilities	Activity during 2022
Aviva Canada Board	The Board provides leadership of Aviva Canada within a framework of prudent and effective controls which enables risks (including climate-related risks and opportunities) to be assessed and managed.	The Board received, and upon recommendation of the Audit Committee, approved the 2021 Aviva Canada Sustainability Report, highlighting Aviva Canada's key initiatives around Acting on Climate Change, Building Stronger Communities, and Embedding Sustainability. The Board approved the 2023-2025 Business Plan which includes climate metrics and targets. The Board also approved climate risk appetites and associated thresholds that are monitored by the risk team through quarterly reporting.
Board Committees		
Risk Committee	The Risk 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 regulatory requirements.	The Risk Committee met quarterly to review, manage, and monitor all aspects of risk management including climate-related risks. During the year, the Committee approved and recommended the climate risk appetite to the Board, monitored progress made in meeting targets (via the Chief Risk Officer's report), and discussed the Own Risk and Solvency Assessment (ORSA) Report.
Audit Committee	The Audit Committee working closely with the Company's Risk Committee, is responsible for: • monitoring the integrity of the Company's financial statements and the effectiveness of the systems of control over financial reporting, including having comfort in respect of Aviva Group whistleblowing provisions; • monitoring the effectiveness, performance, independence and objectivity of the internal audit function, the external auditors and other oversight functions of finance and Chief Actuary; • oversight and management of investment activities of the Company in accordance with Section 165(2)(h) and Section 492 of the Insurance Act, and • working with the Risk Committee, requiring management to implement and maintain appropriate internal control procedures.	In 2022, the Audit Committee reviewed and approved the 2021 Aviva Canada Sustainability Report and recommended it for approval by the Board. The report included Aviva Canada's responses to the TCFD's recommendations, and three metrics including weighted average carbon intensity of the investment portfolio, investment in green assets*, and weather-related losses. The Audit Committee also reviews all disclosures in the financial statements to ensure compliance with applicable standards and requirements.
Governance, Conduct and Compliance Committee (the "Governance Committee")	The purpose of the Governance Committee is to assist the Board to oversee the governance framework of the Company, Aviva Canada pension plans and in performing the duties in the Insurance Companies Act related to Self-Dealing, Conflicts of Interests, Privacy and Use of Confidential Information. The Governance Committee also assists the Board in the oversight of Conduct Responsibilities including overseeing the brand and reputation of the Company.	The Governance Committee received quarterly or regular reports on complaints handling, conduct framework and regulatory compliance matters that enable the Committee to monitor compliance with requirements of applicable policies, standards and regulations and the conduct framework of third parties.
Asset and Liability Committee	This Committee supports the Chief Financial Officer to ensure we optimize opportunities to make best use of capital across Aviva Canada while ensuring there is appropriate oversight in relation to the management of: (1) the balance sheet; (2) financial risk exposure; (3) capital management decisions and management of financial risks and (4) position against the risk appetites as set by the Aviva Canada Board. Importantly, their mandate includes responsibility to review and approve climate-related financial disclosures.	The Committee met quarterly and added the monitoring of the investment portfolio's carbon intensity and green assets holdings within its Terms of Reference.
Executive Risk Committee (ERC)	This Committee provides oversight, challenge, support and advice on the risk profile and exposures in line with the applicable risk appetite and regulatory requirements. ERC is responsible for the ongoing maintenance of an effective Risk Management Framework that is proportionate to the nature, scale and complexity of the risks facing the business. As part of this responsibility, ERC reviews and challenges assessment of impact to the risk profile from climate change, including associated management actions.	This Committee met quarterly and received progress updates from the Climate Steering Committee. The Committee also discussed the Business Plan Risk Opinion and alignment to the broader sustainability commitment alongside monitoring the metrics, targets and mitigating actions throughout the year.
Climate Steering Committee	This Committee's responsibility is business-wide delivery of our climate ambition, which includes identifying, assessing and managing climate-related risks and opportunities. It has Executive Committee members who each hold accountability for delivery of our climate commitments.	The Committee met quarterly to provide strategic direction to our business-led Climate Working Groups that cover the core areas of our business, our investments, engagement with our people and our community impact. This Committee reviewed and approved the development and progress of each Working Group's action plans and ensured appropriate management support and resourcing.

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.

* The previously reported investment in green assets metric has been renamed to investment in sustainable assets in the current year.

Management's climate roles and responsibilities

Like all property and casualty insurers, Aviva Canada ensures dialogue and compliance with all federal and provincial regulators. In 2022, Aviva Canada responded to and provided recommendations to the public consultation relating to climate risk management (B-15) undertaken by the Office of the Superintendent of Financial Institutions (OSFI). Key recommendations included the need to be aligned and consistent with international guidelines and working together to understand current gaps in climate-related data and formulate a plan to address them.

Below outlines the roles and responsibilities of our senior executives:

Chief Executive Officer is accountable for:

- Compliance with legal, regulatory, corporate governance, social, ethical and environmental principles.
- Ensuring that climate-related risks and opportunities, as well as, where relevant, other sustainability risks are considered as part of the investment, underwriting, product design, pricing and claims processes through clearly defined roles and responsibilities in regard to climate risk.
- Identifying and managing the financial risks from climate change and the development and oversight of Aviva's Sustainability Ambition execution.

Chief Financial Officer (CFO) is responsible for:

- 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 monitoring these risks.
- Assisting the Board with developing and maintaining an appropriate approach to disclosure and regulatory reporting of the financial risks from climate change.
- Producing and monitoring the key measures within the climate risk appetite (quarterly) and against plan.

Chief Risk Officer (CRO) is responsible for:

- Annual review and approval of climate risk appetite, alongside other financial and non-financial risk appetites. Review and challenge, where appropriate, the risk monitoring processes put in place by the management and the conclusion drawn from these processes to ensure that these will provide sufficient insight to effectively manage the risks within the business.
- Ensuring climate-related risks and opportunities are identified, measured, monitored and managed through our risk management framework and in line with our risk appetite.
- The embedding of climate-related risks and opportunities is integrated into our business-as-usual activities across our three lines of defence.[2]

Leadership teams across Aviva Canada are responsible for managing those areas of the business which may affect or be affected by climate change. For example, our CFO is accountable for ensuring the delivery of our 2030 net-zero operations and supply chain commitments, including property and energy decarbonization and alignment of procurement practices to the SBTi.

2 This sets out the risk management responsibilities across the business.

Internal audit review

In 2022, Aviva Canada's Internal Audit team completed a risk-based review relating to Aviva's Sustainability Ambition (ASA), focusing on the effectiveness of governance and plans to support the execution of ASA initiatives at the market level. This provided assurance that there had been progress in implementing the business cases for key ASA initiatives.

Remuneration

We believe we can make our climate and wider ESG agenda a key differentiator for Aviva Canada.

In 2021, Aviva plc's 2021-2023 Long Term Incentive Plan was approved at the Annual General Meeting, 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 utilize 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.

Climate training

Aviva Canada continues to build the skills of our people with respect to climate considerations to ensure appropriate resources and expertise are developed to inform and manage the associated risks and create climate cultural awareness.

Annually, as part of our Essential Learning training[3], our people complete mandatory climate training to learn about its implications for our planet and our business. In 2022, 100% of our Canadian employees completed the climate training. We also continued to develop climate training available on request to all our people via Aviva University and provide access to the United Nations Global Compact Academy learning. More in-depth training has also been deployed to those who hold direct responsibilities to identify, manage, measure and report climate-related risks and opportunities.

Our Tackling Climate Change Together guide for employees equips them with the information they need to contribute at work, at home and in their community.

3 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. The full definition is set out in the Aviva Reporting Criteria 2022.

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

Actuarial
Responsible for developing climate methodology, risk appetite and calibrations.

Asset and liability management (ALM)
Ensures the ALM position is effectively managed, and the Strategic Asset Allocation is in line with the business plan.

Asset management
Incorporates Environmental, Social and Governance considerations into investment management.

Business planning
Sets up the business plan in line with the strategy, climate transition plan and risk appetite.

Capital management
Ensures climate considerations are part of the market/credit risk assessment and performs relevant scenario analysis.

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

Corporate affairs
Enables and executes our sustainability strategy and action plan, influences the integration with the business, advocates for climate policy, and supports non-financial reporting and communications.

Enterprise risk management
Ensure climate considerations are part of our risk processes, including risk opinion and Own Risk and Solvency Assessment (ORSA).

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

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

Investment
Ensures the end-to-end investment process factors climate considerations.

Legal
Supports business with understanding climate-related legal requirements.

Operations (including IT, Property and Facilities)
Ensure our operational carbon emissions are in line with our ambitions, focusing on reducing our environmental impact through energy efficiency and clever use of technology, using renewable energy sources and minimizing the carbon intensity of our car fleet.

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

Pricing/Product development
Incorporates climate considerations in product pricing and development; to further develop climate-conscious product 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
Ensures best practices are in line with the SBTi.

Reinsurance
Incorporates climate change considerations in reinsurance arrangements.

Sales and marketing
Incorporates climate change considerations into how our products are marketed to brokers and customers.

Strategy
Considers climate change in strategy development.

Underwriting
Incorporates climate change considerations e.g. Ensure our underwriting activities support our goal to be a net-zero insurer by 2040.

Sustainability is one of Aviva's four strategic priorities

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.

- **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 organizations.
- **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.

Risk horizons

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

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 our overall business plan, the impact of these risks and opportunities is considered over a medium time horizon (three to five years).

Climate-related risks and opportunities for the business

In the medium to long-term there is a risk that disruption to the general insurance market, for example a move to electric and autonomous vehicles and sharing economy or changes in extreme weather could impact product design and demand, as well as affordability of insurance products in some cases. But there is also an opportunity to 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. Further details on these and other risks and opportunities are provided throughout this report.

Aviva plc models the impacts of climate change on the business under different temperature pathways using climate scenario analysis. 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 climate metrics help us to manage the potential financial impact of climate-related risks and opportunities, and these are set out in the Targets and Metrics section.

Science-based targets (SBTs)

In 2022, we achieved validation of our SBTs from the SBTi – set out below. Achieving validation is part of our climate roadmap and our Climate Transition Plan. Note that the targets and coverage % below include all in-scope external client assets managed under discretionary mandates.

Aviva's SBTs	Key performance indicator identified
Aviva, including Aviva Canada, commit to reduce absolute Scope 1 and 2 GHG emissions by 90% by 2030 from a 2019 base year	% reduction in absolute Scope 1 and 2 emissions from 2019 base year
Aviva, including Aviva Canada, commit that 70% of its suppliers by spend covering purchased goods and services set SBTi validated targets by 2025	% of suppliers by spend covering purchased goods and services that have signed up to SBTi

Net-Zero Asset Owner Alliance (NZAOA) targets

Aviva Canada has set a portfolio target through the UN-convened NZAOA. This target is outlined below along with the KPI which are used to track it.

NZAOA based target	Key performance indicator identified
25% reduction in weighted average carbon intensity for the listed equity and corporate bonds portfolio by FY25 from a FY19 base year	% reduction in listed equity and corporate credit WACI by revenue from 2019 base year

Embedding climate-related planning into the Aviva business planning process

Aviva Canada develops three-year business plans on an annual basis, to ensure our strategy is appropriately translated into operational and financial plans to secure delivery of our near-term ambitions and set the path towards our longer-term strategic goals.

In developing these plans, Aviva Canada considers the external market context, undertakes rigorous prioritization of initiatives, including understanding and evaluating commercial and financial implication and trade-offs, and assesses key risks and opportunities. Draft business unit plans go through a series of robust local and group level review and are supported by an opinion from the Chief Risk Officer. The business plan is presented to the Board in November for review and approval.

Inclusion of climate and non-financial areas in business plans

Climate planning was more formally embedded into the overall Aviva Group Business Planning process in 2020 (Plan 2021-23), along with a number of other strategically important non-financial areas (e.g. Diversity, Equity and Inclusion, Customer performance, etc). Guidance and aiming points to deliver the flightpath towards Aviva's climate strategy ambition across key metrics were developed and communicated to businesses working with the group sustainability and risk teams.

The latest planning round (2023-25) included a request to business units, including Aviva Canada, to look beyond the three to five years and provide further indications of the plans out to our 2030 climate ambition including the 60% reduction in carbon intensity of investments, and the net-zero target for operations and supply chain. We will continue to develop and enhance the process and approach going forward and align it to our Climate Transition Plan.

Climate Value at Risk (VaR) measure

Scenario analysis is a key tool for helping to identify the potential impact of climate change on an organization 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 through different IPCC scenarios and in a blended aggregate scenario[4] 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.

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 plc has developed a Climate VaR measure applicable to all business units including Aviva Canada 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.

Underpinned by science

The IPCC has identified potential future scenarios with respect to climate change[5]. Each scenario describes a potential trajectory for future levels of GHGs and other air pollutants. Some of 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.

4 See Aviva plc TCFD Appendix for more details of our Climate VaR methodology and the MSCI model.

5 The IPCC Sixth Assessment Report (AR6) provides an overview of the state of knowledge concerning the science of climate change.

A bespoke approach for our business

We calculate a Climate VaR for these four scenarios, reflecting the different emission projections and associated temperature rises. We also aggregate these outputs to determine the overall impact across all scenarios by assigning relative likelihoods to each scenario[6].

The climate-related risks and opportunities modelled are tailored to the impacts we observe across our diverse range of asset classes and product offerings:

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

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 other asset classes as well as our underwriting portfolios and the potential VaR from climate, we have used qualitative frameworks, such as the ClimateWise Infrastructure Framework, and quantitative tools to estimate the potential exposure and opportunity of other assets and liabilities. We continue to work with industry bodies to create industry-wide methodologies to drive consistency across the sector.

Our methodology continues 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 2022. In particular, we incorporated:

- A greater number of physical risk scenarios from MSCI covering different temperature levels of global warming.
- A wider range of climate transition scenarios, covering different integrated assessment models and emissions pathways.
- An updated methodology for calculating VaR impacts for our sovereign holdings, using recent research[7] on sovereign bond downgrades under different emissions scenarios.

Deepening Aviva's capabilities

We will continue to build upon the current methodology:

- Review the baseline against which impacts are assessed, as part of our ongoing preparation to disclose quantified Climate VaR impacts.
- Further enhance our physical risk modelling in order to improve perils covered and granularity of analysis.
- When available, consider incorporating MSCI's new sovereign bond VaR methodology.

6 The Unconditional Probability Distribution of Future Emission and Temperatures; Frank Venmans and Ben Carr; November 2022. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4228706

7 Rising Temperatures, Falling Ratings: The Effect of Climate Change on Sovereign Creditworthiness; March 2021. bennettinstitute.cam.ac.uk/wp-content/uploads/2020/12/Rising_Climate_Falling_Ratings_Working_Paper.pdf

Climate VaR findings

Aviva plc has been reporting on this metric since 2018. Figure 3 compares a plausible range of outcomes (5th to 95th percentile) from our Climate VaR analysis for the different scenarios considered. Aviva plc'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. The impact on general insurance liabilities is mitigated by the short-term nature of the business, the ability to reprice annually and our reinsurance program. However, the physical effects of climate change will result in more risks and perils becoming either uninsurable or unaffordable over the long-term.

Figure 4 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 5 shows the split of climate-related impacts to Aviva by exposure type; this is dominated by credit, equities and sovereign holdings.

4°C insights: Aviva is most exposed to the 4°C scenario where physical risk dominates, negatively impacting long-term investment returns on credit, equities, real estate, and sovereign holdings.

1.5–2°C insights: Our results show there is a clear benefit in terms of keeping temperature rises below 2°C.

Physical risk impacts are more limited in these scenarios, 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).

There is inherent uncertainty in the modelling as well as 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.

Figure 3: Aviva's Climate VaR output by scenario for shareholder funds as at 31/12/2022

Source: Aviva plc

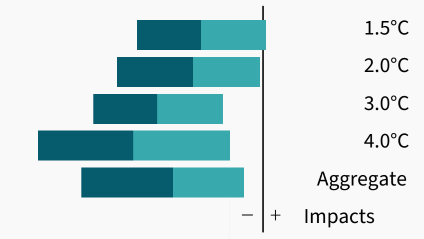


Figure 4: Transition versus physical risk by scenario for Aviva's shareholder funds (credit, equities and real estate) as at 31/12/2022

Source: Aviva plc

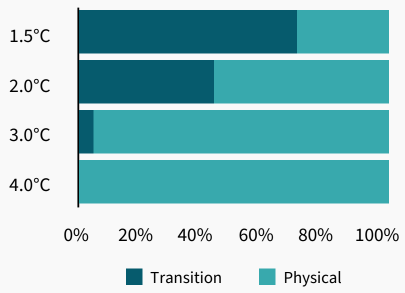
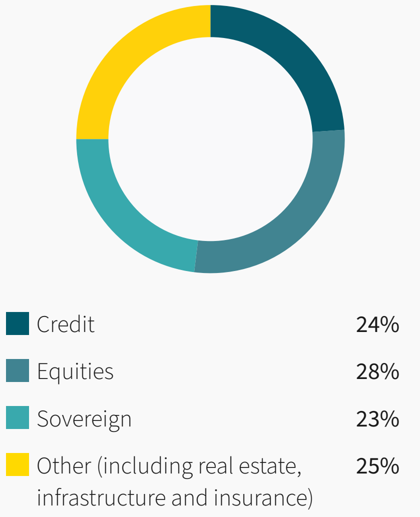


Figure 5: Proportion of Climate VaR aggregated impacts split by exposure type for Aviva's shareholder funds as at 31/12/2022

Source: Aviva plc



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

Accountability and leadership

Ensuring Aviva leads from the front through alliances and our actions to meet net zero

Decarbonizing our investment portfolio

Reducing financed emissions in our investment portfolio and investing in sustainable assets

Insuring a net-zero future

Underwriting renewable energy infrastructure and proposing a methodology for net-zero underwriting

Targeting operations and supply chain

To be net zero by 2030 through the SBTi

Embedding climate in our culture

Educating our employees on their role in the just transition to a low-carbon future

Accountability and leadership

One way to manage the risks caused by the transition and physical risks of climate change is to drive and lead change.

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 on the 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 Canada, this means we need to lead the way and bring our people, our customers, industry peers, and communities on the journey with us.

Since 2021, we've focused on three areas and established and strengthened partnerships and collaborations to make change:

- climate resiliency and adaptation
- climate mitigation and sustainable finance
- biodiversity and nature

Climate resiliency and adaptation: The impact of climate change is being felt today across Canada and may become drastically worse over the next 30 years. As extreme weather and natural disasters increase, we are committed to helping to reduce its impact on our customers' lives, and on Canadians at large.

We work with a range of industry and external partners to support our customers and communities across Canada to build greater resilience in the face of climate risk, including:

- **Institute for Catastrophic Loss Reduction:** We continue to work closely with the Institute to implement their recommendations to help customers reduce the likelihood of future losses, such as installing high wind rated shingles and using non-combustible exterior cladding.
- **Climate Proof Canada:** We are a member of this broad-based coalition comprising insurers, environmental NGOs and research groups, municipal representation and Indigenous participation. We are encouraging the federal government to incorporate adaptation as a critical element of our national climate plan, to protect communities from worsening severe weather.
- **Insurance Bureau of Canada (IBC):** We play an active role in IBC's climate work, focused on assisting Canadians to better adapt to and minimize climate risk and personal impact. Aviva is represented on IBC's Natural Catastrophe Committee and together with the IBC, we have urged the federal government to move forward with a flood insurance pool and the national adaptation strategy.
- **WWF-Canada:** Our $2M investment in WWF-Canada's Nature and Climate Grant Program helps communities and Indigenous organizations restore degraded lands and shorelines and improve habitats. Details of impact made can be found on page 40.

We are also active in government climate-related consultations at various levels, focused on perils including flood, earthquake and wildfire, sharing our business expertise and customer learnings to help inform policy decisions.

Accountability and leadership continued

Climate mitigation and sustainable finance: A single company or even a group of companies cannot make Canada's economy, or the global economy, net zero. This will take action from governments, regulators and other actors who help shape global economies and financial markets.

We also need to bring our customers along with us and ensure our actions reflect their interests and values, supporting a just transition to net zero. Aviva Canada supports the realization of systems level change, so the whole financial system works toward a sustainable future.

Our CEO continues to be a member of the Sustainable Finance Action Council's main Steering Committee. The Sustainable Finance Action Council's mandate is to lead the Canadian financial sector toward integrating sustainable finance into standard industry practice. Aviva is also a member of the Disclosure Technical Expert Group. The Council's primary focus is supporting the introduction and enhancement of climate-related financial disclosures in Canada's private and public sectors, aligned with the recommendations of the TCFD framework. We welcome the government's move toward mandating federally regulated financial institutions and federally regulated pension plans to issue climate-related financial disclosures and net-zero plans, in line with the TCFD recommendations.

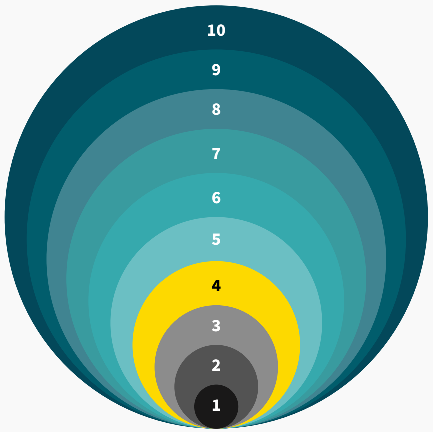
Globally, Aviva plc collaborates across our industry to drive mitigation action and influence the transition to a lower carbon world by participating in alliances such as:

- **GFANZ:** Contributed to many of the key financial-sector initiatives launched at and ahead of COP27, including the GFANZ Framework for Financial Institution Net-Zero Transition Planning, a Call to Action to G20 governments, and the UK Transition Plan Taskforce standard for private-sector climate-transition plans. Aviva plc currently co-leads the public policy advocacy workstreams of the NZAOA and GFANZ to develop methodologies and reporting requirements.
- **NZIA:** Aviva plc has contributed to the development of the NZIA target setting protocol. We were also one of the 16 members of the Partnership of Carbon Accounting Financials (PCAF) Insurance-Associated Emissions Working Group that developed the first-ever accounting standard to measure GHG emissions associated to insurance portfolios. The standard covers commercial lines and personal lines auto.

Solving the climate crisis is going to take everyone. We are attuned to business opportunities, working with partners to support a just transition when regulation on climate and biodiversity comes. We will continue to leverage our core business to insure and invest in green innovation, which will mitigate risk and further enhance our green revenues creating value for all our key stakeholders.

Figure 6: Our spheres of influence

Source: Aviva plc



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 setters 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 Network of Central Banks and Supervisors for Greening the Financial System (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

Biodiversity and nature: Canada is facing the dual crises of biodiversity loss and climate breakdown. One third of climate-change-causing GHG emissions result from the destruction of trees, ground cover, peatlands, and coastal plants and ecosystems. Our climate goals will be delivered in a way that contributes to tackling the related challenges in biodiversity and nature, ensuring that our focus is not only on carbon offsetting but also targeting broader ecosystem resilience.

As part of these goals, we are playing our part in reversing the loss of nature by 2030, a goal that has also been echoed by the Canadian government and G7 countries.

Aviva's global Biodiversity Policy, published in 2021, sets out key principles to guide our decision making and actions in this space. To manage our risks from, and our impacts and dependence on biodiversity loss, Aviva committed to carrying out an assessment of its investments, underwriting and operations by the end of 2023. This will help identify and prioritize key areas of impact and dependency including using relevant assessment tools as they become available.

Once this discovery phase is completed, Aviva intends to set more detailed targets to help us reach our goal to reverse nature loss by 2030, aligned to the Post-2020 Global Biodiversity Framework. Aviva will report annually against these targets including any positive or negative contribution to global biodiversity goals linked to our core business.

In 2022, Aviva plc published its "one-year on" Biodiversity Report which outlines the progress and initiatives undertaken. Aviva Canada contributed to this report detailing the impact of its WWF-Canada partnership, creation of 18 native plant gardens across Canada and a case study of how it helped to provide a customer with a surety bond to support the reclamation of its coal mine. To read the full details, please refer to Aviva Canada's 2022 Sustainability Report.

Decarbonizing our investment portfolio

The emissions from our shareholder and policyholder investments represent the largest proportion of our overall carbon footprint. This is where we are focusing our decarbonization efforts and seeking to drive the transition to a low-carbon future.

The emissions from our investments are captured as part of Scope 3 category 15 reporting under the GHG protocol and are the most challenging areas of emissions reporting due to lack of mature methodologies and availability and quality of emissions data. As the largest share of our total GHG emissions, we continue to focus on changes in this area whilst we further develop our reporting capability to support our disclosure.

As an asset owner, we can influence the global transition to lower carbon economies through our responsible investment. Aviva Canada's shareholder assets span investments in North American governments and corporations.

We seek to align our investments with a pathway towards net-zero carbon emissions and ensure consistency with the 1.5°C Paris ambition. The stark probability of the world reaching the 1.5°C threshold by 2030 means that we all have to double down on our efforts. That's why we aim to drive the transition of all assets as early as possible and to net zero by 2040. This is a decade ahead of the NZAOA commitment of transitioning portfolios across all asset classes to net-zero emissions by 2050 and most economies' net-zero targets.

We recognize 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 ambitions for how we will measure our portfolio transition.

Measuring decarbonization success

Our ambition is to reduce our carbon intensity of our investments by 25% by 2025 and 60% by 2030 (from a 2019 baseline).

By the end of 2022, we had reduced the weighted average carbon intensity of our credit and equity investments by 44% compared against a 2019 baseline.

SBTi and NZAOA developments

Aviva committed to the SBTi and the Business Ambition for 1.5°C in March 2021. Our targets were validated by SBTi and publicly announced in 2022. Our SBTs cover not only our Scope 1 and Scope 2 (market-based) GHG emissions but include specific targets over our suppliers as well as our investment portfolio (including credit and equities, electricity generation project finance and real estate), which is the most material category of emissions across our value chain.

Aviva Canada has set a portfolio target through the UN-convened NZAOA.

It takes a range of levers to decarbonize

The first three levers within Aviva plc's portfolio decarbonization 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 operationalize our net-zero pledges, Aviva plc works 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

Insuring a net-zero future

Insurers play a critical role in enabling the transition of society and the wider economy towards a low-carbon future, on both sides of the equation – mitigation and adaptation.

With our customers, we will continue to integrate climate change considerations at all stages of thinking about risk, understanding, prevention, reduction and protection through insurance and reinsurance, so that our solutions continue to be accessible and affordable.

To support the transition to a low-carbon economy, across Aviva markets, we are developing products and services which reward customers for environmentally responsible actions. At Aviva Canada, we're playing our part across three core business areas:

- underwriting
- products and services
- claims management

Carbon footprinting of underwriting portfolios

Aviva plc has 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. The Partnership for Carbon Accounting Financials (PCAF) has published the first-ever global standard to measure GHG emissions associated to insurance portfolios ("insurance-associated emissions"). Aviva plc was one of the 16 members of the PCAF Insurance-Associated Emissions Working Group that developed the standard. The standard covers commercial lines and personal lines auto. We will work towards compliance with the newly released PCAF Global GHG Accounting and Reporting Standard for Insurance-Associated Emissions.

Insuring a net-zero future continued

CASE STUDY

Supporting our customers in transitioning to low carbon

We are committed to acting on climate change and against biodiversity loss. Through our underwriting statement we support the transition to greener energy sources – enabling the reduction of negative impacts on the climate and biodiversity. For six years, Aviva Canada's surety team worked on an opportunity to provide TransAlta – a large Canadian electrical utility company – with a surety bond to support the reclamation of its Highvale coal mine. Mine reclamation is the process of modifying land that has been mined to restore it to an ecologically functional state.

The most significant challenge to overcome was the provincial regulator that did not accept surety bonds as a form of financial assurance for reclamation obligations. Over the course of six years, our surety team partnered with industry and government stakeholders to encourage the use of surety bonds to guarantee reclamation obligations and to develop a bond wording acceptable to all parties. The use of surety bonds as a form of security provides financial flexibility to companies allowing them to invest capital in things like renewable energy. In July 2022, our efforts were successful thanks to the surety bond wording that Aviva Canada was instrumental in developing. Through the efforts of Marsh Canada, commercial terms were reached and a reclamation bond was issued to the Alberta government. This is currently the largest mine reclamation project in the province of Alberta.

Highlights:

- Active coal mining ceased December 2021; The Highvale Mine is now a 100% reclamation project.
- Thermal coal power generating stations have now been converted to natural gas or have been shut down permanently.
- TransAlta is actively investing in wind and solar generation, and has signed up for SBTi.

Photography © TransAlta

The post-reclamation landscape has been planned with consideration to the needs of local species of wildlife and will include a balance of agricultural land uses, forested and open grass areas, wildlands, wetlands, and end-pit lakes. TransAlta has also engaged local Indigenous communities to optimize the end-use planning. This includes the incorporation of identified species that are culturally important for Indigenous communities in its reforestation work.

Using reclamation bonds to restore land demonstrates the opportunity and potential for us to develop products to not only facilitate the transition to low carbon, but to also positively impact biodiversity. Learn more about how this project came to life here.

Insuring a net-zero future continued

Products and services

As an insurer, we can influence customer behaviour through the range of products and coverage we offer. To support the transition to a low-carbon economy, we continue to provide and develop climate-conscious products and services that reward customers for environmentally responsible actions and help to build resiliency in the face of extreme weather events and disasters.

In 2022, Aviva Canada introduced a new electric vehicle (EV) insurance solution that offers features and benefits to personal insurance customers to make EV adoption easier, including:

- up to 10 per cent off their premium when they insure an EV
- free towing services should their vehicle lose charge on the road
- eligibility to receive a $2,000 subsidy to upgrade their gas-powered vehicle to an EV after a total loss

We will continue to build new products and propositions that support customers transition towards sustainable or green activities. As part of our work with the NZIA, we will develop our own methodology to measure our underwriting portfolio carbon footprint while enhancing tools to monitor and track perils impacted by climate change. We are also committed to building propositions though our risk management arm, and other forums to help customers develop and deliver their own ESG commitments.

Personal insurance

Green Vehicle Discount – get a discount for saving fuel and contributing to a greener planet when you own an electric or hybrid vehicle.

Claim Prevent – provides up to $2,500 reimbursement for any device or equipment that will prevent the same claim from happening again, including fire alarm systems, sump pumps and more.

Green Assure – customers can do their part for the environment by replacing damaged items with eco-friendly replacements (e.g. bamboo/cork flooring and Energy Star appliances).

Roof & Siding Coverage – offers up to $2,500 for purchase of hail-resistant materials to replace roof/siding, following damage from a hailstorm, windstorm or the weight of ice, snow or sleet.

Green Home Power – coverage for customers who choose solar panels and wind turbines to generate electricity.

InsureMyTesla – enhances the ownership experience of Tesla drivers by offering Aviva Canada's custom insurance coverage solutions, including for their charging equipment. These drivers also benefit from EV discounts.

Overland Water – protects property from water damage caused by water entering property due to overflow of any body of fresh water such as lakes and rivers.

Sewer Backup – offers up to $1,000 to install a backwater valve or sump pump following damage from a water claim.

Insuring a net-zero future continued

Commercial insurance

Currently, we offer several commercial insurance solutions that support the carbon transition for businesses:

Enterprise – A comprehensive insurance product for business that responds to their evolving needs and market trends. This product includes two climate-related coverages that enables the business to 'build back better':

- "Building Upgrade" provides additional coverage post claim for the business to repair or replace building components with materials to improve resistance to future loss; and
- "Environmental Upgrade" provides additional coverage to replace damaged property with components that improve the energy efficiency or environmental emissions of a building or its equipment post-loss, without a requirement for the replacement components to meet LEED certification.

Surety reclamation bonds – Aviva Canada writes surety business for mining and oil and gas companies. We provide guarantees for the required reclamation work, as detailed in licensing and permitting agreements with local government. We hold corporate guarantees and/or collateral as security for Aviva, and endeavour to have our customers set aside funds to finance the reclamation work, as resource extraction operations near the end of their operational life cycle or prior to production becoming uneconomical.

In support of Aviva's climate goals, we focused our attention on the renewable energy sector. Our strategy was to leverage our global corporate and specialty risk expertise to offer our existing products to businesses in industries such as wind, solar, battery storage systems, geothermal, and hydroelectric.

To support this work, Aviva established a renewable energy working group across underwriting, client relationship management, and risk management. The result is that Aviva Canada was able to write six new accounts, totaling approximately $7M in the first year.

We will continue to build on our strategy and are looking to have dedicated underwriters and expertise in renewable energy. Growing our book will support enabling companies in these industries to support our larger mandate around climate transition.

As well, we are enhancing our product suite to help our customers to address weather driven extra expenses and business interruption risks by piloting our first parametric insurance product for the small and medium business customers in select industry segments. In the first phase we will be providing pricing indications and risk transfer options for risks faced by those companies because of either a lack, or an excess of precipitation for a defined period. Example: a rained-out patio season for a restaurant or the extra cost to clear more than usual snowfalls etc. A pilot of the parametric cover went live with select brokers in 2022.

Claims management

Claims management is contributing to Aviva Canada's net-zero operations and net-zero supply chain goals by focusing on decarbonizing our claims process and supporting our claims suppliers on their own net-zero journeys. We've made this a priority for our business and have dedicated resources to this important work under our Sustainable Claims Management Program.

We've been working to understand and measure the emissions within our claims value chain and identify emissions hot spots. We are continuing to engage our suppliers in conversations around sustainability, recognizing that our success in being able to manage claims in a sustainable way relies heavily on our partnerships with our suppliers. We spent 2021 gaining an understanding of where our suppliers were at in their net-zero journeys, the challenges they're facing and the support they need. In 2022, we put those learnings into action by:

- establishing an interim net-zero supply chain target of supplier spend signed up to the SBTi
- creating a strategy and roadmap for engaging suppliers to support Aviva in our net-zero journey by signing up to the SBTi and supporting sustainable claims management processes
- developing a plan to implement the strategy with a group of early-adopter suppliers and build the knowledge and capabilities of Aviva stakeholders beginning in late Q2, 2023.

In 2022, our claims team responded to three major weather events across eight provinces. The team assisted over 11,000 customers impacted by a severe winter storm, a spring windstorm and the devastating effects of Hurricane Fiona. We know that the effects of climate change will only continue to exacerbate the frequency and severity of weather-related catastrophes.

Targeting operations and supply chain

Aviva is reducing the environmental impact of its operations and supply chain. We've been doing it for decades.

Our goal is to have net-zero operations by 2030 and to use 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 in our supply chain by 2030, supported with the adoption of the SBTi.

Renewable energy and emission reductions

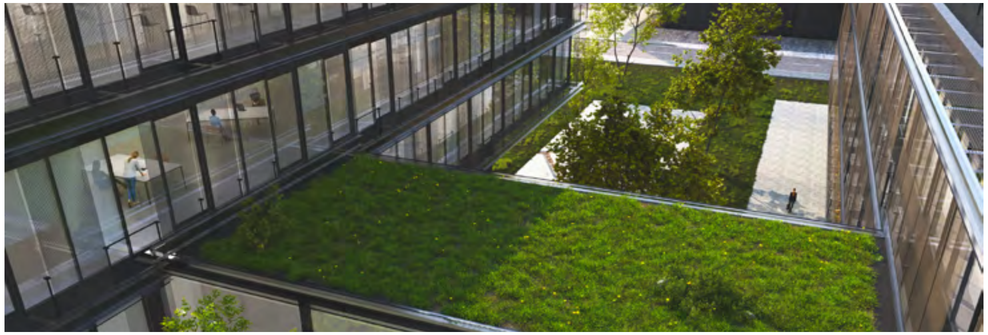
Our net-zero operations goal is focused on a 90% reduction in Scope 1 and 2 emissions by 2030. As a group, Aviva has achieved its goal of 100% renewable electricity by 2025, achieving its RE100 commitment two years early.

Data-driven office buildings

To increase the energy efficiency of our Canadian office buildings, we have installed environmental sensors that measure CO_2, lighting, temperature, and occupancy. The data from the sensors have enabled us to reduce power demands across all buildings, resulting in lower energy usage, saving us costs and reducing our impact on the environment.

In 2022, Aviva Canada was awarded the Green Apple Environmental Award for our smart building optimization work with our partner, Carbon Intelligence[8], in our Oakville and Markham offices.

The result is a proactively managed asset which has struck a balance between operational efficiency and creating a healthier, more environmentally friendly workplace.



Results:

- 8.8% and 6.9% projected annual savings in energy consumption implemented at Oakville and Markham site respectively since the start of the program
- both sites had 5% decrease in electricity consumption in Q1 2022 compared to Q1 2021 (before the program kicked off)
- additional 17.8% energy savings identified at the Oakville site from original base build fit-out design changes
- improvements over interior and exterior lighting control leading to significant long-term savings achieved through using more efficient and fit for purpose occupancy sensors (PIR), daylight sensors and an established O&M program for adjusting lighting time schedules on a seasonal basis

Main outcomes for Markham site:

- unoccupied heating setpoint dropping from 18°C to 16°C
- district cooling consumption for YTD 2022 is 2.4% lower than same period last year (Prior Program Implementation)
- district heating consumption for YTD 2022 is 6.4% higher than same period last year (Note: Winter 2022 was 15% colder than winter 2021)
- all fluorescent and halogen lighting replaced with LED bulbs
- statutory holiday turn-offs and turn-downs applied on all applicable floors
- new HVAC holiday schedule has been created

Main outcomes for Oakville site:

- significant reduction in gas consumption in colder weather, potentially due to thermostat temperature limits improvements
- removal of weekend HVAC plant operation
- reduced heating pump operation during milder weather

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

Targeting operations and supply chain continued

Corporate fleet

In March 2021, Aviva plc joined the EV100 initiative, which aims to accelerate the use of electric or plug-in hybrid vehicles in corporate fleets by sharing best practices among members. Our goal is to deliver all new company car leases in Canada, the UK and Ireland through battery electric (BEV), plug-in hybrid (PHEV), or hydrogen fuel cell electric vehicles (FCEV) vehicles by 2025. The lack of EV availability in the marketplace due to supply chain challenges has proven challenging for Aviva Canada and many businesses. We added three PHEVs to our corporate fleet in 2022 and continue to explore solutions to ensure we meet our commitment.

Accounting for homeworking

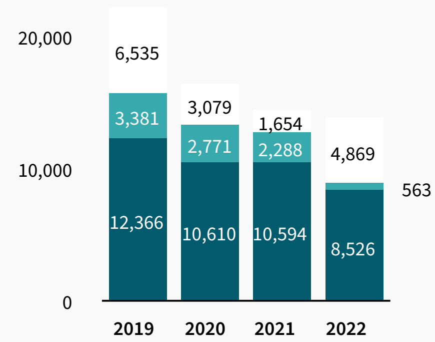
In 2021, Aviva plc expanded its operational carbon emissions methodology to calculate the emissions produced per employee, which includes the emissions from homeworking to reflect its hybrid operating model. As this methodology is still nascent and is based on a number of assumptions, we have not included these emissions in our operational carbon footprint table. The reduction in emissions from homeworking is due to the increase in colleagues returning to the office. We believe these emissions to be Aviva's responsibility and have, therefore, purchased carbon avoidance offsets to account for them. Please refer to Aviva plc's Annual Report and Accounts for an expanded table featuring its energy use and carbon emissions data to reflect the requirements of the UK Streamlined Energy and Carbon Reporting (SECR) framework.

Reducing our environmental footprint

In 2019, Aviva Canada eliminated single-use plastics from our operations. 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 2023.

Figure 7: Absolute operational carbon emissions tCO_2e (market based)[1]

Source: Aviva plc



Scope 1 – natural gas, fugitive emissions oil and company owned cars

Scope 2 – electricity

Scope 3 – business travel and grey fleet, waste and water, electricity transmission and distribution (excludes homeworking energy use)

1 Comparative periods have been re-presented on a consistent basis.

Targeting operations and supply chain continued

Improving offsetting transparency

Whilst we are making strides to reduce our operational emissions, there are still emissions across our value chain which we are currently unable to abate. Aviva plc including Aviva Canada has been carbon neutral in our operational operations since 2006, through the purchase and retirement of carbon reduction credits from the voluntary carbon market. 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.

Moving from carbon reduction credits to removal credits

With more companies considering how they treat their residual carbon emissions from their operations, the focus on carbon reduction credits and the type of credits employed has increased dramatically. To contain costs and ensure the continued robustness of our operational carbon neutrality status, Aviva plc 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 Aviva plc's operations remain carbon neutral through to 2030. At that stage Aviva plc including Aviva Canada will switch to using removal credits (representing the carbon removed from the atmosphere as the result of carbon removal projects).

In March 2021, Aviva plc announced a £100M funding on carbon removals across its core markets. This work has begun, many nature-based solutions take time to absorb carbon from the air. We've explored the best interventions to remove carbon while providing other social and economic benefits to our communities, such as flood protection and resilience.

Targeting operations and supply chain continued

Initial carbon removal projects

In 2022, Aviva Canada invited potential suppliers to submit funding proposals for nature-based carbon removal projects that will support us in sequestering our residual emissions. We would like these projects to help us positively impact communities, make significant numbers of people more resilient, create a positive impact and lasting legacy for our people, customers, communities, and the environment.

Operational supply chain

Across Aviva plc, we have mobilized a net-zero supply chain work stream in Aviva's net-zero program and set about ensuring that our purchased goods and services (Scope 3 Category 1) are aligned to the low-carbon economy transition. Aviva Canada is part of this work and collectively 30% of our suppliers (by spend) covering purchased goods and services have set SBTi validated targets.

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

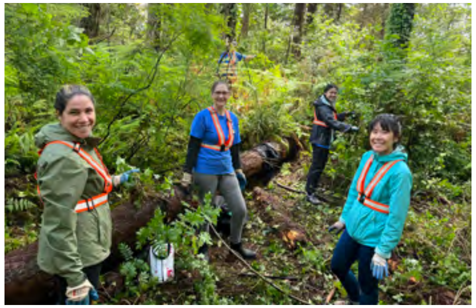
	2022 achievements
People	Building awareness – engaging our teams regularly to increase their understanding of the group-wide commitments impacting their roles and how we will be changing our ways of working. We have established channels for sharing the latest updates and also in collaborating on our own personal ESG changes and journeys.
Partners	We issued an ESG questionnaire to our top emitting suppliers to benchmark 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. We have developed a new ESG schedule which will be applied to all new and renewing contracts in 2023. We are also compliant with an Aviva-wide organization 'Stoplist' which sets out organizations, sectors and projects we will not invest in, underwrite, or engage as a supplier due to their ESG credentials.
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 RFP question sets 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.

Embedding climate in our culture

Our people are the driving force behind everything we achieve as a business, which is why we want to empower them to take climate action alongside us and in partnership with organizations that share our ambition.

Significant transformation is required to respond to climate change, and this requires a marked change in individual behaviour. We are enabling our people to adjust their behaviour and reduce their environmental footprint. Some key highlights of the year included:

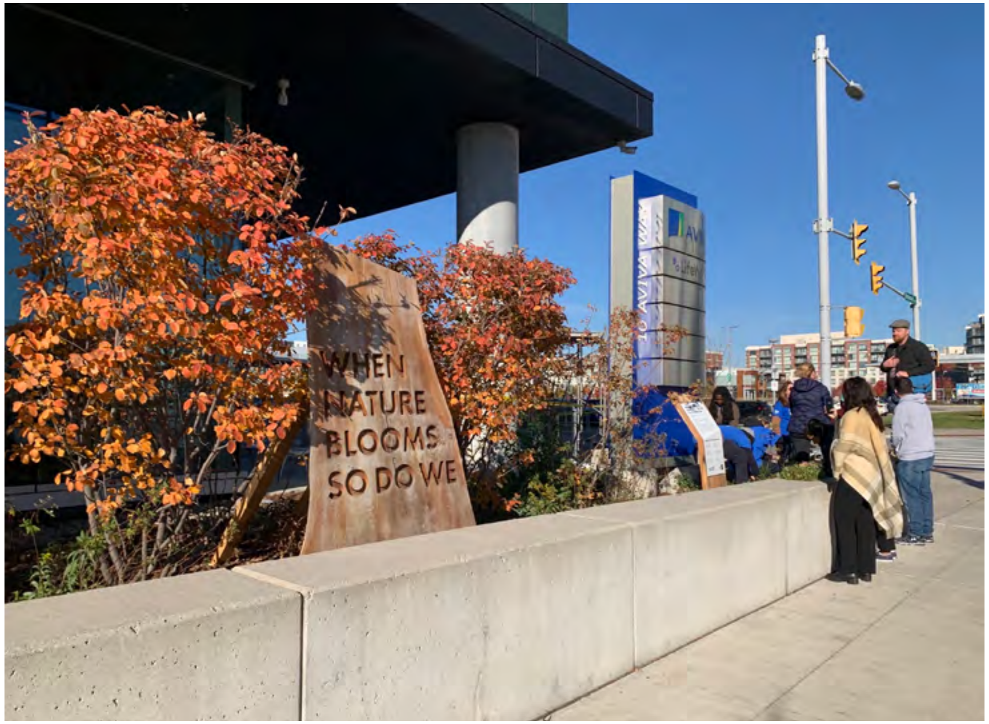
- **Aviva Climate Day:** Over 1,100 Aviva employees across Canada were out in local communities engaging in activities from tree planting to potting native plants and cleaning up local shorelines, while learning more about topics on sustainability, including how organic waste is processed and the benefits of having honeybees in the ecosystem. Our collective efforts resulted in:
    - 1,463 trees and shrubs planted
    - 2,213 native plants potted
    - 249 trees mulched
    - 85 invasive species pulled
    - 194 bags of litter collected



- **Aviva Loves EVs event:** In October, several hundreds of our people came together to learn more about EVs and test drove various EVs at our EV awareness day.
- In December, we launched our **Charged for Change** initiative, in partnership with Earth Day Canada, where we are investing $3M in critical charging infrastructure for underserved communities.
    - To read more about our EV investments, including Charged for Change, see page 31 of our Sustainability Report.

Embedding climate in our culture continued

- **Championing biodiversity:**
  - Six projects were funded through the Nature and Climate Grant program, our partnership with WWF-Canada.
    - **302+** hectares of wetlands, grasslands, shorelines, agricultural areas and former industrial sites was restored.
    - Nearly **61,714** trees and shrubs planted which will sequester carbon as they grow and benefit more than **51** populations of species at-risk.
    - **135,000** people made more climate resilient



  - Along with our partners, Aviva Canada installed 18 native plant gardens at our Aviva, broker, and supplier offices across five provinces, planting 2,201 native plants and restoring or enhancing 6,200 square feet of land.
  - Over 1,000 of our people took action and planted a native plant in their own gardens. Over 450 also took advantage of our $50 subsidy for native plants, planting native plants at home, to help restore biodiversity loss.
  - Our CEO and teams participated in COP15 in Montreal in December, sharing how we're acting on climate change and protecting biodiversity at Aviva, while advocating for the importance of moving faster and working together to make meaningful change happen.

- Our Tackling Climate Change Together guide provides information and outlines actions our people can take to play their part in taking climate action in their job, at the workplace, at home or in the community.
- Our **Personal Spending Account** of $200 per employee is available for many green living items, such as bike-sharing memberships, solar energy products and composters.
- Our **Essential Learning module** provides training for our people and in-depth training for those with direct responsibility to identify, manage, measure and report climate-related risks and opportunities with a completion rate of 100%.

To read more about how our people at Aviva Canada are embedding climate in our culture and building stronger and more inclusive communities, please read our 2022 Sustainability Report.

Our approach to climate risk is embedded in our risk management framework

Risk management

Rigorous and consistent risk management framework embedded across Aviva 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 according to the nature and size of their impact to assess their materiality, which dictates the prioritization 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. We are already taking the impact into account in our internal model for some risk drivers over a one-year time horizon. We are also acting now through Aviva's 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.

Our process for integrating climate-related risks into risk management

The principal risks impacted by climate change are credit risk, market risk, and general insurance risk.

Aviva's Sustainability Ambition is reflected in our business plan, our risk management and risk appetite frameworks to ensure our climate risk appetite is aligned with our Senior Management Long-Term Incentive Plan and external commitments. In 2022, we continued to build our climate risk capability, integrating it into our risk management and risk appetite frameworks. We've developed guidance, metrics and targets, to support better understanding and monitoring as well as ensure climate-related risks and opportunities are embedded in our day-to-day decision making in line with our climate risk appetite.

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.

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[9]. We actively avoid material exposure to climate litigation risks.

Escalation process

The climate risk appetite, its metrics and associated thresholds are approved by the Board on an annual basis. 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.

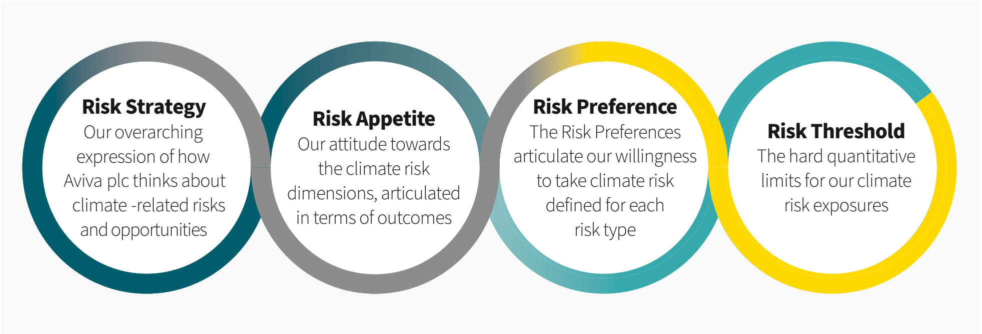
Frequency of review

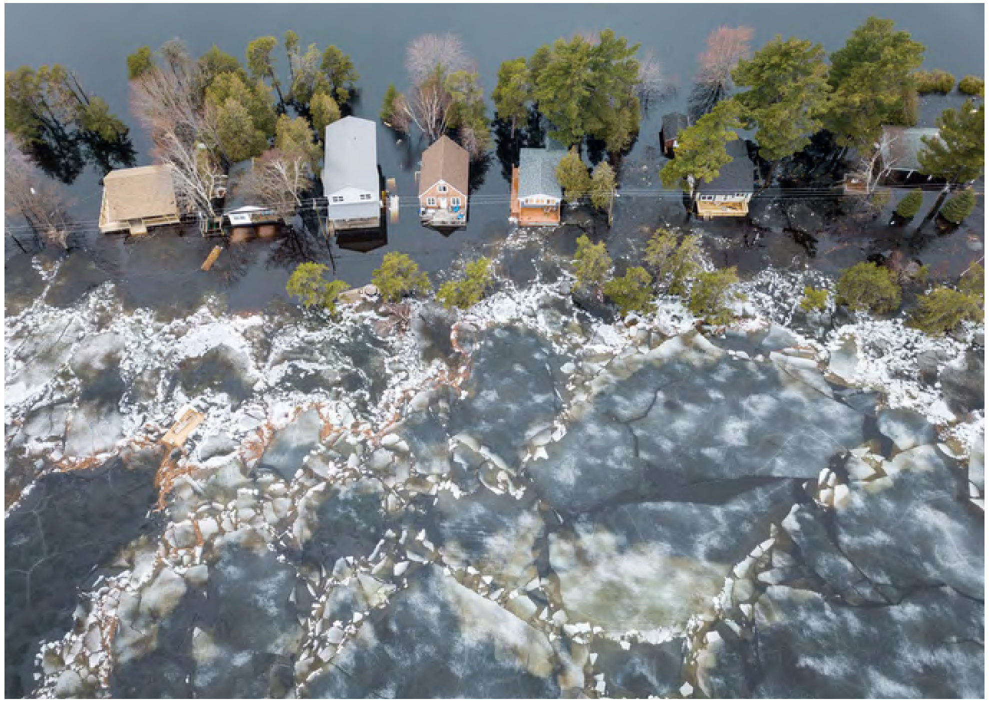
We monitor our climate metrics against these thresholds and targets on a quarterly basis. Climate risk appetite monitoring is part of our internal reporting.

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

Figure 8: Key components within Aviva Climate Risk Appetite

Source: Aviva plc





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 recognizing 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 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.

Our core TCFD metrics measure our climate performance

Targets and metrics

On an ongoing basis, the risk management framework is deployed to identify, monitor, manage, mitigate and report on material risks, including climate-related risks and opportunities.

This enables holistic management of key risks and incorporates risk and return management into our business model. We use a set of metrics and tools to manage and monitor our alignment with stated targets on climate change mitigation, and to assess the potential financial impact of climate-related risks and opportunities on our business.

For Aviva Canada, we're disclosing three local metrics:

1. Weighted average carbon intensity
2. Investment in sustainable assets
3. Weather-related losses

For details on the remaining metrics that Aviva plc reports on an Aviva-wide basis only, please refer to Aviva plc's 2022 Climate-related Financial Disclosure and Reporting Criteria document.

Climate reporting policies

Aviva plc (the Company), a public limited company incorporated and domiciled in the United Kingdom (UK), together with its subsidiaries (collectively, the 'group' or 'Aviva') transacts life assurance and long-term savings business, fund management and most classes of general insurance and health business through its subsidiaries, joint ventures, associates and branches in the UK, Ireland, Canada and Asia.

The principal reporting policies adopted in the preparation of the climate metrics are set out below. These policies have been consistently applied to all years presented, unless otherwise stated. The metrics provided cover the 2022 financial year (1 January 2022 to 31 December 2022). Unless otherwise noted, the amounts shown in the Climate-related Financial Disclosure are in Canadian dollars.

Comparatives

Comparative numbers included are consistent with our Climate-related Financial Disclosure 2021 except where methodology underpinning calculations has changed in which case the comparatives are re-presented on a consistent basis as the current year, and this is indicated in our disclosures. The comparatives reflect the emissions used at the previous reporting year.

In cases where a new data source has been used in the current period e.g. implied temperature rise data instead of portfolio warming data for credits and equities in the temperature alignment metric, or additional asset data presented, then data related to 2021 has been obtained, and included in the comparatives calculations, using the data available at November 2022, unless stated otherwise. Note 1 in Aviva plc's TCFD sets out changes to comparatives.

Use of MSCI data

As outlined in more detail in the reporting policies below and criteria in Note 14 of Aviva plc's TCFD Report 2022, Aviva used climate and other data from MSCI ESG Research LLC or its affiliates or information providers. Although Aviva's information providers, including without limitation, MSCI ESG Research LLC and its affiliates (the 'ESG parties'), obtain 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 re-disseminated 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.

Materiality

In general, assessing materiality requires thoughtful consideration not only of any applicable materiality guidance, but also of our purpose in assessing materiality and in communicating to our stakeholders. Aviva's public disclosures, including our climate-related financial disclosures, include a range of topics that we believe are relevant to our businesses and that are of interest to investors and other stakeholders.

Assumptions and estimates are subject to change, and, when coupled with the longer time frames used, make any assessment of materiality inherently uncertain. For this reason, we do not set quantitative thresholds against which to apply our materiality assessment. Instead, we take a holistic view and apply a quantitative assessment to determining the information that is important in communicating our sustainability and climate strategic ambitions to stakeholders. In addition, our climate risk capabilities and net-zero transition strategy and plan remain under development, and the data underlying these and market practice in relation to such disclosures will evolve over time. As a result, we expect that certain disclosures made in this report are likely to be amended, updated, recalculated and restated in the future. Please see page 62 of Aviva plc's TCFD Report for details.

GHG emissions

The GHG Protocol establishes a comprehensive global standardized framework to measure and manage GHG emissions. This framework underpins the measurement of emissions in the TCFD metrics. GHG emissions used for the TCFD metrics are aligned to the GHG protocol. This includes the seven GHGs covered by the United Nations Framework Convention on Climate Change (UNFCCC)/Kyoto Protocol, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6) and nitrogen trifluoride (NF_3).

Climate-risk metrics

We use external sources to produce climate metrics; these sources are noted below. While recognizing 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 still valuable in supporting our climate-related governance, strategy and risk management.

Climate metric	Overview	Physical/transitional risk or opportunity	Scope	External data provider	Note number
Weighted average carbon intensity	Attributed emissions and intensity data of our investments.	**Transition**	Shareholder, with-profit and policyholder	MSCi[1]	Note 3
Investment in sustainable assets	Measure Aviva's investment in assets and funds which meet the sustainability asset definition.	**Opportunity**	Shareholder, with-profit and policyholder	CBI, Bloomberg	Note 4
Weather-related losses[2]	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).	**Physical**	General insurance business	N/A	Note 5

1 Certain information ©2022. MSCI ESG Research LLC. Reproduced by permission.

2 A catastrophic (CAT) event in Canada is "An event or series of events where the nature or duration is such that ordinary claims handling processes and resources need immediate change and/or strengthening, so that customer service and claims control are maintained. This typically will exceed $5 million or 500 claims."

Note 1 – Scope 3 emissions reporting

Aviva is engaged with regulators, industry bodies, alliances and companies across multiple sectors to develop consistent and standardized frameworks and approaches to calculate Scope 3 emissions. Aviva does not engage in all activities linked to the categories as defined under Scope 3. Currently, Aviva is at varied degrees of maturity in terms of establishing methodologies and basis to calculate Scope 3 emissions across the 15 categories.

	Categories	Relevance to Aviva	2022 status	Section reference category included in
Upstream activities	1. Purchased goods and services	Applicable	Not reported	This will be reported in 2023 in accordance with our SBTi targets
	2. Capital goods	Applicable	Not applicable	Not applicable
	3. Fuel and energy related activities	Applicable	Reported	Note 2 – operational emissions
	4. Upstream transportation and distribution	Not applicable	Not applicable	Not applicable
	5. Waste generated in operations	Applicable	Reported	Note 2 – operational emissions
	6. Business travel	Applicable	Reported	Note 2 – operational emissions
	7. Employee commuting	Applicable	Partial reporting	Note 2 – operational emissions
	8. Upstream leased assets	Not applicable	Not applicable	Not applicable
Downstream activities	9. Downstream transportation and distribution	Not applicable	Not applicable	Not applicable
	10. Processing of sold products	Not applicable	Not applicable	Not applicable
	11. Use of sold products	Not applicable	Not applicable	Not applicable
	12. End-of-life treatment of sold products	Not applicable	Not applicable	Not applicable
	13. Downstream leased assets	Not applicable	Not applicable	Not applicable
	14. Franchises	Not applicable	Not applicable	Not applicable
	15. Investments	Applicable	Reported[1]	Note 3 – estimated financed emissions

1 Financed emissions include Scope 1 and Scope 2 of our investments in-scope. Scope 3 emissions will be reported when data and methodology permits. This is included under Scope 3 in the tables above as it relates to Scope 3 category 15.

tCO_2e shown in thousands	Note	Scope 1 and 2	Scope 3	2022 total
Operational emissions	4	16	5	21
Financed emissions[1]	5		7,010	7,010
Total operational and financed emissions by Scope		16	7,015	7,031
Sovereign emissions	6		7,597	7,597

tCO_2e shown in thousands	Note	Scope 1 and 2	Scope 3	2021 total
Operational emissions	4	20	2	22
Financed emissions[1,2]	5		8,548	8,548
Total operational and financed emissions by Scope		20	8,550	8,570
Sovereign emissions	6		9,228	9,228

1 Financed emissions include Scope 1 and Scope 2 of our investments in-scope. Scope 3 emissions will be reported when data and methodology permits. This is included under Scope 3 in the tables above as it relates to Scope 3 category 15.

2 Comparatives have been re-presented. See Note 1 for details.

The tables set out Aviva plc's operational and financed emissions by Scope along with our sovereign emissions. Sovereign emissions are shown separately given the inherent double counting of these emissions with the financed emissions calculated in Note 3. The operational emissions are included on a location basis and the financed emissions are included on a location basis where available, and where not, on a market basis.

Note 2 – Operational emissions

Aviva's reported environmental data follows the World Resources Institute and World Business Council on Sustainable Development's GHG Protocol Corporate Standard.

Reporting criteria

This note should be read in conjunction with the reporting policies and Note 6 reporting criteria.

Approach and methodology

Aviva takes the operational control approach to operational emissions reporting. This means we account for 100% of emissions from operations over which we have operational control (Aviva plc and its subsidiaries).

Aviva's operational GHG emissions include Scope 1, 2 and selected Scope 3 emissions (excluding category 15, financed emissions).

As we do not have operational control over our joint venture based in China, emissions are excluded from operational emissions and have been included in financed emissions.

The 2021 comparatives have been re-presented to be on a consistent basis and baseline. See 'Aviva plc TCFD Note 1'.

Operational GHG emissions are calculated with reference to the GHG Protocol.

Scope 1 – Operational emissions from owned sources. This includes natural gas, oil, company car mileage, and fugitive emissions (gases accidentally released into the atmosphere) from air-conditioning.

Scope 2 location-based – Operational emissions from non-owned sources (i.e., power plants) using an average emissions intensity for the grids on which energy consumption occurs. This includes purchased electricity, municipal heating, and cooling.

Scope 2 market based – Operational emissions where Aviva have contractual arrangements for renewable electricity, for example, through power purchase agreements, certified renewable energy through a supplier tariff, or the purchase of specific contractual instruments as relevant.

Scope 3 – Operational emissions from non-owned sources. These are: business travel (air, rail, grey fleet, and rental cars), water, electricity transmission and distribution, and landfill waste. See 'Note 1 – Scope 3 emissions reporting'.

Key estimates and assumptions

The consideration and materiality of Scope 3 categories requires judgement. We consider certain Scope 3 categories to not be applicable to Aviva, as we do not engage in these activities. Our reporting for each category is set out in Note 1.

Operational data (energy, refrigeration gases, travel, water, waste etc) are converted to a carbon dioxide equivalent (CO_2e) using externally provided carbon conversion factors such as those provided by the UK government (BEIS) GHG reporting: conversion factors 2022 or the International Energy Agency (IEA) on an annual basis.

Targets

We aim to have net-zero 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 in our supply chain by 2030, supported with the adoption of the SBTi.

The table sets out our GHG emissions on an absolute CO_2e basis in accordance with the Streamlined Energy and Carbon Reporting (SECR) for our group-wide operations. The 2019 baseline emissions and the 2021 comparatives have been re-presented, see Aviva plc TCFD Note 1.

Analysis

Our operational carbon emissions associated with Scope 2 are now additionally reported using the market-based methodology of the GHG Protocol and aligning with the SBTi methodology.

Scope 2 market-based methodology allows companies to benefit from their actions in sourcing certified electricity generated from renewable sources, rather than simply taking the grid average carbon emissions for the country or region.

The group's intensity ratios have also been changed from location-based intensity ratios to market-based intensity ratios reflecting the actions we take and how the group reports.

Total market-based emissions have reduced as a result of our management actions for our occupied property in accordance with our climate strategy, and despite the increase in business travel as the world returns to a 'new' normal. We are reviewing our business travel policy in 2023.

Market-based emissions intensity ratios have changed due in part to management action around energy efficiency, and reduction in the property portfolio.

	2022 total*	2021 total[1]*
Emissions		
Scope 1 (tCO_2e)	**8,526**	10,594
Scope 2 (tCO_2e) – market based	**563**	2,288
Scope 3 (tCO_2e)	**4,869**	1,654
Total market-based emissions (tCO_2e)	**13,958**	14,536
Carbon avoidance credits (tCO_2e)[2]	**(13,958)**	(14,536)
Total market-based emissions (tCO_2e / employee)		
Intensity ratios (market-based)		
Scope 1 and 2 – market-based emissions (tCO_2e) / £ million GWP	**0.48**	0.66
Total market-based emissions (tCO_2e) / £ million GWP	**0.74**	0.75
Total market-based emissions (tCO_2e) / employee	**0.59**	0.63

* Aviva plc, including Aviva Canada
1 The 2021 comparatives have been re-presented following review of the treatment of the 50% joint venture in China. See Note 1.
2 All residual emissions have been offset.

	2022 total*	2021 total[1]*
Location-based emissions (tCO_2e)		
Scope 1 (tCO_2e)	**8,526**	10,594
Scope 2 (tCO_2e) – location-based	**7,837**	9,429
Total Scope 1 and 2 location-based (tCO_2e)	**16,363**	20,023
Scope 3 (tCO_2e)	**4,869**	1,654
Total location-based (tCO_2e)	**21,232**	21,677
Intensity ratios (location-based)		
Scope 1 and 2 – location-based emissions (tCO_2e) / £ million GWP	**0.86**	1.03
Total location-based emissions (tCO_2e) / £ million GWP	**1.12**	1.12
Total location-based emissions (tCO_2e) / employee	**0.90**	0.93
Energy consumption		
Energy consumption (MWh)	**71,770**	81,071

Notes:
Scope 1: Natural gas, fugitive emissions (leakage of gases from air conditioning and refrigeration systems), oil, and company-owned car
Scope 2: Electricity
Scope 3: Includes certain Scope 3 categories for business travel (category 6) and grey fleet (private cars used for business) (category 6), waste (category 5) and water
Location-based: A location-based method reflects the average emissions intensity of grids on which energy consumption occurs
Market-based: A market-based method reflects emissions from electricity that companies have purposefully chosen
In 2022 and 2021 we offset our residual carbon emissions from our Scope 2 market-based total as this takes account of the reduced emissions from our use of electricity from renewable sources.
In 2020 and 2019 we offset Scope 2 location-based total. As at 1 March 2023, the 16,354 credits purchased in relation to the 2022 market-based emissions footprint were retired.
Includes Scopes 1 and 2 energy MWh and fuel from company car use.

Note 3 – Weighted average carbon intensity

Carbon intensity represents the carbon emissions of our investment portfolio (i.e. Aviva's emissions for Scope 3 category 15 from the GHG Protocol). We monitor the emissions of our investment portfolio for shareholder funds and our progress towards our climate ambitions. Our disclosure is for the credit and equities classes of our investment portfolio, credit and equities.

Reporting criteria

This note should be read in conjunction with the reporting policies and Note 6 reporting criteria.

Approach and methodology

An absolute emissions view of our credit and equity investments and intensity are presented. Further detail is provided in the climate reporting policies.

Carbon emissions

Scope 1 and Scope 2 location-based GHG emissions are used for the investee entity based on data provided by MSCI. Where location-based emissions are not available, market-based emissions are used, where available.

Absolute emissions are calculated in tonnes of CO_2 equivalents (tCO_2e).

Intensity measures

To calculate intensity, carbon emissions (numerator) are assessed with reference to the nature of the underlying asset (denominator) to determine an appropriate intensity measure. The denominator for the intensity calculations is based on the nature of the underlying assets.

Key estimates and assumptions

We use reported emissions when those are available and if not, estimated emissions are included. The latest available emissions data has been used to prepare the 2022 metrics.

There are time lags with the availability of emissions data, that can be up to two years, and as such the latest emissions data may relate to earlier years.

Further detail on the sources of information are provided in the climate reporting policies section. Sovereigns are covered in Aviva plc TCFD page 68.

Coverage

These metrics have been prepared for shareholder data. Not all organizations publish emissions data or have their emissions data estimated by emissions data providers. When reported or estimated emissions are not available, this reduces the coverage of the metrics.

See Aviva plc TCFD Note 11 for the reconciliation of the assets included in the Aviva plc AUM to the assets included in the climate metrics.

Metric quality

A data quality score, based on the PCAF data quality score guidelines, has been calculated to indicate the level of estimation included in the data inputs.

A scale of 1 to 5 is used, with 1 corresponding to verified reported emissions and 5 using estimated emissions. The higher the level of estimation, the more likely that the actual emissions data, when known, would deviate from the estimate provided. The PCAF data quality score is included at an asset class level in this note.

Targets

As set out in our Climate Transition Plan, using 2019 as our baseline year, our ambition is to reduce the carbon intensity of our investments by 25% by 2025 and by 60% by 2030, and transition all assets to net zero by 2040.

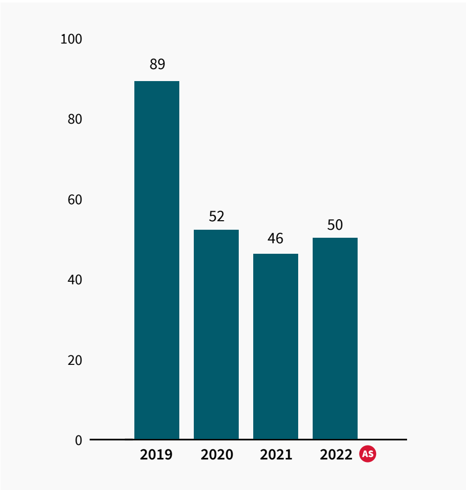
This will cover shareholder assets where we have control and data and the main asset classes of Aviva's core markets (credit, equities, and sovereign debt). The scope of coverage will expand over time as data and methodologies become available.

Results

The following tables and figures set out the financed emission metrics. Aviva Canada's weighted average carbon intensity has been reduced by 44% compared to 2019, trending ahead of our 25% NZAOA reduction target by 2025. This is due to proactive investing by our business into less carbon intensive industries, as well as in companies reducing their carbon intensity. Our objective over time is to reduce the carbon intensity to align our investment portfolio to the Paris Agreement target.

Figure 9: Aviva Canada carbon intensity (tCO_2e/$M sales)

Source: Aviva Canada/MSCi[10]

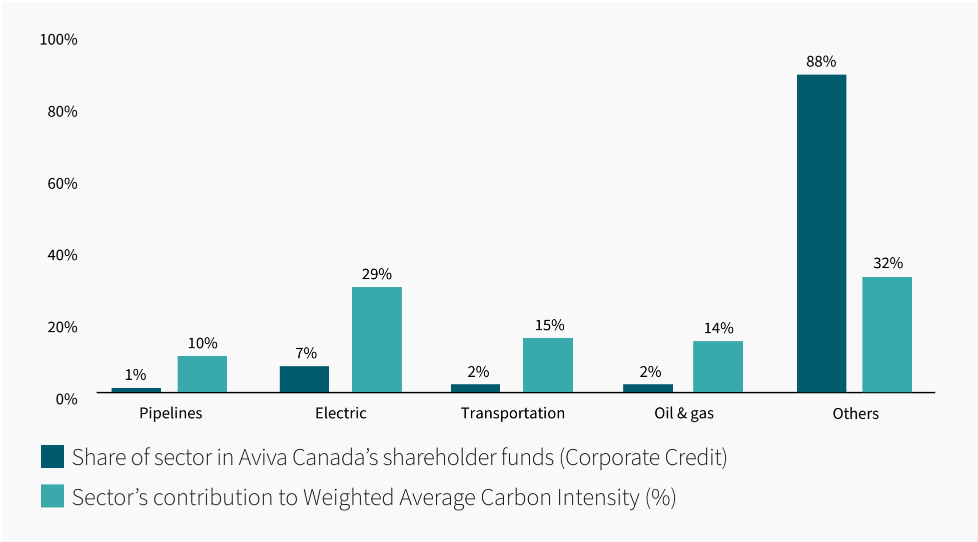


The weighted average carbon intensity of credit and equities in Aviva Canada's shareholder funds has decreased by 44% compared to 2019. We have high data coverage (87%) backing these scores. The marginal increase in 2022 is due to a shift from corporates to sovereigns and sale of existing corporate exposures which has impacted the intensity of the existing portfolio.

Carbon intensive sectors, such as pipeline, electric, transportation and oil and gas, represent 12% of our corporate credit (including preferred equities) shareholder funds but contribute 68% of the weighted average carbon intensity. The pipeline sector was the largest single contributor in 2021, representing 2% of the portfolio but contributing up to 32% of the weighted average carbon intensity. Over the past year, its share and contribution have been successfully reduced to 1% of the portfolio and 10% of the carbon intensity.

Figure 10: Aviva Canada's exposure to carbon intensive sectors in shareholder funds (credit) as at 31/12/2022

Source: Aviva Canada/MSCi[10]



Data quality

The data quality scores indicate the level of estimation included in the data inputs. Credit and equities, has a score of 2 which indicates a high level of reported data, albeit not verified.

Looking ahead

The key areas for development in 2023 and beyond are:

- Expand the disclosure to incorporate additional asset classes taking into account the latest methodology available.
- Inclusion of Scope 3 emissions of our investments (i.e. indirect Scope 3 emissions, in addition to Scope 1 and 2, of our Scope 3 category 15 investments), when data availability and robustness permits.

10 Certain information ©2022. MSCI ESG Research LLC. Reproduced by permission.

Note 4 – Investment in sustainable assets

We plan to increase our level of investment in the green economy as well as other social and sustainability assets to support our climate ambitions.

Reporting criteria

This note should be read in conjunction with the reporting policies and Note 6 Reporting Criteria.

Approach and methodology

The previously reported investment in green assets metric has been renamed to investment in sustainable assets in the current year. This update reflects a strengthened sustainable asset definition which we have revised in the current year to align with the Climate Bonds Initiative (CBI) Taxonomy and Sector Criteria. The revised definition more clearly delineates the types of assets included in the metric, this includes green and sustainability assets as well as social, transition and other climate-related funds. These updates ensure that Aviva is in line with developments in climate reporting externally.

Under the new definition, assets are grouped in the following sub-categories, as defined in our reporting criteria (see Note 6):

- Green – assets referencing an external science-based assessment methodology for green credentials or tagged as green in the CBI green bond database;
- Sustainability – assets referencing an external science-based assessment methodology or tagged as sustainability in the CBI social and sustainability bond database, including sustainability-linked debt; and
- Transition and climate-related funds – Aviva transition funds and certain climate-focused venture capital funds. The objectives and strategy of the fund are considered to determine inclusion in investment in sustainable assets.

Comparatives

At 2021 and 2020, investment in green assets was $107M and $11M. The 2021 and 2020 comparatives have been re-presented to align with the updated definition and inclusion of policyholder data, resulting in $82M and $38M of investments in sustainable assets at 31 December 2021 and 2020.

Key estimates and assumptions

In forming our definition, green and sustainable have been assessed with reference to current external indicators of green and sustainable credentials.

Coverage and context

Shareholder assets are considered for inclusion in investment in sustainable assets, where the definition is met.

Results

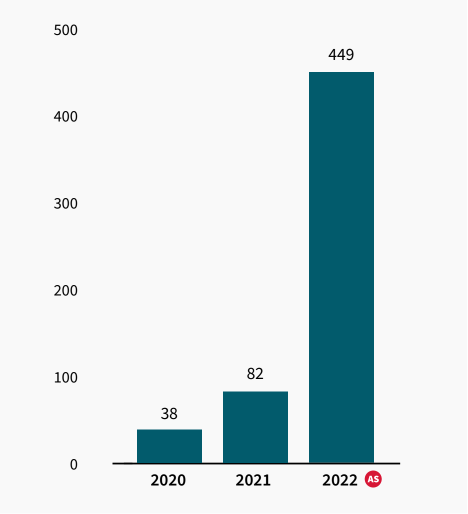
Investment in sustainable assets: Increasing our investment in the transition and the green economy more broadly is a significant opportunity and is recognized as such with a specific sustainable asset target. However, it is important to note that the Canadian market supply of sustainable assets is somewhat limited given the early stages of Canadian sustainable issuances. The portfolio could potentially return less by investing in sustainable assets, due to the prospect that sustainable issues may trade at a lower yield compared to similar non-sustainable assets.

The portfolio scope for sustainable assets within this disclosure covers Aviva Canada's own shareholder assets. We have made a commitment to reach targets of $100M, $200M, and $350M of total sustainable assets holdings by year end 2021, 2022, and 2023 respectively.

Aviva Canada's sustainable assets continued to increase over 2022, hitting $449M, and our target was met through investments in sustainable bonds.

Figure 11: Sustainable assets ($M)

Source: Aviva Canada



Looking ahead

We will continue to monitor our investment in sustainable assets in line with emerging best practice and disclosure standards. We will also keep our definition up-to-date in line with development of economy-wide definitions of green and sustainable assets.

Aviva also originates investments with broader sustainability credentials, in particular including social infrastructure (social housing, education, healthcare, and other affordable social infrastructure).

Note 5 – Weather-related losses

Aviva Canada is dedicated to helping our customers protect their property against devastating weather-related events such as floods, hailstorms, windstorms, wildfires, hurricanes, and tornados. 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 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 we monitor actual weather-related losses versus expected weather losses across all Aviva businesses. Catastrophic event model results are supplemented by in-house disaster scenarios. For Aviva Canada, our actual weather-related losses in 2022 were better than expected.

A catastrophic (CAT) event in Canada is “an event or series of events where the nature or duration is such that ordinary claims handling processes and resources need immediate change and/or strengthening, so that customer service and claims control are maintained. This typically will exceed $5M or 500 claims.” We’ll continue to work with our preferred vendor network on expectations for sustainable practices and build those important foundations for the future. Municipalities are also recognizing the need for change and are enhancing building codes to improve resilience in the face of likely increased weather-related events.

Our Canadian general insurance business is protected against large, single catastrophe events by reinsurance, purchased in line with local regulatory requirements. These catastrophe reinsurance programs limit Aviva Canada’s exposure to $50M for up to a 1-in-500-year event[11] in line with regulatory requirements. In the medium to longer term, there is potential for the premiums we need to charge to cover our risk exposure to increase, to be in line with the intensity and frequency of extreme weather events.

Looking across all of Aviva Canada’s property insurance portfolios, the proportion of property insurance premiums attributable to catastrophic weather-related losses is currently quite small, so the impact on premiums would be correspondingly low. Areas at higher risk would see proportionate increases in premiums accordingly.

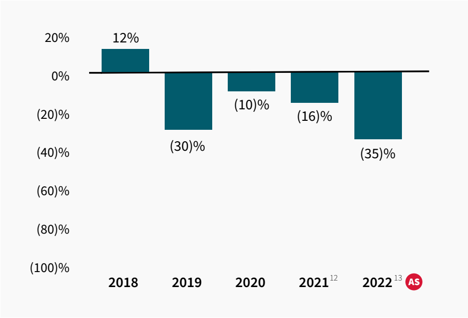
11 The Office of the Superintendent of Financial Institutions, our local regulator, established a glide path to a 1:500 protection which was put in place in January 2022 (prior to that, the cover was up to a 1-in-490-year event).

As can be seen in both Figures 12 and 13 the actual weather-related losses have performed better than expected from 2019 to 2022.

In Figure 12, when the actual weather-related losses is equal to the long-term average, 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 12: Weather-related losses

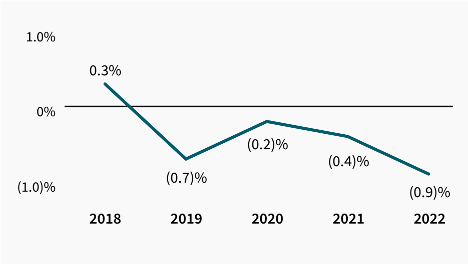
Source: Aviva Canada



In Figure 13, 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).

Figure 13: Weather impact on Aviva Canada's Combined Operating Ratio (COR) (net of reinsurance)

Source: Aviva Canada



12 Refer to PwC's Independent Reasonable Assurance Report on page 54 of Aviva Canada's 2021 Sustainability Report.

13 Refer to PwC's Independent Reasonable Assurance Report on page 74 of this report.

Looking ahead

By taking action on climate change, we are determined to improve the resilience of the financial system, our economy, and society more widely. By contributing to the transition to a low-carbon future, we will help our customers, our people and our business. At Aviva Canada, we are laser-focused on delivering our Aviva-wide Climate Transition Plan, taking the required steps to reduce emissions to net zero across our operations and supply chain by 2030, and investments and underwriting by 2040. This includes setting SBTs aligned to a 1.5°C pathway for our operations, supply chain and investments, and ensuring that our climate goals are executed in a way that simultaneously addresses our impact on biodiversity and nature to ensure wider ecosystem resilience. Aviva Canada will continue our journey toward disclosing the risks and opportunities posed by climate change on our business. We'll continue to play our part, collaborating with others in the financial services industry, the private sector and with government stakeholders to accelerate the transition to a low-carbon future. We are fully committed to realizing a better tomorrow for all Canadians.

Note 6 – Reporting criteria

The reporting criteria for each of the TCFD metrics is set out below:

Operational emissions

Operational Scope 1 emissions

Definition	The total quantity of direct GHG emissions from our operations (Scope 1). Scope 1 covers operational emissions from owned sources. This includes natural gas, oil (diesel oil), company car mileage, and fugitive emissions from air-conditioning.
Scope	This is reported for the period 1 January – 31 December. We include emissions from Group entities over which we have operational control as outlined in the section 'Operational emissions: Overview' in Aviva plc's TCFD on page 61.
Units	CO_2e Tonnes (tCO_2e)
Calculations and reporting method	**Combustion of fuel** Natural gas and oil (diesel oil) are the two primary fuels which are used in our operations. Natural gas is used for heating and cooling our offices and oil (diesel oil) is primarily used in back-up generators. In the UK and Ireland, natural gas consumption data is provided directly from the supplier, except for a few small offices where data is provided by the landlord via a service charge. For other markets, including Canada, data is provided by landlords, including municipal heating and cooling. Where actual data is not available, usually for December measurements due to timing of reporting, data is extrapolated based upon historical consumption figures. Data on oil (diesel oil) usage in the UK, Ireland and India are provided by our service partners who undertake regular checks and provide consumption reports. **Company owned vehicles** Company car (yellow fleet) business mileage is calculated from the expenses system, fuel cards and invoices. The data received is then multiplied with the Department for Business, Energy and Industrial Strategy (BEIS) or International Energy Agency (IEA) emission factors to estimate carbon emissions from company owned vehicles. **Fugitive emissions** Fugitive emission data in the UK and Ireland are provided from supplier reports by our service partners who undertake regular checks of the air-conditioning units and measure for any leaks. In other markets, where available, this is provided by landlords.
Source	The Group's environmental system.

Operational emissions continued

Operational Scope 2 emissions	
Definition	The total quantity of indirect GHG emissions from purchased energy (Scope 2). Scope 2 emissions cover emissions generated from the electricity used in all the buildings the Group operates, as calculated by the location-based and market-based methodology. **Location based** Operational emissions from non-owned sources (i.e., power plants) using an average emissions intensity for the grids on which energy consumption occurs. This includes purchased electricity, municipal heating and cooling. **Market based** Operational emissions where we have contractual arrangements for renewable electricity, e.g. through our own on-site generation, certified renewable electricity through a supplier tariff or the separate purchase of renewable energy guarantees of origin (REGOs) or market equivalent, or consumed renewable heat or transport certified through a Government scheme.
Scope	This is reported for the period 1 January – 31 December. We include emissions from Group entities over which we have operational control as outlined in the section 'Operational emissions: Overview' in Aviva plc's TCFD on page 61.
Units	CO_2e Tonnes (tCO_2e)
Calculations and reporting method	In the UK and Ireland, electricity purchased data is provided directly from the supplier, except for a few small offices where data is provided by the landlord via a service charge. For other businesses, including Canada, data is provided by landlords. In India, a small number of office electricity consumption, is extrapolated based upon the unit price of a kWh. Where actual data is not available, usually December's due to timing of reporting, data is extrapolated based upon historical consumption figures. **Location based reporting** As per Scope 2 guidance of GHG protocol, the total electricity purchased data is multiplied by the average grid factor from respective country's government database of electricity generation for the reporting period. **Market based reporting** Purchased electricity that we have purposely chosen which is classed as zero carbon, including on-site generation, green tariffs that can be matched to 100% renewable generation, or through purchasing of energy certificates (e.g. renewables obligation certificates (ROC)/REGOs/renewable energy certificates (REC) etc.).
Source	The Group's environmental system.

Operational emissions continued

Operational Scope 3 emissions	
Definition	The total quantity of indirect emissions (not included in Scope 1 and 2) that occur in the value chain including both upstream and downstream emissions (Scope 3). Scope 3 emissions cover operational emissions from business travel (air, rail, grey fleet, and rental cars), water, waste, electricity transmission and distribution, and homeworking.
Scope	This is reported for the period 1 January – 31 December. We include emissions from Group entities over which we have operational control as outlined in the section 'Operational emissions: Overview' in Aviva plc's TCFD on page 61, except for home working. Scope 3 home working emissions are calculated for the Group's businesses only (UK, Ireland and Canada).
Units	CO_2e Tonnes (tCO_2e)
Calculations and reporting method	**Business travel** For business travel made via air, rail and hired cars the total distance travelled data is procured from corporate travel management providers on a quarterly basis. The distance travelled for business travel in privately owned vehicles is calculated from the Group's expense systems which reimburse colleagues on a cost per km travelled basis. Travel is measured or converted into kilometres (km). Air travel is calculated based upon class of service (first, business, economy) and appropriate emission factors are applied to each class. **Water and waste** The data on water consumption in the UK and Ireland is provided directly from our suppliers. In other businesses, data is provided by the landlords. The data on waste generation is provided by our service partners in the UK and Ireland, and by landlords in other locations. Water is measured in m^3, and waste is measured in metric tonnes. **Electricity transmission and distribution** Electricity transmission and distribution (T&D) is the energy it takes to transfer electricity from generator to end-user. It's measured in kWh and converted CO_2e. **Homeworking** Emissions from homeworking are estimated as per the methodology worked through from the EcoAct homeworking emissions whitepaper 2020. The data calculated through the methodology complements the Operational emissions: Protocol for three areas of consumption; 1) average regional emissions from office equipment and lighting, 2) emissions from heating, and 3) emissions from cooling (where geographically relevant). This is multiplied by the number of contracted hours where employees are not at an Aviva office location, and working weeks. This data is in respect of Aviva's businesses in the UK, Canada and Ireland only. Homeworking emissions are not currently within the scope of external assurance and are not reported within our Streamline Energy and Carbon Reporting table (SECR) but we count in our carbon totals and purchase carbon credits to offset.
Source	The Group's environmental system.

Operational emissions continued

% of CO_2e emissions from our operations offset annually/carbon offsets (tonnes – CO_2e)

Definition	Operational CO_2e emissions offset from our operations through the purchase of Gold Standard, Voluntary Carbon Scheme, and Carbon Emission Reduction carbon credits from energy efficiency, clean water provision and renewable energy generation projects from the voluntary carbon market.
Scope	This is reported for the period 1 January – 31 December. We include emissions from Group entities over which we have operational control as outlined in the section 'Operational emissions: Overview' in Aviva plc's TCFD on page 61.
Units	Percentage/Tonnes
Calculations and reporting method	We purchase voluntary emission reductions certified to the Gold Standard, Verified Carbon Standard and Certified Emission Reduction Standard. The carbon credits are delivered from community-based energy efficiency, clean water provision and renewable energy generation projects in developing countries via the voluntary carbon market. Once issued and purchased, the credits are retired to the respective carbon registry, so they cannot be used or sold again. We choose projects which not only reduce the amount of carbon being produced, but also have a high social impact. Because Aviva sources carbon credits from International carbon reduction and offset alliance (ICROA) accredited companies, they come with a guarantee over the carbon saving. In our reporting, there is an estimation in the volume of credits required in the final period of the year. Therefore, our reporting of this metric may include offsets that have been purchased and that Aviva has committed to retire at the reporting date, by communication to the broker.
Source	The Group's environmental system.

Scope 1 and 2 – location-based emissions (tCO_2e)/£m GWP

Definition	GHG intensity calculated as total quantity of Scope 1 and 2 (location-based) emissions per £m gross written premiums (GWP).
Scope	This is reported for the period 1 January – 31 December. We include emissions from Group entities over which we have operational control as outlined in the section 'Operational emissions: Overview' in Aviva plc's TCFD on page 61.
Units	Tonnes CO_2e (tCO_2e) / £ million GWP.
Calculations and reporting method	This GHG intensity is calculated as: total quantity of Scope 1 and 2 (location-based) emissions divided by £m GWP. A location-based method reflects the average emissions intensity of grids on which energy consumption occurs. GWP is a financial measure disclosed in the Annual Report and Accounts. Data on Scope 1 and 2 (location-based) operational emissions are calculated based on the method highlighted in the external reporting criteria provided for Scope 1 and 2 operational emissions.
Source	Emission data is sourced from the Group's environmental system. GWP is a financial measure disclosed in the Annual Report and Accounts.

Operational emissions continued

Total location-based emissions (tCO_2e)/£m GWP	
Definition	GHG intensity calculated as total quantity of Scope 1, 2 (location-based) and operational Scope 3 emissions per £m GWP.
Scope	This is reported for the period 1 January – 31 December. We include emissions from Group entities over which we have operational control as outlined in the section 'Operational emissions: Overview' in Aviva plc's TCFD on page 61.
Units	Tonnes CO_2e (tCO_2e) / £ million GWP.
Calculations and reporting method	This GHG intensity is calculated as: total quantity of Scope 1, 2 (location-based) and operational Scope 3 emissions is divided by £m GWP. A location-based method reflects the average emissions intensity of grids on which energy consumption occurs. GWP is a financial measure disclosed in the Annual Report and Accounts. Data on Scope 1 and 2 operational emissions are calculated based on the method highlighted in the external reporting criteria provided for Scope 1 and 2 operational emissions.
Source	The Group's environmental system (Scope 1, 2 and operational Scope 3 emissions). GWP is a financial measure disclosed in the Annual Report and Accounts.

Total location-based emissions (tCO_2e)/employee	
Definition	GHG intensity calculated as total quantity of emissions from Scope 1, Scope 2 (location-based), and Scope 3 operational GHG emissions per employee.
Scope	This is reported for the period 1 January – 31 December. We include emissions from Group entities over which we have operational control as outlined in the section 'Operational emissions: Overview' in Aviva plc's TCFD on page 61. Employee is based on average headcount for the reporting period.
Units	Tonnes CO_2e (tCO_2e) / employees
Calculations and reporting method	This GHG intensity is calculated as: total quantity of Scope 1, 2 (location-based) and Scope 3 operational emissions is divided by total number of employees. A location-based method reflects the average emissions intensity of grids on which energy consumption occurs. The number of employees is based on headcount as at 31 December of the reporting year as provided by our Group HR team. Scope 1, 2 and Scope 3 operational emissions are calculated based on the method highlighted in the external reporting criteria provided for Scope 1, 2 and Scope 3 operational emissions.
Source	The Group's environmental system.

Operational emissions continued

Scope 1 and 2 market-based emissions (tCO_2e)/£m GWP	
Definition	GHG intensity calculated as total quantity of Scope 1 and 2 (market based) emissions per £m gross written premiums (GWP).
Scope	This is reported for the period 1 January – 31 December. We include emissions from Group entities over which we have operational control as outlined in the section 'Operational emissions: Overview' in Aviva plc's TCFD on page 61.
Units	Tonnes CO_2e (tCO_2e) / £ million GWP.
Calculations and reporting method	This GHG intensity is calculated as: total quantity of Scope 1 and 2 (market based) emissions divided by £m GWP. A market-based method reflects the average emissions intensity of grids on which energy consumption occurs. GWP is a financial measure disclosed in the Annual Report and Accounts. Data on Scope 1 and 2 (market based) operational emissions are calculated based on the method highlighted in the external reporting criteria provided for Scope 1 and 2 operational emissions.
Source	The Group's environmental system. GWP is a financial measure disclosed in the Annual Report and Accounts.

Total market-based emissions (tCO_2e)/£m GWP	
Definition	GHG intensity calculated as total quantity of Scope 1, 2 (market based) and operational Scope 3 emissions per £m GWP.
Scope	This is reported for the period 1 January – 31 December. We include emissions from Group entities over which we have operational control as outlined in the section 'Operational emissions: Overview' in Aviva plc's TCFD on page 61.
Units	Tonnes CO_2e (tCO_2e) / £ million GWP.
Calculations and reporting method	This GHG intensity is calculated as: total quantity of Scope 1, 2 (market based) and operational Scope 3 emissions is divided by £m GWP. A market-based method reflects the average emissions intensity of grids on which energy consumption occurs. GWP is a financial measure disclosed in the Annual Report and Accounts. Data on Scope 1 and 2 operational emissions are calculated based on the method highlighted in the external reporting criteria provided for Scope 1 and 2 operational emissions.
Source	The Group's environmental system (Scope 1, 2 and operational Scope 3 emissions). GWP is a financial measure disclosed in the Annual Report and Accounts.

Operational emissions continued

Total market-based emissions (tCO_2e)/employee	
Definition	GHG intensity calculated as total quantity of emissions from Scope 1, Scope 2 (market based), and Scope 3 operational GHG emissions per employee.
Scope	This is reported for the period 1 January – 31 December. We include emissions from Group entities over which we have operational control as outlined in the section 'Operational emissions: Overview' in Aviva plc's TCFD on page 61. Employee is based on average headcount for the reporting period.
Units	Tonnes CO_2e (tCO_2e) / employees.
Calculations and reporting method	This GHG intensity is calculated as: total quantity of Scope 1, 2 (market based) and Scope 3 operational emissions is divided by total number of employees. A market-based method reflects the average emissions intensity of grids on which energy consumption occurs. Employees number is based on headcount as at 31 December of the reporting year as provided by our Group HR team. Scope 1, 2 and Scope 3 operational emissions are calculated based on the method highlighted in the external reporting criteria provided for Scope 1, 2 and Scope 3 operational emissions.
Source	The Group's environmental system.

Operational carbon emissions – absolute	
Definition	Absolute CO_2e data includes emissions from our buildings, business travel, water and waste to landfill as generated during the year.
Scope	This is reported for the period 1 January – 31 December. We include emissions from Group entities over which we have operational control as outlined in the section 'Operational emissions: Overview' in Aviva plc's TCFD on page 61.
Units	Tonnes CO_2e (tCO_2e).
Calculations and reporting method	Data on Scope 1, 2 and 3 operational emissions are calculated based on the method highlighted in the metric description provided in the operational emissions summary of this report. The previous years' data is adjusted for comparison with the current reporting period's data considering any adjustments from structural changes or material changes to the emission factors.
Source	The Group's environmental system.

Financed emissions	
Definition	Our financed emissions metric covers the GHG emissions which Aviva finance through its investments under Scope 3 Category 15 of the GHG Protocol.
Scope	The emissions are based on the latest available reported data (and estimated data if no reported emissions are available) for a single calendar year. Lifetime emissions and avoided emissions are not currently included. Only Scope 1 and 2 emissions of the investee companies are measured. Scope 3 emissions will be reported once it is of sufficient quality. The emissions are based on the latest available reported data or estimated data (if we are not able to obtain reported data) in respect of Aviva plc and its subsidiaries, associates and joint ventures based on the Group's holding. Financed emissions for our shareholder, with-profit and policyholder funds are calculated currently for the following asset classes: 1. Credit (corporate bonds). 2. Equities.
Units	GHG emissions are measured in tonnes CO_2 equivalent (tCO_2e). In addition, the carbon intensity calculations is as follows: 1. Weighted average carbon intensity (WACI) revenue: Weighted average of investee company carbon intensity by revenue, i.e. GHG emissions (tCO_2e) divided by revenue of investee company in USD millions, where the weight reflects investment weight in the portfolio.

Financed emissions	
Calculation and reporting method	The calculation methods used to calculate financed emissions are based on the 2nd edition of the Global GHG Accounting and Reporting Standard for the Financial Industry published by the Partnership for Carbon Accounting Financials (PCAF) on 19 December 2022. The metric covers 2 different measurement bases: 1. Absolute emissions which measure the financed emissions for Aviva in metric tonnes (tCO_2e). When combined with operational GHG emissions, this provides an indication of the current measurable emissions for Aviva. The financed emissions are attributed by taking the outstanding amount (whether market value or loaned amount) in the investee entity as a portion of the total value of the entity or asset. In the case of a company this is the Enterprise Value including Cash (EVIC) if listed. 2. Intensity using the most relevant intensity measurement basis (e.g, companies using a weighted average revenue-based emission intensity). 3. Financed emissions only covers certain asset classes, for which calculation methodologies exist externally and emissions data is available and meet our required quality thresholds as outlined further above. Our approach to measuring emissions is to use the highest quality data in line with the PCAF standard – as part of the disclosure we provide a breakdown of the PCAF data quality score.
Source	The metric is based on both asset data which is collected from internal Aviva systems and emissions data which is collected from various sources which are outlined in more detail below. The reported emission data includes the following sources: • MSCI[14] for Credit and Equities. MSCI base the data on corporate sources (such as Annual reports, Corporate Social Responsibility reports and company websites) and CDP (formerly Carbon Disclosure Project). See below for the sources used for estimated emissions: • MSCI[14] estimates for credit and equities. These are based on company sector listed company emissions only.

14 Certain information ©2022. MSCI ESG Research LLC. Reproduced by permission.

Investment in sustainable assets	
Definition	Our investment in sustainable assets is made up of four sub-categories: green assets, sustainability assets, social bonds and transition and climate-related funds. See the table below for more detail on the sustainable asset definition.
Scope	The investment in sustainable assets covers shareholder, participating/with-profit and policyholder funds. The scope does not include assets in external mandates which are managed by Aviva Investors.
Units	CAD ($) in billions
Calculation and reporting method	The investment in sustainable assets is presented at the end of the reporting period and presents assets which are recognised on the IFRS consolidated statement of financial position which meet the sustainable asset definition. The main categories of assets include infrastructure and real estate assets (both direct and debt) as well as listed bonds and loans. In addition, the underlying assets under management (AUM) of funds which fall within the definition are also included. The investment amount is based on the origination value of investments recognized in the period to 31 December 2022 (with a comparative at 31 December 2021). Where origination value is not available, market values are used. To the extent market values are used they will include any movement in the market value in the period and as well as the impact of disposals/drawdowns. All sustainable assets excluding bonds and real estate are valued on an origination basis, bonds are valued on a market value basis. The comparative period amount has been prepared on a like-for-like basis with the current year based on the sustainable asset definition table further below.
Source	The metric is based on asset data collected from internal Aviva systems. In respect of bonds, data from the Climate Bonds Initiative (CBI) is used to determine whether the bonds are green, social or sustainability (including sustainability-linked) assets. In respect of real assets (direct and debt), the respective CBI methodologies for green bond screening, and social and sustainability bond screening will be used to determine if the assets are green, social or sustainability assets.

Sustainable asset definition – split by asset class

Asset class	Green assets	Sustainability assets	Social bonds	Transition and climate-related funds
Infrastructure assets (direct and debt)	Energy, Transport, Water (including nature related solutions), Waste, Land Use categories identified as eligible under CBI green bond database methodology (2022) – this includes green energy such as solar electricity, offshore and onshore wind.	Non-electrified passenger rail and ICE powered urban public transport.		
Real estate (direct and debt)	Categories defined as eligible under CBI green bond database methodology (2022). This category includes properties with EPC ratings of A and above as well as BREEAM of excellent and outstanding.			
Bonds and loans	In CBI green bond database and benefits from an external review[15].	Tagged sustainability in CBI social and sustainability bond database (which includes sustainability and sustainability-linked bonds) and benefits from an external review[15]. Sustainability linked loans which meet the Sustainability-Linked Loan Principles (SLLP) from the Loan Market Association (LMA) and benefits from an external review[15].	Tagged social in CBI social and sustainability bond database and benefits from an external review[15].	
Funds				Climate transition funds[16] Social transition fund Natural capital transition fund Climate/decarbonization venture capital funds[17]

15 An external review is an assessment carried out by an independent third party and includes third party assurance, second party opinions (SPOs), verification under the Climate Bonds certification and bond ratings by a rating agency. This assessment will consider the green, social or sustainability credentials of the issuance against an internationally recognized framework (such as the Green Bond Principles).

16 Climate transition funds include only Climate Transition European Equity Fund (CTEF), Climate Transition Global Equity Fund (CTGE), Climate Transition Global Credit Fund (CTGC) and Climate Transition Real Assets Fund (CTRA).

17 This includes the Clean Growth Fund (CGF), EIP Deep Decarbonization Frontier Fund LLP and Environmental Technologies Fund (ETF). These funds are not managed by Aviva Investors and hence we only recognize our direct investment.

Weather-related losses	
Definition	Aviva's physical risk is measured through the weather-related loss metric. The impact of weather on our Combined Operating Ratio (COR) as well as the actual weather losses impact versus expected losses is calculated. COR is a financial measure of General Insurance (GI) underwriting profitability calculated as total underwriting costs (including claims) in our GI entities expressed as a percentage of net earned premiums. A COR below 100% indicates profitable underwriting. Weather events in the following business units are classed as catastrophe (CAT) events: • UK*: flood, wind and storm surge, earthquakes and freeze; • Ireland*: flood, wind and storm surge, flood and freeze; and • Canada: flood, windstorm, hail and wildfire.
Scope	This metric is only applicable to the General Insurance (GI) businesses in UK, Ireland and Canada. Weather-related losses in UK and Ireland include both attritional and CAT weather-related claims, while weather-related losses in Canada only considers CAT claims. A catastrophic (CAT) event in Canada is "An event or series of events where the nature or duration is such that ordinary claims handling processes and resources need immediate change and/or strengthening, so that customer service and claims control are maintained. This typically will exceed $5 million or 500 claims."
Units	Actual weather-related losses versus expected losses: percentage (%) Weather impact on Aviva's Combined Operating Ratio (COR): percentage (%)
Calculation and reporting method	The expectation for weather-related losses is based on the long-term average (LTA). The LTA takes into account the volume of business written and the reinsurance structure in place during the relevant accident year. Actual weather-related losses are based on paid, reported and incurred but not reported (IBNR) weather-related claims for the relevant accident year. The weather losses, both actual and expected, are presented net of the reinsurance programs in place.
Source	The metric is based on actual and forecast claims and reinsurance data obtained from the financial consolidation system.

* Please note that these do not apply to Aviva Canada.

Cautionary statements

Climate-related cautionary statement

Climate metrics

The climate metrics, projections, forecasts and other forward-looking statements used in this document should be treated with special caution, in particular as they are more uncertain than, for example, historical financial information, and given the wider uncertainty around the evolution and impact of climate change.

Climate metrics include:

- estimates of historical emissions and historical climate change; and
- forward-looking climate metrics, such as ambitions, targets, climate scenarios and climate projections and forecasts.

Our understanding of climate change and its impact continue to evolve. Accordingly, both historical and forward-looking climate metrics are inherently uncertain and, therefore, less decision-useful than metrics based on historical financial statements. Below we provide a non-exhaustive list of some of the challenges associated with using climate metrics in more detail.

1. **Methodologies for estimating and calculating GHG emissions or emissions intensities and other climate-metrics vary widely**

   There is a lack of standardization and comparability with many diverging frameworks and methodologies for calculating climate metrics.

   In particular:

   - Some methodologies use company-specific historical emissions data while others result in estimation of emissions based on sectoral or geographical data or averages. Of those that incorporate emissions ambitions and targets, there are different criteria for the types of ambitions and targets that can and cannot be used.
   - Methodologies vary in their use of Scope 1, Scope 2, and/or Scope 3 GHG emissions. Some use only Scope 1 data, while others use Scope 1 and 2, and yet others take Scope 1, 2, and 3 GHG emissions into account.
   - Certain methodologies take cumulative historical GHG emissions into account while others incorporate point-in-time assessments of emissions intensity.

   There is a risk that climate metrics may result in over or under estimations.

2. **Climate metrics are complex and require making extensive judgements and assumptions**

   Climate metrics and data are based on underlying assumptions made about climate change policies, technologies and other matters that are uncertain or not yet known. Any material change in these variables may cause the assumptions, and therefore, the climate metrics and data based on those assumptions, to be incorrect.

   In particular:

   - Temperature scenarios generally include a set of assumptions that incorporate existing or planned global or regional policies, or business-as-usual sociodemographic projection, and projections for technological progress (including negative emissions and sequestration technologies), none of which may happen as contemplated.
   - Some assumptions attempt to compensate for existing data gaps, such as past emissions trends or comparable and reliable company specific ambitions and targets. These assumptions may prove to be incorrect and not accurately represent the actual data.

   Design issues specific to financed emissions raise challenges, particularly around allocating emissions to the wide range of invested assets and financed activities. Financed emissions from owning one percent of a company might include one percent of that company's emissions; a portfolio can rapidly double count if aggregate financed emissions include each underlying company's own Scope 3 upstream and downstream emissions. The calculation becomes significantly more complex with other activities, such as when a financial institution serves as a counterparty or is one of multiple underwriters of a financing.

   There is a risk that the judgement exercised, or the estimates or assumptions used, may subsequently turn out to be incorrect.

3. There is a lack of accurate, verifiable, reliable, consistent and comparable climate-related data

Climate-related risks and opportunities and their potential impacts and related metrics depend on access to accurate, verifiable, reliable, consistent and comparable climate-related data. The insurance industry, like other sectors, is grappling with data availability and quality.

In particular:

- Climate-related data may not be generally available from counterparties or customers or, if available, it is generally variable in terms of quality and, therefore, may not be accurate, verifiable, reliable, consistent or comparable.
- Companies may rely on aggregated information based on high-level sector data developed by third parties that may be prepared in an inconsistent way using different methodologies, interpretations or assumptions.
- Data is less readily available for some invested asset types and there may also be data gaps, particularly for private companies, that are filled using “proxy” or other data, such as sectoral average, again developed in different ways.
- There is no-single, global, cross-sector data provider that adequately and consistently covers the needed scope for data to analyse emissions and assess physical and transactional risks across operations and investment portfolios.
- While regulators and standard-setters mandate additional disclosure of verified climate-related data by companies across sectors, there are potential gaps between needed and available data.
- The availability of climate, industrial classification, energy use and efficiency data, including information used as a proxy for that data (e.g. EPC rating) depends on a variety of public, private and civic sector sources. Historically, climate data was largely environmental and weather data was produced by government agencies. However, the challenge is finding the relevant sources, if they exist, and then validating, cleaning and standardizing the data in an accessible form or format.

Further development of reporting standards, scientific understanding of climate change and global and regional laws could materially impact the metrics, ambitions and targets contained within this report and may mean that subsequent reports do not allow a reader to compare metrics, ambitions and targets on a like for like basis. Certain disclosures are likely to be amended, updated, recalculated and restated in future reports.

There are many uncertainties, assumptions, judgements, opinions, estimates, forecasts and non-historic data surrounding the climate metrics, data, models and scenarios used to create them; and the measurement technologies, analytical methodologies and services that support them remain in an early stage.

Accordingly, the quality and interoperability of these models, technologies and methodologies is also at a relatively early stage. Significant data gaps in sectors, subsectors and across invested asset classes are impeding not only climate risk management, but also the development of mitigation and adoption of strategies, as well as aspects of operations and credit risk and investment analysis that depend on data-informed processes.

In summary, the information in this report is subject to significant uncertainties and risks which may result in the group being unable to achieve the current plans, expectations, estimates, ambitions, targets or projections. Some of the information in this document has been or may have been obtained from public and other sources and Aviva has not independently verified it. Aviva makes no representation or warranty regarding its completeness, accuracy, fitness for a particular purpose or non-infringement of such information.

Other forward-looking statements

This document contains, and we may make, other verbal or written 'forward looking statements' with respect to certain of Aviva's plans and current goals and expectations relating to its future financial condition, performance, results, strategic initiatives and objectives.

Forward-looking statements include, without limitation, projections, estimates, commitments, plans, approaches, ambitions and targets (including, without limitation, ESG commitments, ambitions, goals and targets). Statements containing the words 'believes', 'intends', 'expects', 'projects', 'plans', 'will', 'seeks', 'aims', 'may', 'could', 'outlook', 'objective', 'predict', 'likely', 'target', 'goal', 'guidance', 'trends', 'future', 'estimates', 'potential' and 'anticipates', and words of similar meaning, are forward looking. By their nature, all forward-looking statements involve risk and uncertainty. Accordingly, there are or will be important factors that could cause actual results to differ materially from those indicated in these statements.

Factors that could cause actual results to differ materially from those described in these statements include (but are not limited to):

- regulatory measures addressing climate change and broader sustainability-related issues; and
- the development of standards and interpretations, including evolving requirements and practices in ESG reporting; and the ability of the Group, together with governments and other stakeholders to measure, manage, and mitigate the impacts of climate change and broader sustainability-related issues effectively.

A detailed description of other relevant factors is contained within Aviva's most recent annual report available on its website at http://aviva.com/reports.

Due to such uncertainties and risks, readers are cautioned not to place undue reliance on such forward-looking statements. Forward looking statements in this report are current only as of the date on which such statements are made and we do not undertake to update our forward-looking statements except as required by applicable law and do not provide any representation, assurance or guarantee that the occurrence of the events expressed or implied in any forward-looking statements will actually occur.

The information in this document is unaudited, except for those metrics indicted with an AS symbol, indicating reasonable assurance or limited assurance, respectively. This report has been prepared for, and only for, the members of the Company, as a body, and no other persons. The Company, its directors, employees, agents or advisers do not accept or assume responsibility to any other person to whom this document is shown or into whose hands it may come, and any such responsibility or liability is expressly disclaimed.

Independent assurance

Independent practitioner's reasonable assurance report on the selected performance metrics as presented in the Aviva Canada 2022 Climate-related Financial Disclosure

To the Board of Directors of Aviva Canada Inc. ("Aviva Canada")

We have undertaken a reasonable assurance engagement on the selected performance metrics detailed below ("the subject matter information") as presented in Aviva Canada's 2022 Climate-related Financial Disclosure ("the Report") during the period from January 1, 2022 to December 31, 2022.

Our reasonable assurance engagement was performed on the following subject matter information:

Performance metrics	2022
Weighted average carbon intensity of credit and equities	50 tons CO_2e/$M
Investment in sustainable assets	$449 M CAD
Actual weather-related losses versus expected losses	-35%

Management's responsibility

Management is responsible for the preparation of the subject matter information in accordance with the following applicable criteria:

- Task Force on Climate-Related Financial Disclosures (TCFD), Implementing the Recommendations of the TCFD, Supplemental Guidance for the Financial Sector;
- Partnership for Carbon Accounting Financials (PCAF); and
- Management's internally developed reporting criteria[1] as published on March 8, 2023 and the definition of each performance metric established in Note 6 of the 2022 Climate-related Financial Disclosure on pages 58–69.

Management is also responsible for such internal control as management determines necessary to enable the preparation of the subject matter information that is free from material misstatement, whether due to fraud or error.

1 The maintenance and integrity of Aviva Canada Inc.'s website is the responsibility of Aviva Canada Inc.; the work carried out by PricewaterhouseCoopers LLP does not involve consideration of these matters and, accordingly, PricewaterhouseCoopers LLP accepts no responsibility for any changes that may have occurred to the reported information or criteria since they were posted on the website.

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Our responsibility

Our responsibility is to express a reasonable assurance opinion on the subject matter information based on the evidence we have obtained. We conducted our reasonable assurance engagement in accordance with Canadian Standard on Assurance Engagements (CSAE) 3000, *Attestation Engagements Other than Audits or Reviews of Historical Financial Information*. This standard requires that we plan and perform this engagement to obtain reasonable assurance about whether the subject matter information is free from material misstatement.

Reasonable assurance is a high level of assurance, but is not a guarantee that an engagement conducted in accordance with this standard will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the decisions of users of our report. The nature, timing and extent of procedures selected depends on our professional judgment, including an assessment of the risks of material misstatement, whether due to fraud or error, and involves obtaining evidence about the preparation of the subject matter information in accordance with the applicable criteria. Our engagement included, among others, the following procedures performed:

- Making enquiries of management to obtain an understanding of the overall governance and internal control environment, and risk management processes relevant to the subject matter information;
- Evaluating the appropriateness of quantification methodology and reporting policies used, and the reasonableness of estimates made by Aviva Canada;
- Analytical reviews and trend analysis of the subject matter information;
- Sample testing the underlying source data to supportive evidence; and
- Evaluating the overall presentation of the subject matter information in the 2022 Climate-related Financial Disclosure.

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

Our independence and quality management

We have complied with the relevant rules of professional conduct/code of ethics applicable to the practice of public accounting and related to assurance engagements, issued by various professional accounting bodies, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

The firm applies Canadian Standard on Quality Management 1, *Quality Management for Firms that Perform Audits and Reviews of Financial Statements, or Other Assurance or Related Services Engagements*, which requires the firm to design, implement and operate a system of quality management, including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Significant inherent limitations

Emissions data used to calculate the weighted average carbon intensity of credit and equities are subject to inherent limitations given the nature and the methods used for determining such data. The selection of different but acceptable measurement techniques can result in materially different measurements. The precision of different measurement techniques may also vary.

Opinion

In our opinion, Aviva Canada's subject matter information during the period from January 1, 2022 to December 31, 2022, is prepared, in all material respects, in accordance with the applicable criteria.

Purpose of statement and restriction of use

The subject matter information has been prepared in accordance with the applicable criteria prepared by Aviva Canada's management to report to the Board of Directors. As a result, the subject matter information may not be suitable for another purpose. Our report is intended solely for Aviva Canada. We acknowledge the disclosure of our report, in full only, by Aviva Canada at its discretion, without assuming or accepting any responsibility or liability to any other third party in respect of this report.

PricewaterhouseCoopers LLP

Chartered Professional Accountants

Vancouver, British Columbia
July 28, 2023

Aviva Canada

2022 Climate-related Financial Disclosure