AVIVA INVESTORS

Climate Change: **Correcting The World's** Biggest Market Failure

24 September 2020

Steve Waygood
Chief Responsible Investment officer

Minute book entry of the first claim made to Aviva (then Hand in Hand) - 1697

It was then ordered that Mr Reynolds
the Treasurer Amounting to Seventeen pound five
Shillings and nine pence

Ordered that Mr Thomas Yeomans Bill be paid by ye Treasurer
for mending and Repairing Mr Randalls and Mr Hoares
Houses in Saint Stephens Alley in the Parish of St Margets
Westm being damnified by fire on the 16th day of April 1697
Amounting to one pound twelve Shillings

Ordered that Mr Raynes be desired to Stand Trustee in ye Place
of Mr Phillip Harman deceased

Ordered that Mr Steele be a Director

The reality of climate change

CO_2 concentrations up

405 parts per million in 2017

The highest level since the Pliocene era 3-5 million years ago

Ocean acidification

30%

CO2 emissions absorbed by Oceans

Global temperature increase

+1°C to 14.7°C

Since industrial revolution

Extreme weather

68% of all extreme weather events studied were made more likely or more severe by human caused climate change

Ice sheets melt

-413 Gt / year

Satellite data show that Earth's polar ice sheets are losing mass

Sea level rise

+3.7mm in 2018

Average increase of 3.15mm/year between 1993 and 2018

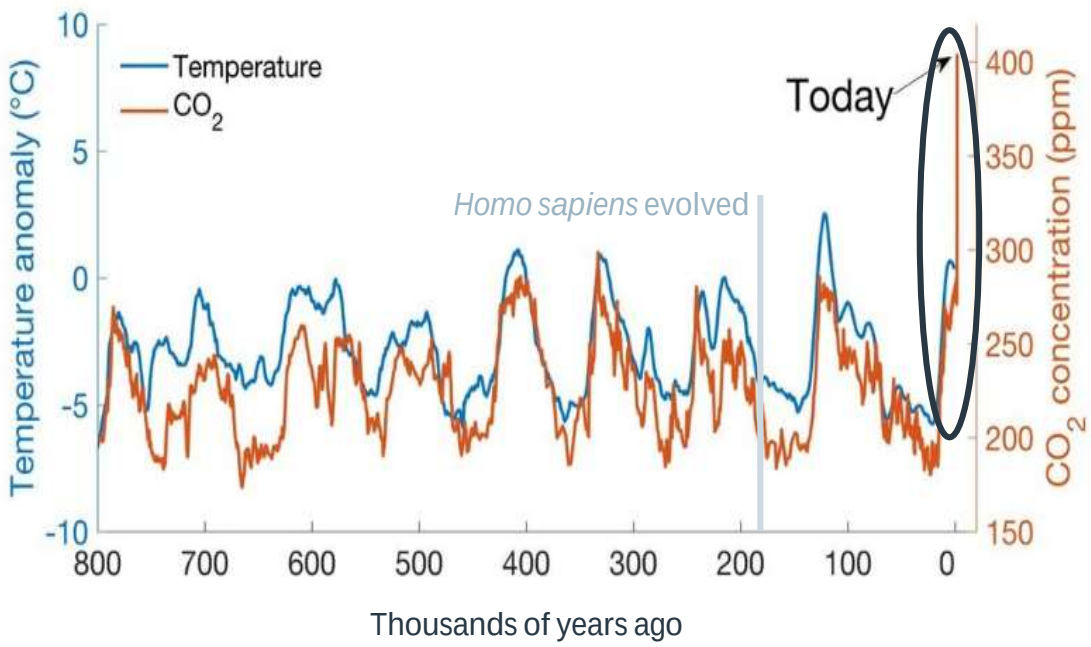
Past climates are an indicator of future climates, economies and societies can fall as well as rise

Source: World meteorological organization ; NASA Global Climate-Change; Institute for Public Policy, This is a crisis: Facing up to the age of environmental breakdown, Feb 2019; https://www.carbonbrief.org/mapped-how-climate-change-affects-extreme-weather-around-the-world

The colored strapline represents the annual global temperatures from 1850-2017. Warming Stripes, by Ed Hawkins, climate scientist in the National Centre for Atmospheric Science (NCAS) at the University of Reading.

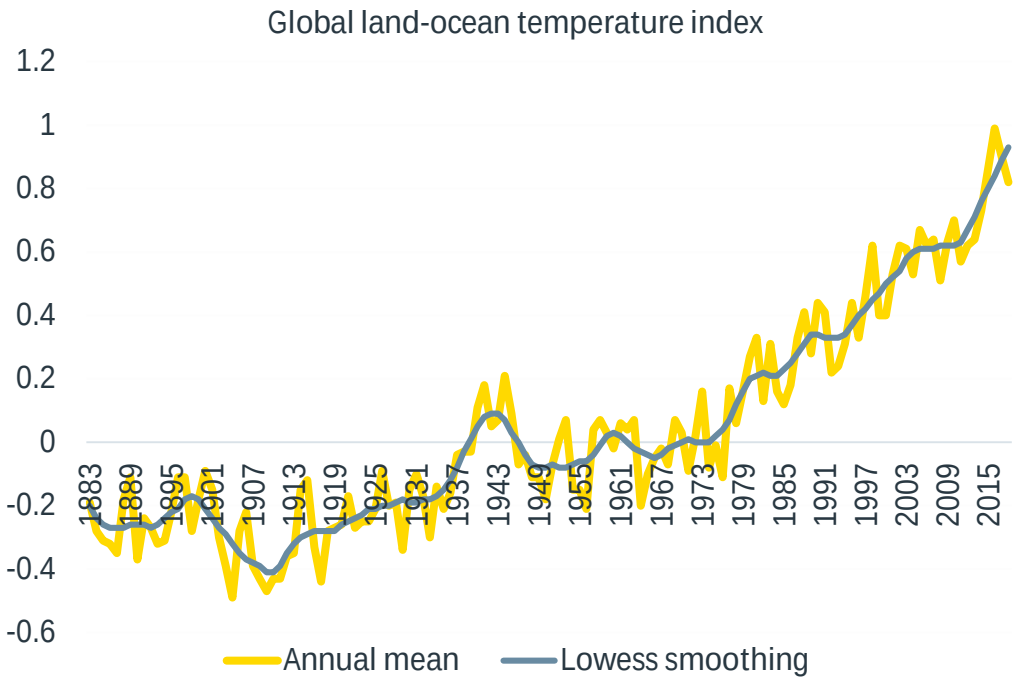
Past correlations, an indicator of future changes

$C0_2$ concentration and temperature **anomalies'** correlation, an omnious sign



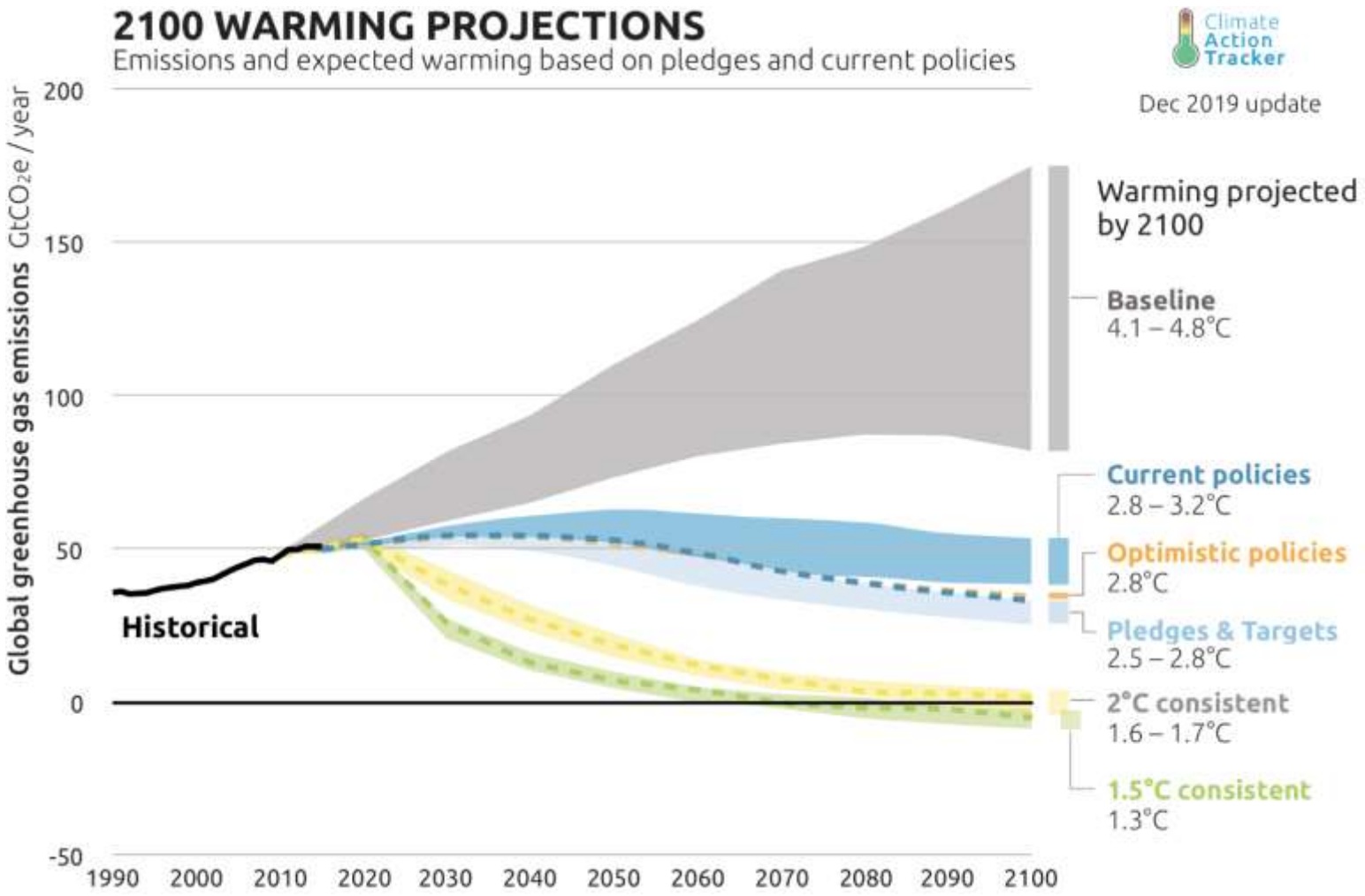
Data from Parrenin et al., 2013; Snyder et al., 2016; Bereiter et al., 2015.
Ben Henley and Nerilie Abram/The Conversation

Global surface temperatures change relative to 1951-1980 average



Data source: NASA's Goddard Institute for Space Studies (GISS). Credit: NASA/GISS

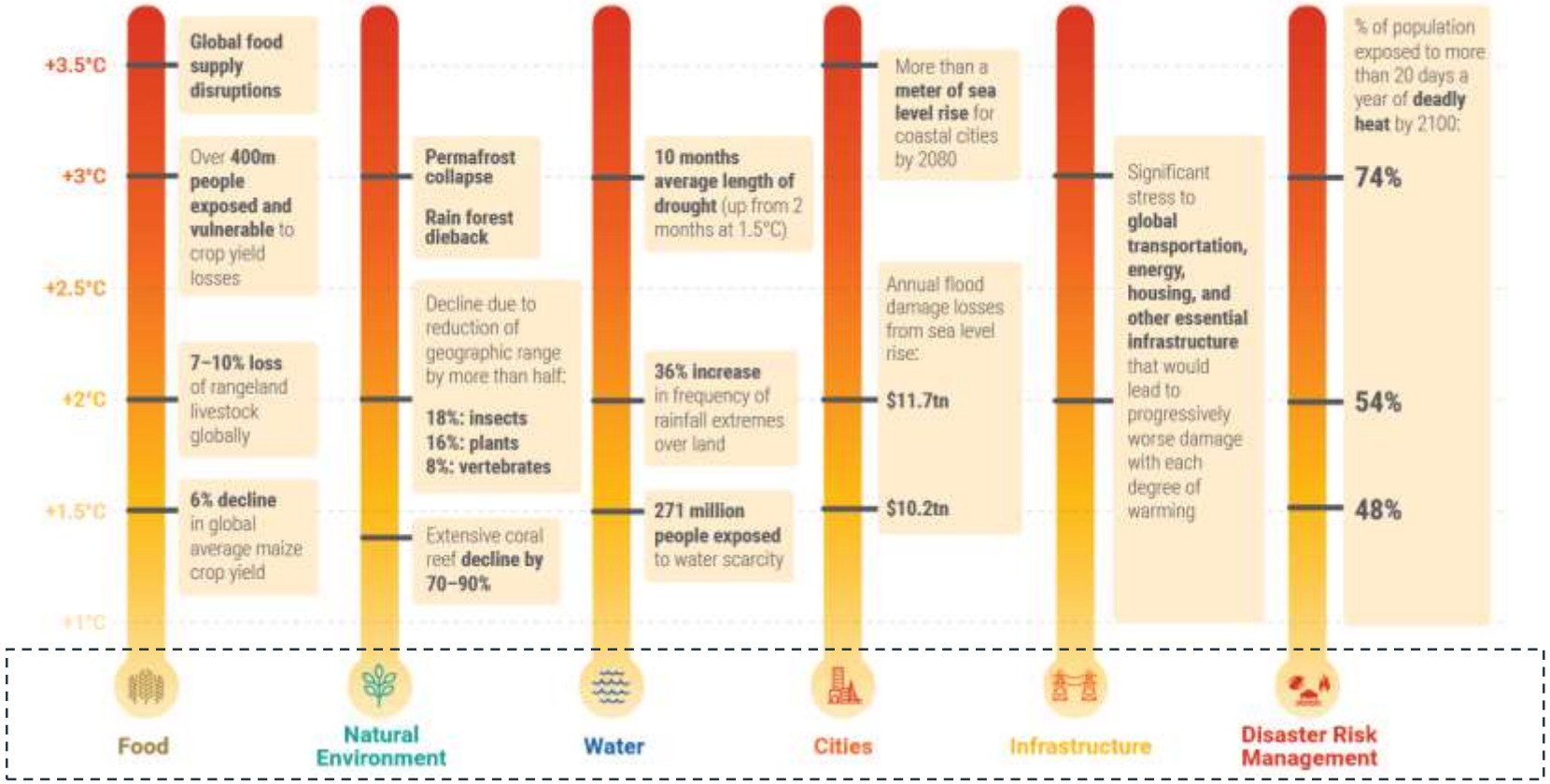
Where are we heading – political ambition vs. necessity



Source: Climate Action Tracker December 2019

The urgency of adapting to climate change

The Risk of Catastrophic Events Increases with Temperature



Investing $1.8 trillion in these areas (2020-2030) could generate $7.1 trillion in total net benefits

Source: World Resources Institute, adapted from the IPCC and others. Net cost/benefit analysis from Global commission on adaptation report September 2019.

Climate risk
Understanding the scale of the challenge

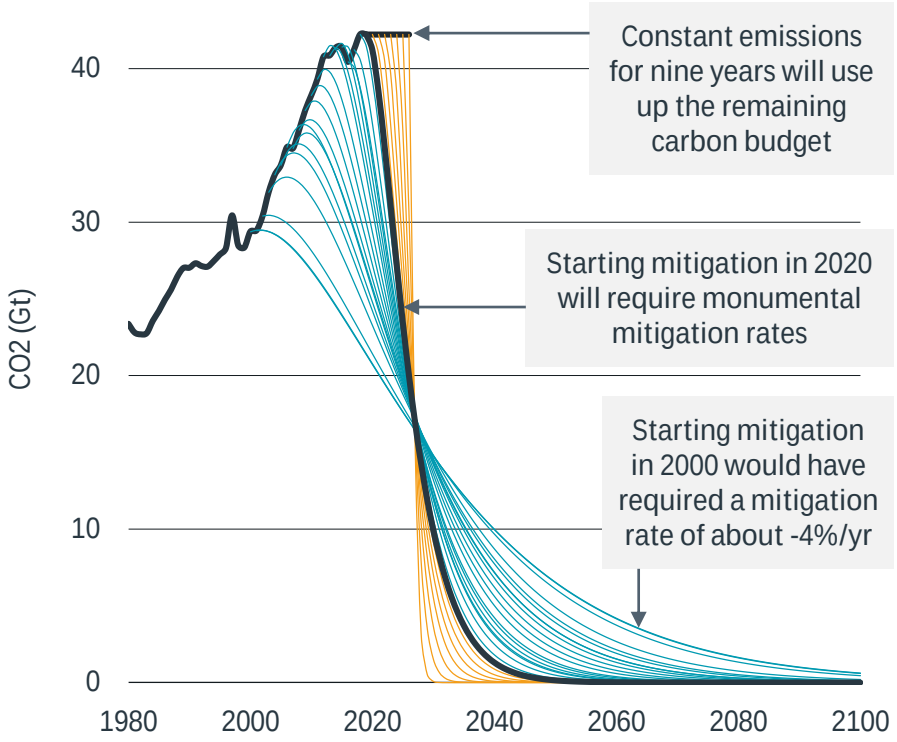
KEY FINDINGS

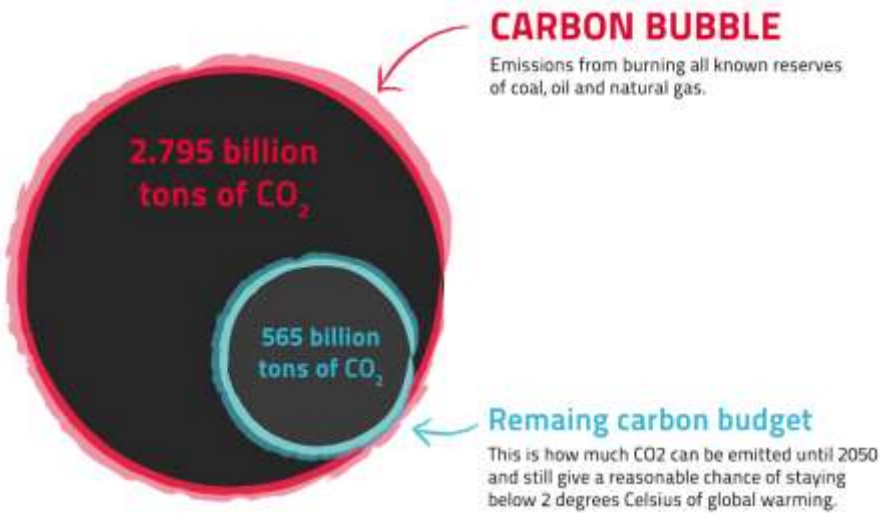
- The value at risk to manageable assets from climate change calculated in this report is US$4.2trn, in present value terms.
- The tail risks are more extreme; 6°C of warming could lead to a present value loss worth US$13.8trn, using private-sector discount rates.
- From the public-sector perspective, 6°C of warming represents present value losses worth US$43trn—30% of the entire stock of the world's manageable assets.
- Impacts on future assets will come not merely through direct, physical harms but also from weaker growth and lower asset returns across the board. The interconnected nature of the problem will reduce returns, even on investments unharmed by physical damage.

Thought leadership & research

What's next? Meeting the 1.5°C carbon budget

CO_2 mitigation curves: 1.5°C scenario





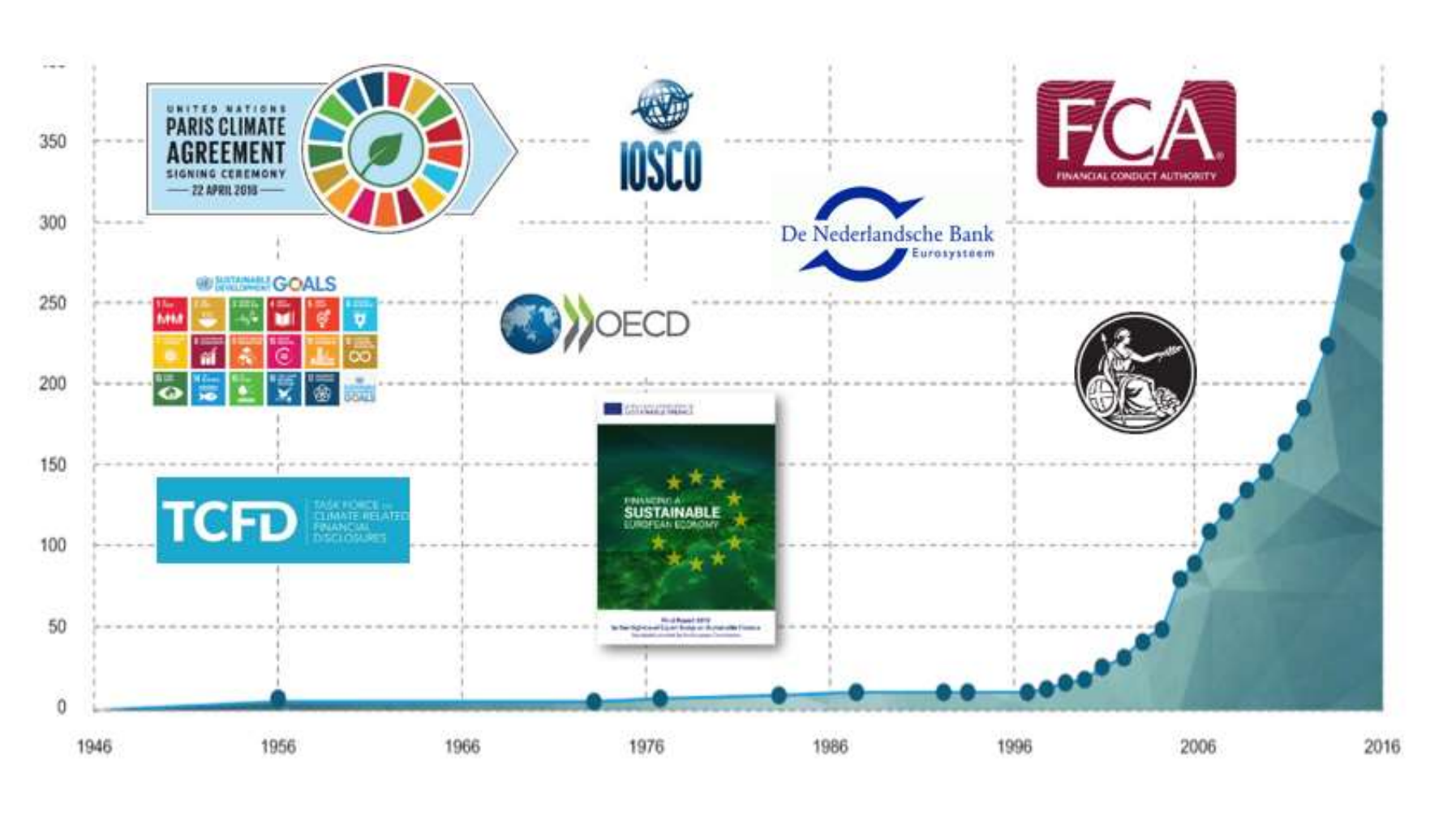
What can be done?

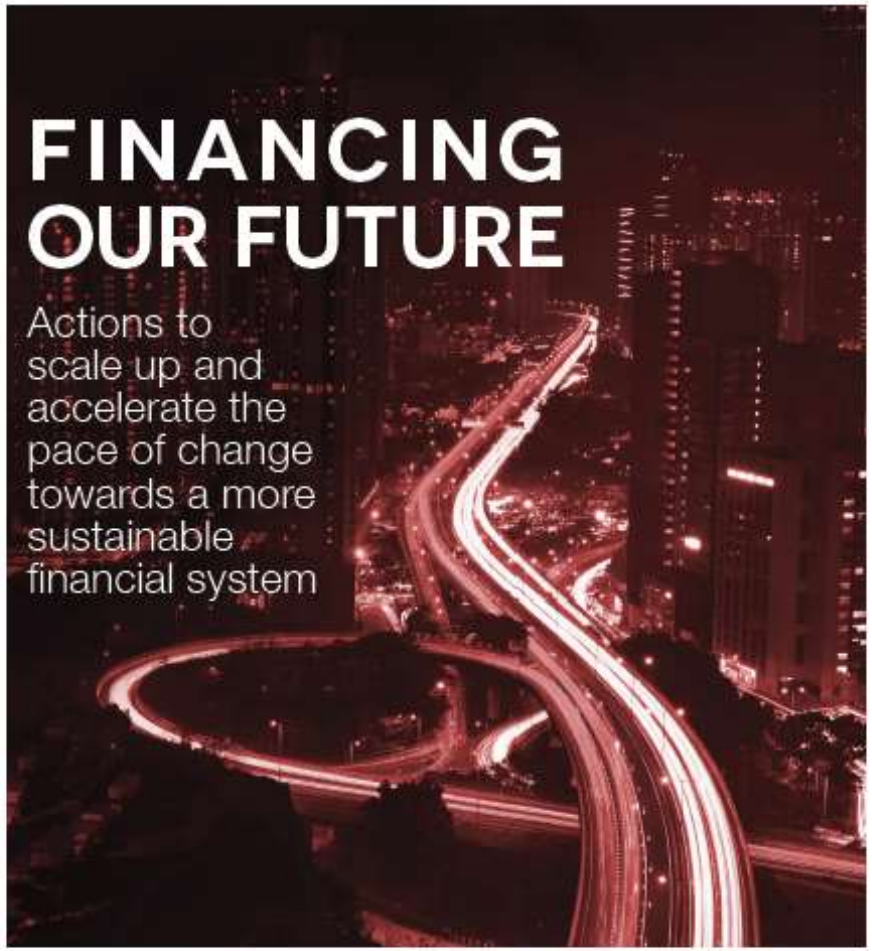
Reallocating capital to low carbon technologies and solutions

Source: Cicero, Andrew Robbens. CO2 mitigation curves to limit global heating to 1.5°C above pre-industrial levels , 2019. (Http://folk.uio.no/reoberan/t/global_mitigation_curves.shtml)

Policy-makers around the world are regulating sustainable finance

Many of these rules will drive market developments





A4S ACCOUNTING FOR SUSTAINABILITY

THE PRINCE'S CHARITIES

AVIVA INVESTORS

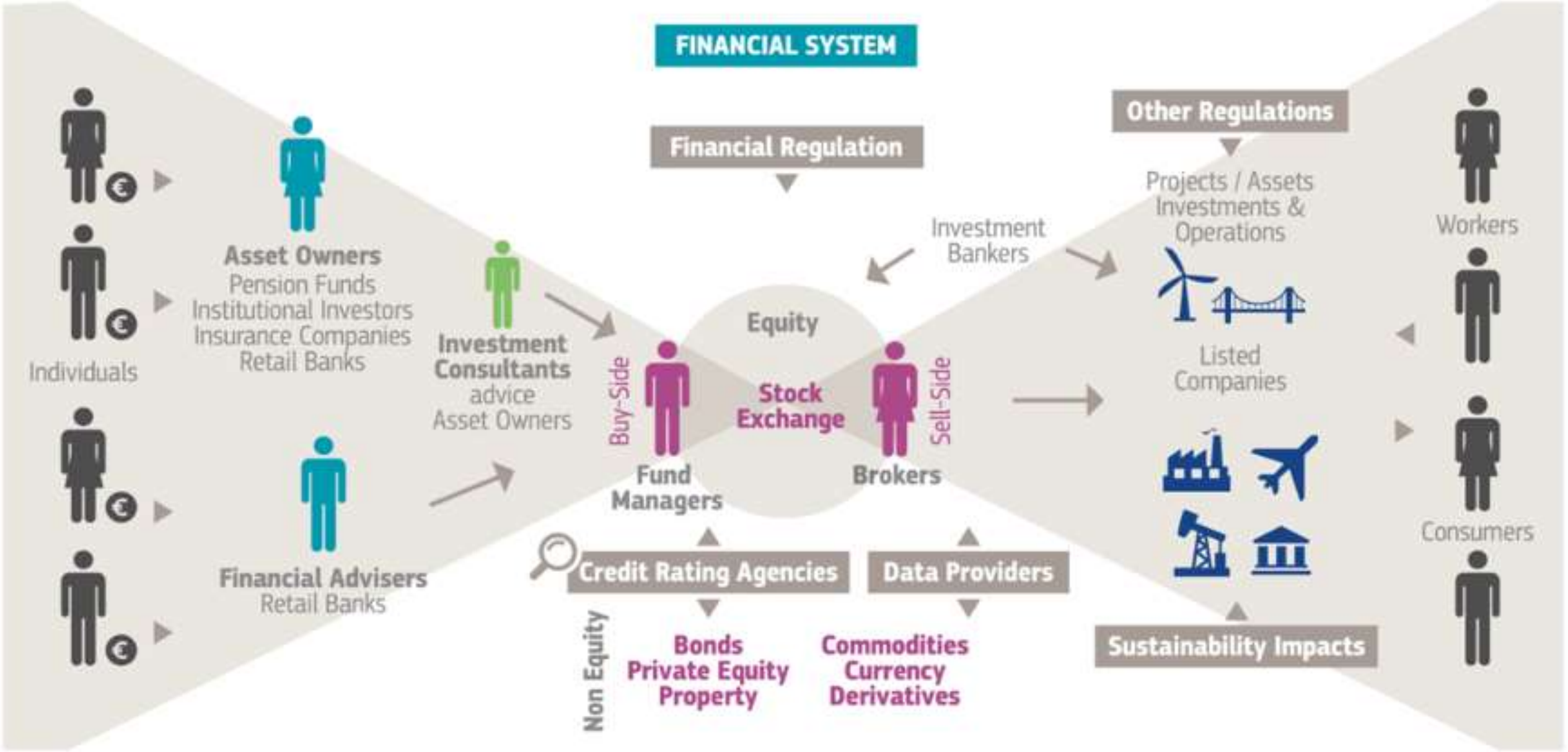
A Roadmap for Sustainable Capital Markets

Money Talks

A sustainable finance policy toolkit

It's not enough to make the European economy more sustainable – we need a financial sector that can back it up. Sustainable finance is an idea whose time has come. This toolkit sets out ways to help make it happen.

Get started



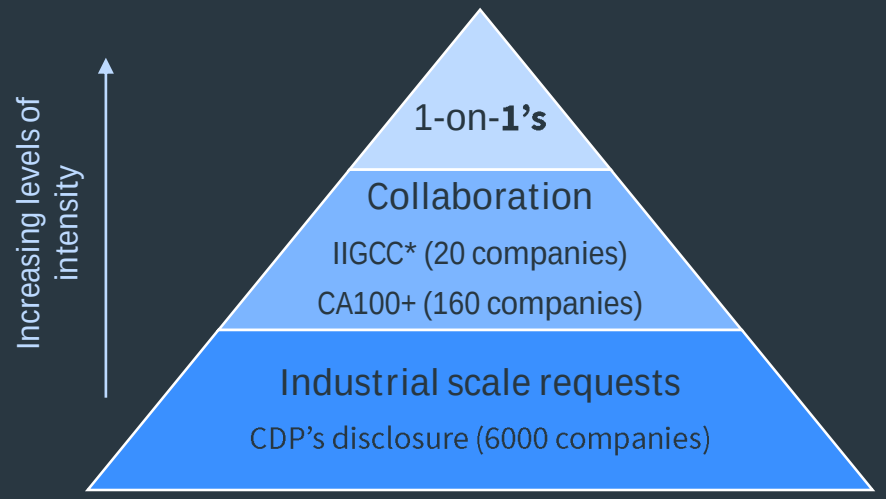
Source: Aviva Investors, European Political Strategy Centre

Driving change through active stewardship & reforms

Our voting policy encourages ESG disclosures

- 2001: withhold support for a company's if their disclosure on ESG issues is absent or non-existent
- 2019: withhold support for annual report and accounts (AR&A) if not sufficient climate disclosure (TCFD)

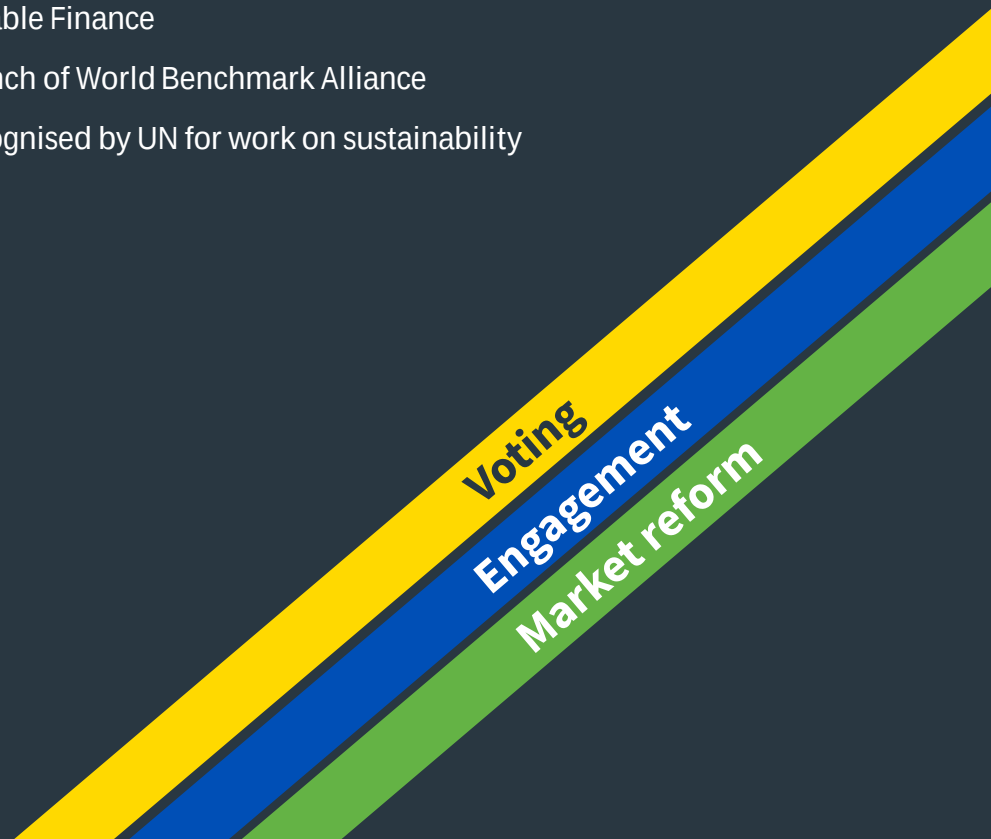
Engaging companies on climate transition



- IIGCC: Institutional Investor Group on Climate Change
- CA100+: Climate action 100

Creating the operating environment for climate transition through market reforms

- 2016 – Represented on Financial Stability Board's Taskforce on Climate-related Financial Disclosures
- 2016 – Joined European Commission's High Level Expert Group on Sustainable Finance
- 2018 – Launch of World Benchmark Alliance
- 2018 – Recognised by UN for work on sustainability



Our own strategic approach

Aviva is a strong advocate of the need for listed companies to publish consistent information to help business make better decisions and promote the transition to net-zero by 2050. Aviva has adopted and disclosed in accordance with the Taskforce on Climate-related Financial Disclosures (TCFD) recommendations for the last four years.

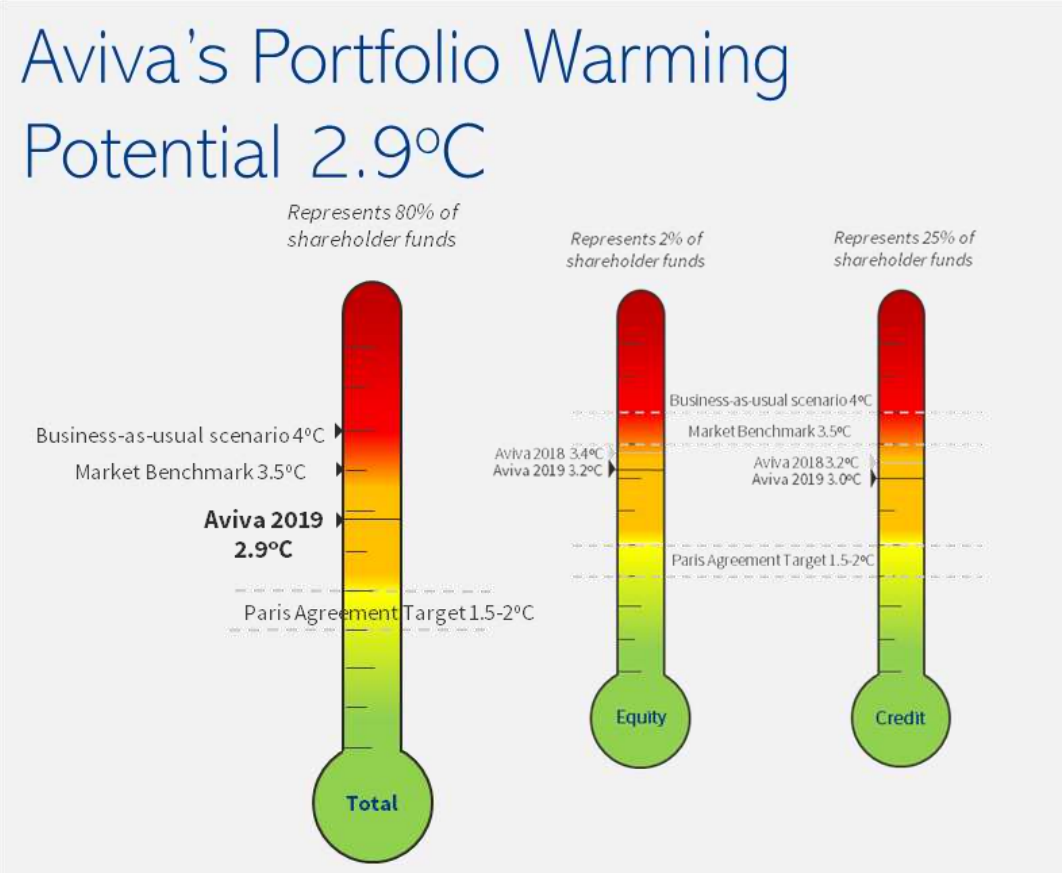
More accurate information will help financial institutions identify, assess, measure and manage the risks from the climate crisis and grasp opportunities to support the transition to a low carbon economy. It will also help our customers and investors understand how their money is invested and make more informed investment decisions.

https://www.aviva.com/social-purpose/climate-related-financial-disclosure/

Portfolio Warming Potential

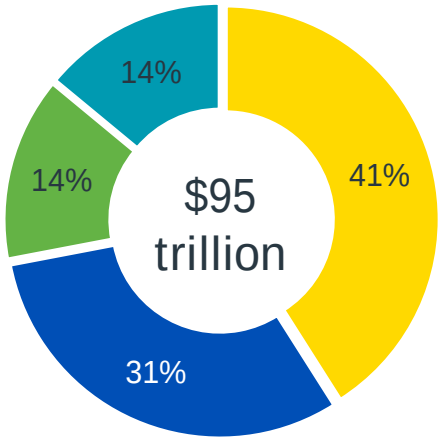
This metric measures the implied temperature rise of Aviva's shareholder funds and their alignment with the Paris Agreement 1.5°C target. The 2019 analysis found that the warming potential of our shareholder funds' equity portfolio, at 3.2°C, was 0.2°C lower than last year's result. The warming potential of our shareholder funds' corporate credit portfolio, at 3.0°C, was also 0.2°C lower than last year's result.

Warming potential (in °C) for Aviva shareholder funds as at 30/11/2019. Source: Aviva/ MSCI (Carbon Delta).

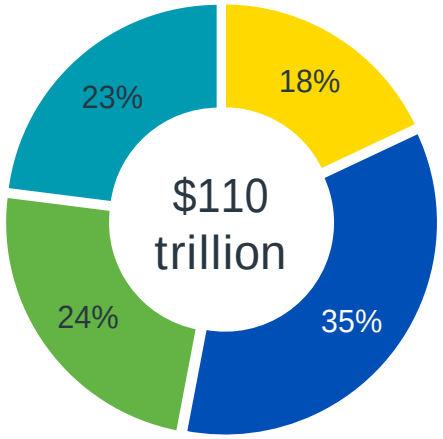


Huge investment needed in low-carbon energy infrastructure to meet 1.5°C ambition

Current Reference (existing plans and policies) case
Cumulative investments 2016-2050



Renewable Energy Roadmap (Remap) case
Cumulative investments 2016-2050



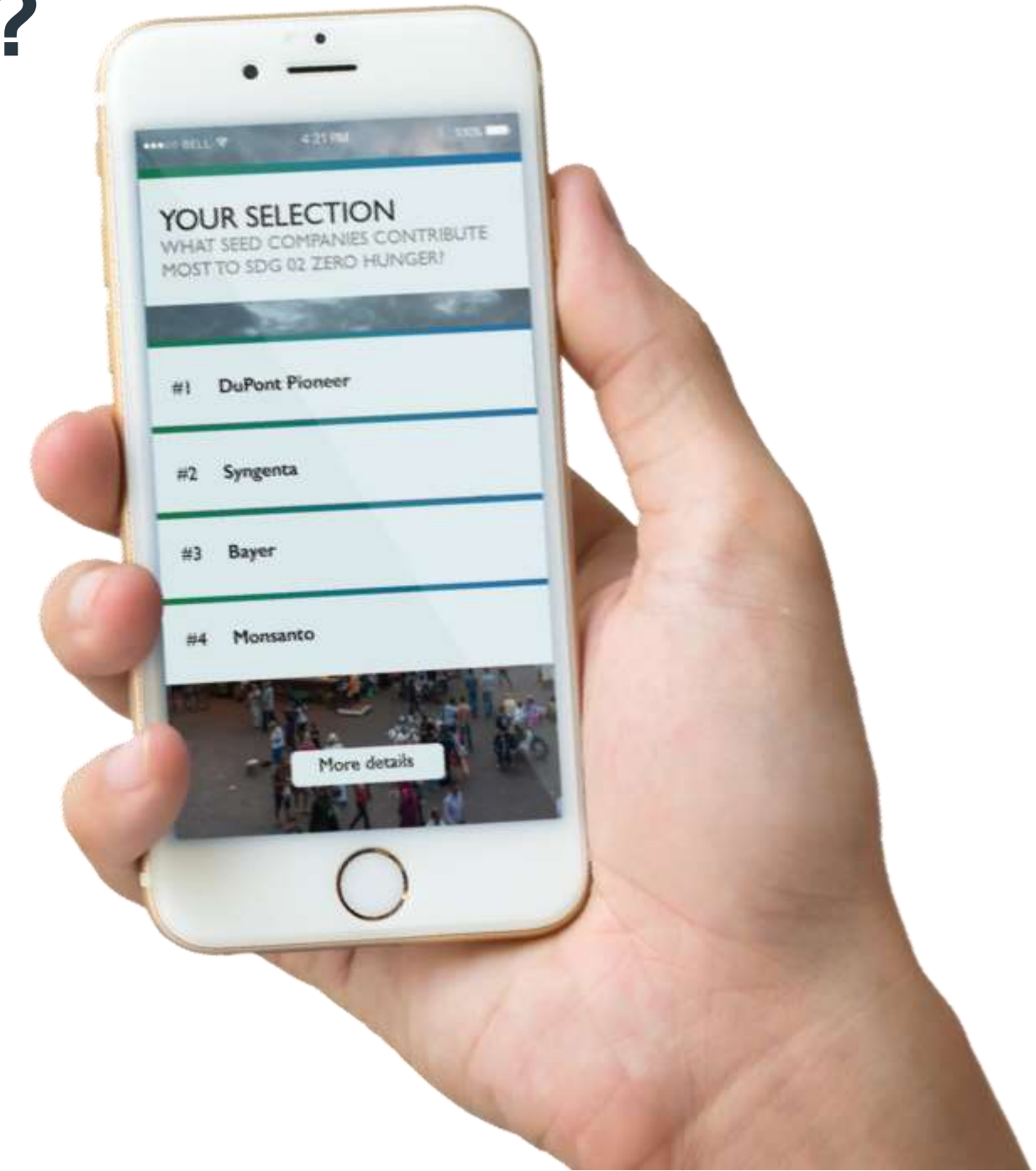
	Current reference case	Remap case	Change in investment
Fossil fuels and others*	$40trn	$20trn	-$20trn
Energy efficiency	$29trn	$37trn	+$8trn
Renewables	$13trn	$27trn	+$14trn
Electrification and infrastructure**	$13trn	$26trn	+$13trn
Total	$95trn	$110trn	+$15trn

Both an increase and significant shift in investment is needed

Source: Aviva Investors. IRENA. Notes* includes nuclear, carbon capture and storage (CCS). ** includes investment in power grids, ebergy flexibility, electrification of heat and transport application as well as renewable hydrogen. "Energy efficiency" includes efficiency measures deployed in end use sectors (industry, buildings and transport) and investments needed for building renovations and structural changes (excl. modal shift in transport). Renewables include investments needed for deployment of renewable technologies for power generation as well as direct end=-use applications (e.g. solar thermal, geothermal) USD throughout the report indicates the value in 2015

An International Platform for Climate Finance?

What’s next?


YOUR SELECTION
WHAT SEED COMPANIES CONTRIBUTE MOST TO SDG 02 ZERO HUNGER?
#1 DuPont Pioneer
#2 Syngenta
#3 Bayer
#4 Monsanto
More details

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Thank you

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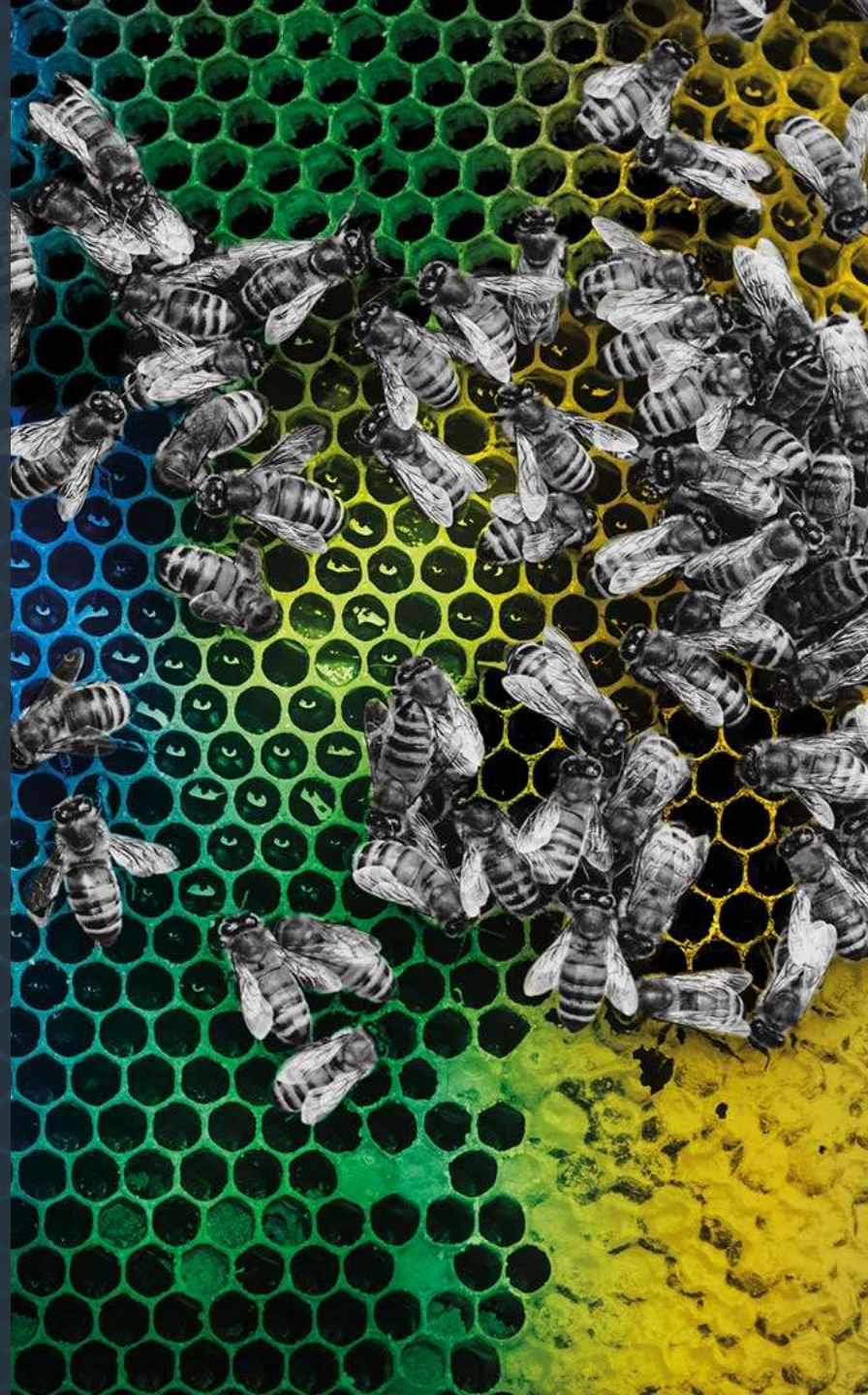
Appendix



Increased regulatory focus

- The PRA published in April 2019 a Supervisory Statement 3/19 that expects firms to: "*evidence how they monitor and manage the risks from climate change in line with their risk appetite statements (…) address these risks through their existing risk management frameworks, in line with board-approved risk appetite*".
- The PRA letter on managing climate-related financial risks builds on the SS3/19, provides observations on good practice, and sets out next steps for implementation.
- The joint PRA/FCA Climate Financial Risk Forum (CFRF) also published its guide to help the industry address these risks on 29 June 2020. The guide contains four chapters, covering risk management, scenario analysis, disclosures and innovation.
- The UK launched the Green Finance Strategy, on 2 July 2019. This strategy set out an expectation for all listed companies and large asset owners to disclose in line with the TCFD recommendations by 2022.
- The FCA (CP 20/3) is currently consulting on proposals to enhance climate-related disclosures of listed companies in line with the TCFD recommendations.
- The Department for Work and Pensions (DWP) have issued a consultation on mandatory TCFD climate disclosures for occupational schemes. Schemes with more than £5billion or more in assets will be required to have effective governance, strategy, risk management, and metrics and targets for the management of climate risks from October 2021, and to report on these in line with the TCFD's recommendations by the end of 2022.
- In addition, there are a number of 'non-financial' reporting initiatives coming down the track, e.g. EU Taxonomy Regulation with 1st wave of obligations comes into effect on 30 June 2021 and the Sustainable Finance Disclosure Regulation (SFDR)) with1st wave of obligations comes into effect on March 2021

Aviva Climate Strategy – 2020 Refresh

Aviva published its first strategic response to climate change in 2015. Having achieved the targets set as part of this strategic response, this year our climate strategy took another important step forward. We are widening the scope from primarily focusing on investments, to create a broader, joined-up approach covering investments, insurance, operations, disclosure, influence and community.

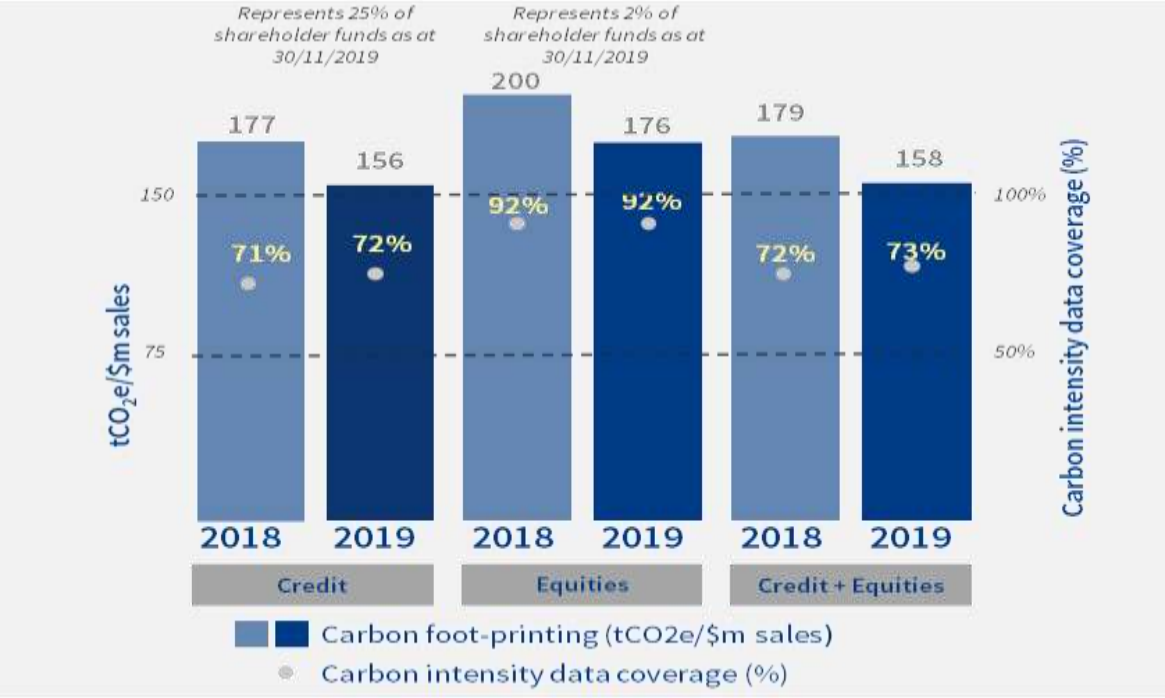
We commit to aligning our business to the 1.5°C Paris target. We have focused our efforts through pragmatic, commercially smart actions-to be a net zero asset owner by 2050.

Insurance	Investment	Operations
Disclosure	Influence	Community

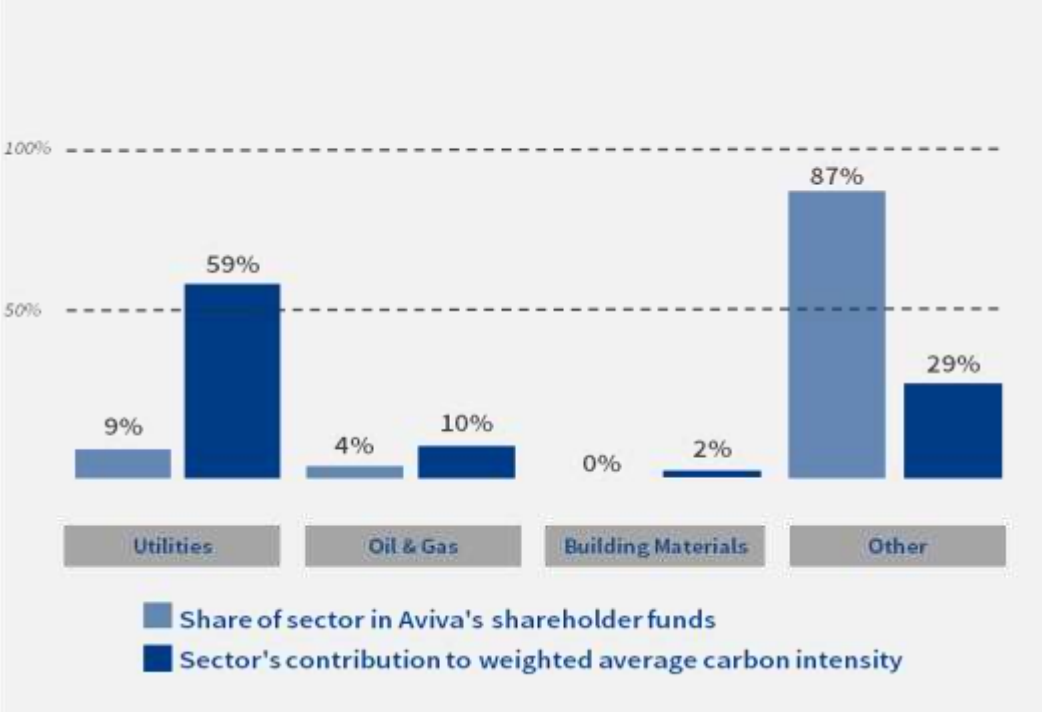
Carbon foot-printing of investments

We use carbon foot-printing and weighted average carbon intensity data to assess, monitor and manage our shareholder funds' credit and equities exposure to a potential increase in carbon prices. Despite being backward looking, this measure provides a good proxy for assessing the sensitivity of these assets to a potential increase in carbon prices.

Weighted average carbon intensity (tCO2e/$m sales) of credit and equities in Aviva's shareholder funds as at 30/11/2019 compared to YE18. Source: Aviva/MSCI.



Aviva's exposure to carbon intensive sectors in Aviva's shareholder funds (credit and equities) as at 30/11/2019.
Source: Aviva.



Risk Management Framework

Rigorous and consistent risk management is embedded across Aviva through our risk management framework, comprising our systems of governance, risk management processes. This framework sets out how Aviva identifies, measures, manages, monitors and reports on the risks to which it is, or could be, exposed to (including climate-related risks), in line with the approved risk appetite.

Aviva Group Emerging Risk Spectrum – August 2019.

- Aviva's emerging risk spectrum illustrates the significance of the impact and expected timescale for different external emerging risks. This is primarily a qualitative assessment informed by quantitative indicators.

- Aviva considers climate change to be one of the most material long-term risks to our business model, and a proximate risk, because its impacts are already being felt. We are therefore taking action now to mitigate and manage the effects of climate change both today and in the future. Through these actions, Aviva continues to build resilience to climate-related transition, physical and litigation risks including the risk of assets becoming stranded.

Monitoring climate risk management

Scope 1,2 and 3 are established measures for calculating emissions produced by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD).

Compliance disclaimers

Important information

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Biography

Steve Waygood
Chief Responsible Investment Officer

Joined investment industry: 1997
Joined Aviva Investors: 2006

Main responsibilities

Steve leads Aviva Investors' award-winning Global Responsible Investment team. His team is responsible for integrating environmental social and corporate governance issues into c£350bn of assets under management. Steve co-founded the Corporate Human Rights Benchmark, the World Benchmarking Alliance, the Sustainable Stock Exchange and the Corporate Sustainability Reporting Coalition. He was part of the group that helped write the Principles for Responsible Investment and has advised the UK Government, the European Commission, the Financial Stability Board and the United Nations on the creation of sustainable capital markets.

Steve appointed to the European Commission High-Level Expert Group on Sustainable Finance, and the UK Green Finance Taskforce, and is also a member of the Financial Stability Board Taskforce on Climate Related Financial Disclosure (TCFD). He was highlighted by the Financial Times in 2018 as being one of the warriors of climate change among Money Managers.

His work became a case study in the Harvard Business School MBA in 2012. Steve has received the Leadership in Sustainability award from the Corporation of London and the British Chamber of Commerce. In 2011 he received the Yale Rising Star in Corporate Governance Award, and he was among the Financial News Top 100 Rising Stars in 2009.

Steve was on the board of the UK Sustainable Investment & Finance association (UKSIF) from 2003 to 2010, serving as its Chairman from 2006. He was also part of the expert group that wrote the United Nations Principles for Responsible Investment.

Experience and qualifications

Steve has a PhD in Sustainable Finance he is a visiting Professor at Cass Business School, and also teaches at the University of Cambridge Institute for Sustainability Leadership. Steve has received awards from Brummell, the Chamber of Commerce, the City of London, Financial News, the United Nations Foundation, Yale and Harvard.