Our climate-related financial disclosure

As an international insurance group[1], our sustainability and financial strength is underpinned by an effective risk management framework. Our business is directly impacted by the effects of climate change. Aviva believes that unmitigated climate-related risks present a systemic threat to financial stability over the coming decades.

We have reported on climate change in our Annual Report and Accounts since 2004. Our 2018 disclosure reflects Aviva's response to the recommendations of the Taskforce on Climate-related Financial Disclosures, published in June 2017, and reflects our multiple roles as an asset owner, an insurer and an asset manager. This response sets out how Aviva incorporates climate-related risks and opportunities into our governance, strategy, risk management, metrics and targets and how we disclose our exposure. These pages, along with the expanded version of our response, are available at www.aviva.com/TCFD.

Governance

Acknowledging the increasing impact of climate-related changes, Aviva has built a strong system of governance, with effective and robust controls. Aviva's Chief Risk Officer and Group General Counsel and Company Secretary are the executive sponsors overseeing this disclosure. However, other group executives and local markets are responsible for managing specific areas of the business which may impact or be impacted by climate change: insurance, asset management, operations and finance.

At Board level, the Board Risk Committee and Board Governance Committee oversee our management of climate-related risks and opportunities.

- **The Board Risk Committee** met 5 times in 2018 to review, manage and monitor all aspects of risk management, including climate-related risks. Climate change is classified as an emerging risk and it is assessed for its proximity and significance to Aviva as part of our emerging risk processes.
- **The Board Governance Committee** met 4 times in 2018 to oversee how Aviva meets its corporate and societal obligations and formally considered Aviva's strategic approach to climate change during the year. This includes setting the guidance, direction and policies for Aviva's customer and corporate responsibility agenda and advising the Board and management.

In December 2018, as part of our regular training programme, Aviva's climate-related risks and opportunities were presented to the Board. The Board will use this training to give appropriate direction to the Company and ensure actions are taken to identify, measure, manage, monitor and report these risks and opportunities.

Strategy

This response focuses on the key climate-related risk factors and related opportunities (i.e. physical, transition, and liability) described in the Prudential Regulation Authority 2015 report[2]. The materiality and horizons over which these risks and opportunities impact our business depend on the specific insurance products, geographies and investments being considered or decisions being made.

For example, our general insurance business considers risks in the underwriting and pricing processes and setting the reinsurance strategy based on a relatively short time horizon (one to three years). Aviva recognises that the increased severity and frequency of weather-related losses has the potential to negatively impact our profitability. Consequently, large catastrophic losses are already explicitly considered in our economic capital modelling to ensure resilience to such catastrophic scenarios.

In contrast, when developing our new product strategy and updating Aviva's overall business plan, the impacts of these risks need to be considered over the medium term (three to five years). With respect to life and pensions, when setting premium rates and reserves for annuities in payment as well as our investment strategy to back those insurance liabilities, the impacts of these risks need to be considered over a much longer time horizon (five years plus).

In our Strategic Response to Climate Change, published in 2015, we have focused on five pillars:

- **Integrating climate risk into investment considerations** – Aviva committed in 2012 to integrate Environmental, Social and Governance factors across all asset classes and regions, to deliver long-term sustainable and superior investment outcomes for our customers
- **Investment in lower carbon infrastructure** – Aviva announced in 2015 an investment target of £500 million annually for the next five years in lower carbon infrastructure
- **Supporting strong policy action** – Aviva continues to provide strong and vocal support for capital market reform, to mobilise the trillions of pounds required to transition to a low carbon economy and properly correct existing market failures with respect to climate change
- **Active stewardship on climate risk –** Aviva actively engages with companies to achieve climate resilient business strategies
- **Divestment where necessary** – Aviva aims to use our shareholder influence to encourage companies to transition to a low carbon economy and divest highly carbon-intensive fossil fuel companies where they are not making sufficient progress towards the engagement goals set.

Alongside this strategic investment response, Aviva has continued to further integrate consideration of climate-related risks and opportunities into our insurance products. For example:

- **GI reinsurance** is now set on an annual aggregate basis and on a per occurrence basis, taking into account the possibility of extreme weather events
- **Our exposure to flood risk** for UK residential customers is managed by ceding policies to FloodRe
- Promote **customer awareness** and risk prevention measures of climate-related issues such as air pollution. For example, Aviva Poland has installed air monitors in local communities to enable their customers to access up to date information about air pollution levels on their smartphones.
- **Help customers to build resilience** to extreme weather such as the upgrade to Commercial Property Insurance in Canada which provides a 'build back better' element
- Provide **products and services that support customers' choices** to reduce their environmental impact, such as bespoke electric vehicle policies and supporting the sharing economy
- **Limit our exposure** to underwriting the most carbon intensive elements of the economy through restrictions in the terms of our Group Underwriting Boundaries for sectors such as mining and power generation. In line with our commitments to manage climate change, Aviva's Global Corporate and Specialty team has announced an immediate move away from insuring fossil fuel power production to renewable energy generation in the UK.

1 Aviva is an asset owner with assets under management to the value of £470 billion, an insurer with gross written premiums of £28.7 billion, and Aviva Investors has assets under management of £331 billion.
2 www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/publication/impact-of-climate-change-on-the-uk-insurance-sector.pdf

Aviva continues to deliver in all areas of our current climate change strategy. However, in the light of the latest Intergovernmental Panel on Climate Change (IPCC) report[1] and the risk of climate tipping points being reached that could cause runaway warming, as well as the findings from our internal analysis of potential climate change impacts, our strategy is being refreshed to accelerate our ambition to be aligned to a 2°C (or lower) transition.

Risk management

Rigorous and consistent risk management is embedded across Aviva through our Risk Management Framework, comprising our systems of governance, risk management processes and risk appetite framework. This framework sets out how Aviva identifies, measures, manages, monitors and reports on the risks to which it is, or could be, exposed (including climate-related risks). It also defines the accountabilities of management, the risk function and internal audit with respect to enterprise-wide risk management.

Aviva considers climate change to be a material long-term risk 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 impacts of climate change both today and in the future. Through these actions, Aviva continues to build resilience to climate-related transition, physical and liability risks.

In conjunction with the United Nations Environment Programme Finance Initiative (UNEP FI), Aviva has developed models and scenario analysis tools to assess the potential impact on our business of the four IPCC scenarios. Outputs include financial metrics such as direct/indirect emission costs, additional capital expenditure, and revenue implications broken down by sector and geography. Each scenario describes a potential trajectory for future levels of greenhouse gases and other air pollutants and can be mapped to likely temperature rises (levels of mitigation required): 1.5°C (emissions halved by 2050), 2°C (emissions stabilise at half today's levels by 2060), 3°C (emissions rise to 2080 then fall) and 4°C (emissions continue rising at current rates).

To assess the impact of climate change on our business, Aviva is calculating a Climate Value-at-Risk (Climate VaR) from the model outputs for each IPCC scenario to assess the climate-related risks and opportunities over the next 15 years with the ability to look at shorter time periods (three to five years) where appropriate. A range of different financial indicators are used to assess the impact on our investments and insurance liabilities. These impacts are aggregated together to determine the overall impact of climate-related risks and opportunities across all scenarios by assigning relative likelihoods or probabilities to each scenario.

The Climate VaR includes the financial impact of **transition** risks and opportunities. This covers the projected costs of policy action related to limiting greenhouse gas emissions as well as projected profit from green revenues arising from developing new technologies and patents. In addition, it captures the financial impact of **physical** risks from extreme weather (e.g. flood, windstorm and wildfires) as well as the impact of rising sea levels and mean temperatures, although we recognise that the most extreme physical effects may only be felt in the second half of the century. Aviva also recognises the growing trend in climate-related litigation and has assessed its potential exposure to **litigation** risks accordingly.

Metrics and targets

In addition to Climate VaR, Aviva uses a variety of other metrics to manage, monitor and report its alignment with global or national targets on climate change mitigation and the associated potential financial impact on our business. These are covered below.

We **use carbon foot-printing** and weighted average carbon intensity data (tCO_2e/£m sales) to assess and manage the exposure of our assets to a potential increase in carbon prices. In addition, we measure our operational carbon emissions and we have already reduced our emissions by 60% since 2010 and have a long-term reduction target of 70% by 2030 compared to this baseline. In 2018, Aviva was recognised as one of 20 companies that reported 100% of their Scope 1[2] emissions. These figures can be found in the expanded version of this report (www.aviva.com/social-purpose/policies).

We divest where necessary. To date we have divested Aviva's own assets from 17 thermal coal mining and power generation companies from the Coal 40[3]. In addition in 2018, we were asked by Urgewald, an environmental and human rights non-governmental organisation (NGO), to review our holdings against their CoalExit list of 120 coal companies. Aviva actively-manages positions within our beneficial holdings in 15 of these companies with a total market value of £415 million or 0.09% of our total assets. Ten of the 120 companies on the list are companies that we have put on our investment stoplist. More details of this engagement can be found on www.aviva.com/social-purpose.

Aviva is also committed to investing in **lower carbon infrastructure**, amounting to £2.5 billion in the period between 2015-2020, with the intention of delivering 100,000 tonnes of CO_2 savings per year. Aviva currently holds more than £4.3 billion of green assets, including £3.1 billion in low carbon infrastructure investments (mainly solar, wind and waste-to-heat biomass) and £1.3 billion in green bonds.

Aviva has used Carbon Delta's **warming potential** metric to assess our corporate bond and equity holdings' alignment with the Paris agreement 2°C target. This warming potential methodology captures investments' Scope 1[2] emissions as well as investments in low-carbon technology to provide a forward-looking perspective. We plan to extend this analysis to our whole portfolio over time.

Aviva has used Notre-Dame University's Notre Dame-Global Adaptation Index measure for country climate change risk to assess the physical risk profile of **Sovereign holdings**. This measure considers exposure and vulnerability to climate change; readiness and adaptation; ability to raise money for mitigation and post-disaster repair; ability to raise money via taxation and debt; reliance on foreign aid and support of the International Monetary Fund and other supra-national bodies.

Aviva uses the **Global Real Estate Sustainability Benchmark** to understand climate resilience and broader sustainability performance of individual properties and real estate funds within our investment portfolio. In 2018, we assessed the performance of 18 property funds and Aviva Investors have achieved 32 green stars. Whilst three funds have improved their performance over the year, the remaining fifteen recorded a small reduction in their overall score. This is because the benchmark is designed to encourage continual improvement in the entities that it is assessing, and as such the scoring methodology becomes more challenging each year. We will continue to work in new areas to maintain and improve our scores.

We build the possibility of **extreme weather events** into our planning to ensure our pricing is adequate. Catastrophic event model results are supplemented by in-house disaster scenarios. We have purchased property catastrophe protection up to a 1-in-250-year return period or beyond that limits Aviva's losses depending on the territory to a relatively low retention level (£150 million on a per occurrence basis and £175 million on an annual aggregate basis).

1 www.ipcc.ch/sr15/
2 Scope 1 emissions cover: natural gas, fugitive emissions, oil and company owned cars
3 Coal 40 – 40 thermal coal mining and power generation companies selected from Aviva's beneficial holdings for targeted engagement in an effort to influence the transition to a lower carbon economy