

ClimateWise principles report 2012

Introduction

The insurance industry has a fundamental part to play in society's responses to climate change. As a major insurer Aviva has firsthand understanding of the impact of extreme weather events on our customers. On their behalf, we are committed to help mitigate the threat of climate change and support everyone in society to adapt to changes caused by manmade emissions already in the atmosphere. Our industry can also draw on its knowledge of historical weather data to identify patterns of change, applying our understanding of risk to map future temperature scenarios and determine likely impacts.

We believe that climate change must be tackled now. As extreme weather events become more frequent and more severe, they become more challenging to insure. It is in everyone's interest that insurance remains affordable and available so that people affected by severe weather events can recover quickly from unavoidable impacts. Aviva is currently working with the ABI and the Government to address the issues around the ending of the flooding Statement of Principles in 2013.

However, this has to be part of a bigger conversation in which everyone understands their responsibility in flood risk management. This includes insurers ensuring that premiums accurately and fairly reflect the risk, local authorities and Government continuing to invest in defences and indeed the homeowner – who can consider what measures they can take to reduce the damage if the worst does happen.

Setting the context

Aviva is the world's sixth-largest insurance group. Our premium income and investment sales were £40.5 billion in 2011. We provide more than 43 million customers with insurance, savings and investment products.

We are the UK's largest insurer and one of Europe's leading providers of life and general insurance. We combine strong life and general insurance and asset management businesses under a single strong brand, focused on providing customers with prosperity and peace of mind.

This combination provides us with reliable revenues from diverse sources and helps us to fund and grow our business more efficiently.

Long term insurance and savings business from continuing operations accounted for over 77% of our total business, based on worldwide sales for the year ending December 2011. General insurance and health insurance together accounted for 23% of our total worldwide sales for year ended December 2011.

Principle 1 - Understanding risks and opportunities

- Support and undertake research on climate change to inform our business strategies and help to protect our customers' and other stakeholders' interests
 - Support more accurate national and regional forecasting of future weather and catastrophe patterns affected by changes in the earth's climate
 - Use research and improve data quality to inform levels of pricing, capital and reserves to match changing risks
 - Evaluate the risks associated with new technologies for tackling climate change so that new insurance products can be considered in parallel with technological developments
 - Share our research with scientists, society, business, governments and NGOs through an appropriate forum.
1. Insurers cannot stand still when it comes to understanding and responding to sustainability issues for our business. We are constantly updating our research both technically in terms of risk, but also in terms of where our customers and intermediaries are up to in terms of understanding and practices in this area.
- a. Again this year as part of our involvement in ClimateWeek UK, we took the opportunity to research what our intermediaries thought about climate change and their role going forward. We conducted a survey with brokers on a national basis, receiving responses from 600 brokers on a national basis. The results were interesting and have provided us a lot of information to build on. Some of the findings included:
- 72% of brokers said that they don't have a climate change/environment policy.
 - 60% of brokers thought that they should have a clear policy on environmental management being integral to their business, however 48% thought that it wouldn't give them a competitive advantage
 - 20% of brokers advised they had seen an increased interest in the demand for products in support of the Environmental Goods and Services sector. 69% thought that they could take more advantage of the interest seen in this area.
 - From a day to day management point of view brokers listed what the most common energy saving actions were in looking at their own businesses. The most popular was switching PC off overnight (81%) followed by recycling waste paper, switching lights off when there was adequate daylight, opening window instead of using air con (62%).

We shall be using this research to promote understanding and provide learning amongst intermediaries in respect of their own operations and the

emerging Environmental Goods & Services sector products that are available to their clients.

2. The weather patterns in Northern Europe and Canada are continuing to generate an increasing level of uncertainty. In the UK this year we have had drought restrictions followed by the wettest April in 250 years. May and June continue to be very changeable. For insurers, storms and flooding can mean a sharp increase in claims calls, as our customers' homes and businesses are damaged by the elements. The April bout of wet weather meant Aviva's home insurance claims centres received around 1,300 storm-related calls in three days.



We plan for event like these, to ensure Aviva can manage the volume claims it receives. We start by assessing the flood risk of all 28 million addresses in the UK.

Since 2002 our geographic information systems (GIS) team has been working on this. They work alongside our underwriting and pricing teams, who use the data to set home and commercial insurance premiums to cover the risk we're taking on.

During bad weather the GIS team also work with our claims teams, to let them know how many policyholders are at risk of flooding or storm damage at that time. This allows the claims teams to plan cover for a potential increase in-demand on call centres and our approved tradesmen.

Using flood models, allows the GIS team to see clearly the areas at risk of river, coastal and surface water flooding. We use this alongside information on the location of every address in the UK from the Ordnance Survey, to give us an accurate picture of the risk of flooding at each address.

We can see the difference in flood risk from one end of a street to another.

The maps show how one house is directly in the path of a potential flood, while their neighbour may escape it. This type of information allows us to set premiums much more accurately.

This is just one of the 26 different models we use to calculate premiums.

3. We continue to use research and improve data quality to inform our pricing capital and reserves. We extensively use data, financial models and analysis to improve pricing and risk selection. In Aviva's Annual Report & Accounts 2011 we include details of our GI Risk which include claims incurred from catastrophic events, such as flooding and windstorm. Our total potential loss from our most concentrated catastrophic exposure zone (Northern European) is approximately £280 million for a one in ten year annual loss scenario, compared to approximately £490 million for a one in hundred year annual loss scenario.

4. Following on from the successful expansion of our covers to the Environmental Goods and Services sector generating GWP of approximately £1 million over the year, we are continuing to extend our scope of cover to other technologies that were not included in the first tranche. We have also provided training and shared sector knowledge with our intermediaries. Following its success, a new team has been set up within Corporate and Specialty Risks dedicated to Power Generation, amongst other Engineering risks.

5.
 - a. In July 2011 Aviva launched a Forum for the Future research report that it had commissioned looking at A Framework for a sustainable economy: 2040 Vision. The report focused on material issues around sustainability including climate change and the impact on various sectors, one of which was the financial services sector.
<http://www.forumforthefuture.org/sites/default/files/project/downloads/aviva-sustainable-economy-full-report-web> (PDF 1.9 MB)
 - b. In March 2012 Aviva Investors published a thought piece of the implications of climate change for real estate investment strategies. It highlights the risks and opportunities that climate change creates for property investors but suggests that the risks are so great that portfolios should be reviewed and investment strategies adjusted accordingly.
 - c. Aviva Canada sits on the climate change working group of the Insurance Bureau of Canada which is currently looking at adaptation measures for infrastructure and services in municipalities. As such James Russell, Chief Underwriting Officer in Aviva Canada was asked

to give a keynote speech at the launch of ClimateWise/ CERES first North American joint collaboration on risk management responses to city resilience.

- d. We continued to be part of the Sustainable Property Claims Management work over the past year which culminated in the launch of the guidelines in May at the ABI Property Conference. We are in the process of signing up to this guidance. Our work on the various repair regimes continues, and we are currently awaiting the outcome of further testing of the thermal drying methods.

Principle 2 – Inform public policy making

- Work with policy makers nationally and internationally to help them develop and maintain an economy that is resilient to climate risk
 - Promote and actively engage in public debate on climate change and the need for action
 - Support work to set and achieve national and global emissions reduction target
 - Support Government action, including regulations that will enhance the resilience and reduce the environmental impact of infrastructure and communities
 - Work effectively with emergency services and others in the event of a major climate-related disaster
1. A coalition of institutional investors, NGOs, church groups and UN agencies, led by Aviva Investors, called on government representatives at the Rio+20 Earth summit to require public and large global private corporations to integrate material environmental, social and governance issues in their Annual Report and Accounts, on a report or explain basis.

In an open letter to Ministers, Paul Abberley, interim chief executive of Aviva Investors and representative for the Corporate Sustainability Reporting Coalition (CSRC), which includes investors representing approximately US\$2 trillion of the world's funds under management, said: "A commitment from UN member states to work on an international agreement requiring companies to integrate sustainability issues in their Annual Report and Accounts, on a report or explain basis, would be a realistic, tangible and meaningful success from the Rio+20.

"Sustainability reporting is also a vital component in creating a responsible approach to capitalism. If investors continue to receive information that is short-term and thin, then these same characteristics will continue to define our markets. This is why we convened the Corporate Sustainability Reporting Coalition and we warmly welcome the leadership that the UK Government and the EU has taken so far."

Paul Abberley continued: "This simple reporting step by companies will

create the right kind of discussions within boardrooms, throughout firms and encourage investors to think about the sustainability of the firm. Today, while investors can see a company's profit and loss statement and the underlying cash flows, they typically get little if anything about a company's sustainability. At present 75% of companies do not report on sustainability issues at all. While this trend is improving, at the current trajectory it will be decades before sustainability reporting is common practice across global markets.

“Regular and consistent corporate sustainability information would also help governments implementing green economy programmes; monitoring the environmental and trade related aspects of the transition to a low carbon economy and understanding how company boards understand their sector's sustainability issues.”

The Coalition now includes over 70 members such as the UNPRI, GRI, ACCA, WWF-UK and UNCTAD.

Wolfgang Engshuber, chair of the Advisory Council of the UN-backed Principles for Responsible Investment commented: "Responsible long-term investors cannot make prudent investment decisions unless they have high-quality information on companies' exposure to long-term drivers of financial risk and return such as climate change, resource scarcity and global demographic and social changes, and the quality of their responses to them. To enable investors to do this, the PRI Initiative believes that governments should take steps to require companies to report publicly on how they have taken account of material sustainability factors or explain why they do not."

Teresa Fogelberg, deputy chief executive of the Global Reporting Initiative, said: "Making sustainability reporting common practice increases the availability of vital information to support a number of decisions from investment and purchasing to employment. For companies, sustainability reporting helps to drive change, to be fit to compete in tomorrow's economy where sustainability will count. The report or explain approach to reporting increases information for governments and markets; yet leaves companies the space to make their own reporting decision."

The text got into the draft zero of the Rio+20 negotiations and was agreed by member states.

- a. We have also continued to show our support for the Global Compact Caring for Climate programme by signing up to their Rio+20 commitment.



- b. Aviva has become a founding signatory of the UN Principles for Sustainable Insurance which provides a framework for the integration and disclosure of environmental, social and governance issues for insurance providers. Aviva has been involved in the creation of these principles and continues to sit on the transitional board. The principles were launched in Rio.
2. In March we were invited by DECC to have a discussion on UK Climate policy with a delegation of Indian MPs focusing on the benefits and challenges from a company perspective. The process sought to help the MPs consider the most appropriate climate policies for the creation of a similar Climate policy framework in India. Dialogue is ongoing.
3. In May 2011 Aviva signed an open letter from the Aldersgate Group to the Prime Minister and Deputy Prime Minister regarding carbon budgets and advocating stronger carbon budgets moving to a low carbon economy.
 - a. Following on from this, we joined with other members of the Institutional Investors Group on Climate Change in February 2012 in urging EU finance ministers to revise the emissions trading scheme to combat the exceptionally low price of carbon. Current low carbon prices do not create the right incentives for private investors to allocate capital to low carbon sources.
 - b. Aviva provided a response to the UK government's consultation on GHG emissions Mandatory Carbon Reporting for companies last summer. We submitted that we are in favour of reporting in order to raise awareness and transparency as part of corporate reporting. This would also benefit investors who would be able to gain a more rounded picture of the long term value of a company and easier to compare companies within a sector. In June 2012 Nick Clegg, Deputy Prime Minister announced the 1,800 FTSE list companies would be expected to report by next April.

4. Building on the report that we commissioned last year, a progress report – Sustainable Stock Markets: A report on progress was published in March 2012, following a survey covering 27 of the largest exchange entities across the world’s markets. Its findings included :
 - Stock exchanges reaffirmed responsibility to encourage corporates to report on sustainability issues, a reassuring sign ahead of Rio+20
 - Global approach to consistent and material corporate sustainability reporting welcomed by many exchanges
 - Ability to implement sustainability initiatives limited by reduced regulatory mandate and lack of clear revenue drivers
 - Coordinated policy support and clearer, more supportive input from investors are necessary to build mainstream sustainable capital markets

Commenting on the findings of the report Paul Abberley, chief executive of Aviva Investors London, said: “Exchanges play a vital role in the move towards more sustainable capital markets as they have the opportunity to influence and monitor companies seeking to access equity markets. So it’s encouraging to see that they recognise this responsibility although it is disappointing that so many failed to consider the implementation of mechanisms to promote sustainability disclosure through changes to listing rules.

“However we recognise that exchanges can’t achieve this by themselves, and it is not solely their responsibility. They require further support from asset owners and asset managers - as well as their regulators and legislators. This is why we have convened the Corporate Sustainability Reporting Coalition. We are collectively urging all nations at the United Nations Conference on Sustainable Development in June - Rio+20 - to commit to develop a Convention requiring on a report or explain basis the integration of material sustainability issues within the report and accounts of all listed and large private companies. It’s encouraging to see that the majority of exchanges appear to welcome such an approach.”

5. Our business means we have seen the devastation caused by natural disasters such as floods and earthquakes, and we know the importance of immediate aid as we help our customers recover in the aftermath.

Oxfam 365 is Oxfam’s emergency fund, which allows them to help communities as soon as disaster strikes. We have been a major supporter of Oxfam 365 since 2006. Our funding supports the global rapid response team of aid workers and maintains the biggest warehouse of emergency supplies in the UK. In 2011, we renewed our partnership for another three years, which will bring our total contribution since 2006 up to nearly £900,000.

Aviva’s contribution helped support Oxfam work after Typhoon Washi which hit the Philippines in December 2011 and the East Africa famine appeal in July 2011.

Principle 3 - Support climate awareness amongst customers

- Inform our customers of climate risk and provide support and tools so that they can assess their own levels of risk
 - Encourage our customers to adapt to climate change and reduce their greenhouse gas emissions through insurance products and services
 - Increase the proportion of repairs that are carried out in a sustainable way through dialogue with suppliers and developers and manage waste material appropriately
 - Consider how we can use our expertise to assist the developing world to understand and respond to climate change.
1. Throughout the year Aviva looks to inform and support customers in the face of large weather events, particularly in winter. Three press releases were issued in November in respect of freezing temperatures and storms. When there was a high wind warning a press release advised customers that we had our network of contractors, claims teams and call centre staff on standby to help those who might be affected by the stormy weather. It went on to advise on what could be done prior to the storm such as:
- Parking the car in a garage, or away from large trees
 - Secure or lock-away loose objects such as garden furniture and ornaments, bikes, children's toys and ladders
 - Fasten all doors and windows
 - With electrical storms, remove the aerial from the TV set.

Plus general maintenance checks:

- Check for loose tiles on the roof
- Secure any weak fences and posts – to minimise the risk of causing damage to other parts of your property
- Check aerials or satellite dishes are securely fixed.

In February when temperature dropped severely we issued another press release advising homeowners to carry out some simple home checks to prevent freezing and burst pipes drenching their homes.

Just one burst pipe in the loft can mean water gushing through a property ruining furnishings and belongings along the way and in some cases bringing whole ceilings down – the average cost of damage is around £8,000.

For the homeowner this can mean months of disruption while their house is dried out and repaired. And if homes are left empty at holiday time, leaks often aren't discovered for many days and so damage can get progressively worse.

Carole Gallagher, head of household claims, at Aviva said: "With the relatively mild start to the winter it's easy to forget how quickly temperatures can

plummet and many homeowners can be caught out by the arctic temperatures we are currently experiencing.

“Freezing and burst pipes can be a real problem - in some cases ruining entire floors of your home. The risk can be worse in traditional properties without modern heating systems or properly insulated pipes.

"And when homes are left empty, burst or leaking pipes often aren't discovered for many days and so damage can get progressively worse so think about asking a friend or neighbour to pop in and check your home if you are escaping the cold for a half-term break in the sun.”

The release also provided a list of precautions people could take to prevent a potential disaster.

These press releases are not restricted to extreme weather warning in respect of property. At the end of November we provided advice to motorists.

Motorists were urged to consider using winter tyres on their vehicles as forecasters warn winter weather was finally on its way. As well as checking on anti-freeze levels and stocking up on de-icer Aviva advised motorists should seriously consider investing in winter tyres for their vehicles as they brace themselves for the seasonal chill.

Nigel Bartram, Aviva's senior motor underwriter, said there seemed to be little awareness among consumers about the type of tyres which are available to them, let alone the benefits for a safer journey. He said: "While there is increased use of winter tyres in some sectors, such as supermarket delivery lorries and the emergency services, many motorists are not aware that such tyres are available to them and how they can make a real difference to the way their vehicle grips to the road.

"Winter tyres would not prevent all accidents, but their better grip would increase the chances of the driver having a safer journey in difficult conditions.

“We believe winter tyres should be considered seriously as they're not just for snow and ice but for temperatures below 7 degrees Celsius and if the motorist does low mileages and does not drive regularly on high speed roads, they could be used all year round, and there will be no need for two sets of tyres.”

As one of the insurers signed up to the ABI's Winter Tyres commitment, outlined last week, Aviva does not view winter tyres as a modification to a car so they do not increase the premium, and the customer does not need to inform the insurer when winter tyres are fitted to their vehicle. In addition, a

spare set of tyres would be covered if they are kept securely at the policyholder's address.

The use of winter tyres in northern European countries, such as the Netherlands, has increased from 5% to 30% in recent years as motorists there have become aware of their benefits during increasingly harsher winters. And research¹ in the Netherlands, which has a similar climate to the UK, has shown drivers have safer journeys during the winter months where winter tyres are fitted.

However, Bartram added a note of caution when the weather is particularly bad: "While winter tyres provide much better grip and performance as the weather gets colder, in really severe conditions the advice still has to be not to drive unless absolutely necessary."

2. In Canada too, the media is talking about the changes in weather events.

Insurance bureau: 'Unusual weather is becoming the norm'

Coastal communities in Nova Scotia were advised that they should be prepared for rising sea levels and increasingly destructive storm surges, or retreat to higher ground.

The articles went on to advise that 'as insurers worldwide scramble to confront climate change, a new report commissioned by the Insurance Bureau of Canada and released in June 2012 warns that the Atlantic region will see more frequent and severe weather events in the coming years.'

Rising premiums, more stringent building codes and an overhaul to zoning rules — especially in coastal areas — all seem to be in the cards and homeowners will need to fortify their homes against harsh hurricanes and storms or risk massive losses.

'Unusual weather is becoming the norm in Canada,' said Bill Adams, the bureau's Atlantic vice-president. Our motivation is to ring the alarm and say this is the new reality and we all need to wake up to it."

The insurance industry is quickly awakening to the risks of warming temperatures in the face of increasing claims.

In 2011, insurers paid out \$1.7 billion largely due to extreme weather and catastrophic events, according to the insurance bureau. It paid \$1 billion in each of the two previous years.

"Climate change is one of the most significant issues facing the insurance industry in Canada," Adams said. "Historically, a homeowner's insurance policy has been a fire insurance policy. But recently water has become a greater source of claims for Canadian households."

While climate change is an issue across the country, Atlantic Canada faces some unique challenges: expected increases in hurricane and storm activity in addition to rising sea levels create a much more hazardous risk of storm surges. More rain is also likely to contribute to flash flooding of small rivers and lakes.

Historical and projected trends, shown in the research, point to the need for Canada to adapt now in order to minimize social and economic costs in the future. There has been more hurricane activity over the last several years with three major hurricanes over this time and this report advises that this is expected to continue.

Gordon Murray, Atlantic Canada vice-president of business development at Aviva Canada, said water-related claims for the insurance firm have skyrocketed. He said the average cost of a water damage claim rose 160% from CAN\$5,423 in 2000 to over CAN\$14,000 in 2010.

“Weather patterns are changing and although there are a number of things consumers can do, we expect major weather events like hurricane Juan to become the norm.”

3. In Aviva Canada we are leading the way in offering products that support customers to improve the sustainability of their homes. Products offered by Aviva Canada include:
 - Green Home Power Generation: A set of endorsement bundles were introduced in 2010, developed to satisfy the insurance needs of customers who utilise solar panels and wind turbines to generate electricity – for their own consumption and/or supplying energy to the Grid as part of Provincial Incentive Programs. In 2012, we will work to ‘de-bundle’ the Green Home Power endorsements to enable our customers to only purchase the specific products that meet their needs – with a wider range of pricing points.
 - Green Home Assure: The premise of this product is that in the event of a total or major loss at the insured's home, they will be able to replace damaged or destroyed property with more environmentally-friendly and sustainable products.

4. Further to our submission last year detailed the work on repair over replace for our accident repair area; we are now able to provide an update on the results achieved and the future direction of this work. Aviva owns a network of 21 Accident repair centres where approximately 1/3 of accident damaged vehicles go to be repaired. Solus began its roll out the Repair over Replace ethos in earnest in 2009. The saving of carbon and waste matched those achieve by Apollo. In January of that year, the Solus group products to labour (P: L) ratio was 94.7%, broadly in line with the traditionally accepted industry

average. By the end of 2009, our repair over replace efforts had resulted in a ratio of 74.7% – a reduction of 20%.

In 2010 the P: L reduced further to 73.7%. Although the Repair over Replace project ended in mid-2010, this continued improvement illustrated that the group mind-set had changed to embrace this principle. However, the smaller than anticipated reduction in the ratio was also an indication that external factors were beginning to influence this performance. One was the severe winter conditions in January and December which caused a greater amount of suspension damage. These safety-related items cannot be repaired, and have to be replaced.

2011 began with the continuation of the severe winter weather, and throughout the year other factors came to the fore, amongst which were:

- Fewer claims across the industry
- Higher excesses discouraging claims, and diverting sub-excess repairs to smaller repairers (these repairs would typically contain parts repair opportunities)
- Higher Total Loss ratios, removing jobs which might have had scope for repair of panels rather than replacement.

In 2011 the P: L ratio had risen 80.6%. However, this still represents a significant trend downward from the starting point and our emphasis on the reducing the P: L ratio continues. It is worth noting that, in the context of environmental factors, this policy drives other benefits, such as fewer replacement parts purchases, and, therefore, fewer vehicle journeys for parts deliveries to sites and less waste generated from our sites. The cycle time of the repair reduced, meaning that we could reduce the courtesy car fleet by 300 vehicles.

The future trend is likely to be influenced by the growth of the use of recycled salvage parts' although this is not likely to be significant for a couple of years.

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Last year we reported on our work in supporting the limitation of environmental impacts in developing countries through our investment strategy, mentioning our engagement with Vedanta Resources plc. This mining company's operations in Lanjigarh, India continue to come under scrutiny due to human rights and environmental concerns and the company has to date failed to secure approval for the new bauxite mine and refinery expansion. We started our engagement with the company in 2010 and voted against a number of resolutions. We continued with multiple meetings in 2011, including hosting an investor round-table, held in the run-up to the AGM in July.

The company demonstrated some modest progress and we welcomed the increased quality and frequency of dialogue with the company. We improved our vote on the Annual report and accounts from against to abstain. However, we also opposed the remuneration report and the re-election of the chairman of the health, safety and environment committee due to our concerns. We also made a statement at their AGM and received assurances that there would be significant improvement in 2012. We will continue to monitor.

Principle 4 – Incorporate climate change into investment

- Consider the implications of climate change for company performance and shareholder value, and incorporate this information into our investment decision-making process
 - Encourage appropriate disclosure on climate change from the companies in which we invest
 - Encourage improvements in the energy-efficiency and climate resilience of our investment property portfolio
 - Communicate our investment beliefs and strategy on climate change to our customers and shareholders
 - Share our assessment of the impacts of climate change with our pension fund trustees.
1. In January 2012, Aviva Investors announced the outcome of their business review, which proposed reducing the scope of active equity management in London. As a result, it was proposed that there could be better growth opportunities for the actively screened SRI funds in an alternative fund manager. Aviva Investors remains committed to our principles of responsible investment across its £263 billion assets under management in a range of asset classes.

Consequently, we have refocused the way we embed Environmental, Social

and Governance (ESG) in the business. In future, ESG engagement and integration will apply across all our mainstream assets under management. ESG will be integrated within all portfolios by all analysts and fund managers who will be provided with directly relevant investment information by our brokers and our independent research providers. Fund managers and analyst will be expected to be able to demonstrate engagement with these issues and will be rewarded accordingly.

We have also established a new Global Responsible Investment Team who will report into the AI CEO and will be responsible for developing our Responsible Investment strategy and policy across all assets under management. We have created a new role of Chief Responsible Investment Officer who will have a team of four.

The team will be further augmented by a network of Responsible Investment Officers. Aviva Investors has also reaffirmed our strong commitment to our public policy work that is aimed at making capitalism more sustainable.

Specific low carbon products include the Aviva Investors European Renewable Energy Fund achieved its first close in mid 2011 and expects to acquire and manage approximately €1b of assets. The fund was £41.76m AUM as at 31 December 2011. This represents 0.05% total Aviva Investors AUM for year end 31 December 2011.

2. The CDP's work so far has been catalytic in raising corporate awareness of the issue and disclosure of performance. Our work continues to focus on non-disclosure of carbon risks in our annual engagement programme. 69% of companies in our five year engagement programme now reporting to the CDP. This is why we chose to work with them to develop the Carbon Action Initiative which was launched in 2011.

The Carbon Action Initiative was provided with seed funding from Aviva and developed by an investor steering group comprising Aviva Investors, CCLA, Robeco and Scottish Widows Investment Partnership (SWIP).

In early April 2011 an investor letter was sent to the world's largest companies in the FTSE Global Equity Index Series (Global 500). This letter, which complements the CDP disclosure letter, encouraged companies to:

- Make year-on-year emissions reductions
- Identify and implement investment in greenhouse gas emissions reduction initiatives which have a satisfactory positive return on investment
- Any companies that do not already have an emissions reduction target will be asked to set and publicly disclose this.

In October, the findings were published. Analysis of the responses identified extensive opportunities for carbon reduction technologies and highlighted a number of companies in high emitting sectors with no targets. Together with Robeco and SWIP we sponsored a collaborative engagement via the PRI to encourage these companies to set good-quality absolute or intensity targets. We see this as a groundbreaking new development and believe it will have significant influence to change corporate behaviour. We look forward to reporting progress on this engagement towards the end of 2012.

3. The Igloo regeneration fund invests in UK mixed-use real estate through sustainable place-making in partnership with the public sector and local communities. All of Igloo's investments are screened with its pioneering Sustainable Investment Policy Footprint. Percentage share of assets under management: The Igloo fund was £97.99m AUM as at 31 December 2011.

Igloo Regeneration, Porth Teigr has won a Built Environment award in the second annual Guardian Sustainable Business Awards (GSBAs).

Porth Teigr is a joint venture regeneration project involving Aviva Investors' igloo Regeneration fund and the Welsh Government. This award closely follows the BREEAM 'Outstanding' certificate the development received in February recognising the high environmental standard of the BBC Roath Lock studios that it is also home to.

The GSBAs promote national leadership in sustainable business and encourage organisations to share best practice. Igloo's pioneering sustainable investment policy, FootprintR, is a strong example of this and the development beat stiff competition from Marks & Spencer and Prologis to win this award.

Hoong Wey Woon, igloo Fund Manager, said: "Sustainability is a core value at Aviva Investors and we place a lot of emphasis on it. In addition to benefiting the environment, sustainable projects add value for our investors as they are more attractive to both occupiers and future purchasers. This award is a fantastic achievement as it recognises the progress we're making in this area and the importance of incorporating it into developments.

- In March 2012, Aviva Investors published a thought piece on the implications of climate change for real estate investment strategies. It highlights the risks and opportunities that climate change creates for property investors but suggests that the risks are so great that portfolios should be reviewed and investment strategies adjusted accordingly.

4. In November 2011 The Climate Bonds Initiative released a prototype Climate Bond Standard – a screening tool for investors and governments to support investment in the "Low Carbon Economy." Business opportunities that offer investment-grade returns and also address climate change can be certified as Climate Bonds. The

release follows six months of development and review with other industry experts such as the International Finance Corporation (IFC), Standard & Poor's and KPMG as well as Aviva Investors. The standard provides the first mechanism for assuring investors that bonds are linked to projects that have met independent environmental criteria. The new standard lists some currently eligible wind energy investments, with solar and other renewable energy investments to follow.

a. Over the year we continued to work on the ClimateWise workstream focused on building low carbon considerations in to fixed income investments.

5. Aviva Investors has been working with the Group CR team to encourage Aviva as an asset owner and in our own Staff Pension scheme to build ESG considerations and measurement into our investment strategy decisions. The Board CR Committee has confirmed that Aviva plc will become a signatory of the Principle for Responsible Investment as an asset owner and the Pension Trustees of Aviva staff pension scheme have also become members. These two areas will be reporting against the principles for the first time in 2013.

Principle 5 - Reduce the environmental impact of our business

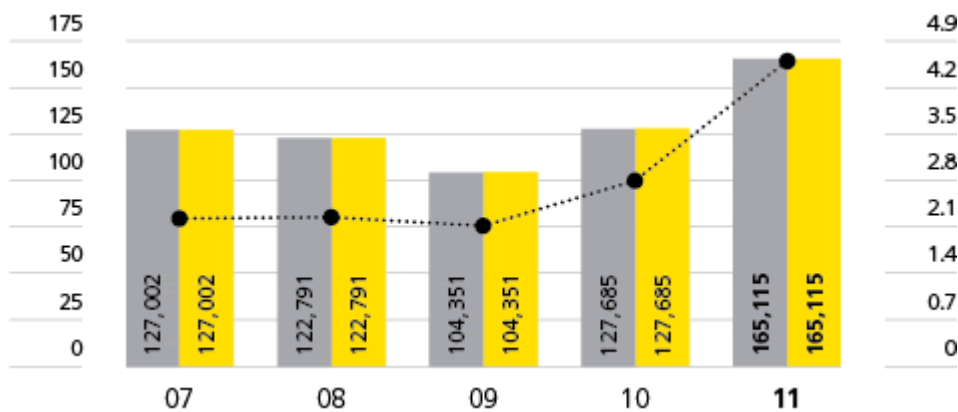
- Encourage our suppliers to improve the sustainability of their products and services
 - Measure and seek to reduce the environmental impact of the internal operations and physical assets under our control
 - Disclose our direct emissions of greenhouse gases using a globally recognised standard
 - Engage our employees on our commitment to address climate change, helping them to play their role in meeting this commitment in the workplace and encouraging them to make climate-informed choices outside work.
1. We work closely with our suppliers to further manage our environmental impacts. We use a Corporate Responsibility Code of Conduct with all our suppliers to ensure they match with our own internal standards. For the most significant suppliers we include environmental clauses in contracts. Some examples of this are in respect of IT waste recycling and disposal and our data centre outsourcing.

In 2011, we signed up to the Barclays Supplier Pledge to identify where we can achieve reduction targets. It also provides a platform for Aviva to share our environmental best practices via quarterly forums with the other suppliers that have signed up to the pledge. We have long-standing relationships with Telereal Trillium and G S Hall who inspect, service and maintain equipment and plant in accordance with insurance and statutory regulations.

The 2010 year-end report identified a number of potential energy efficiencies measures including reprogramming the Building Management Systems,

introduction of more efficient cooling, modifications to plant to reduce their energy use and insulation of heating pipework. We have invested in these works, which will save an estimated £402,000 and achieve an estimated 8% reduction in CO2.

Working with IT Efficient, our registered IT waste disposal partners, we have reviewed our logistical practices. By combining the delivery of new equipment with the collections of retired assets we have reduced the distanced travelled by 8,045 miles, which equates to 3.24 tonnes of CO2 emissions.



Aviva’s national catering partner, Compass, has removed four million miles from the food chain nationally by moving to an online ordering system and using one distribution point for deliveries. As well as educating employees on food sourcing, only Marine Stewardship

Council fish is available in Aviva restaurants.

2. We are doing more than ever to minimise our own environmental impacts. We achieved a 3% like for like reduction in carbon emissions. Our waste consumption reduced by 25% and we are on target to beat our zero to landfill target in the UK by two years.

In 2011, we held 2,579 meetings via telepresence, accommodating 25,932 attendees over 12,786 hours and avoiding £1.9 million direct costs and 1,417 CO2 tonnes of travel related emissions. We also held 14,479 Webex meetings, with 78,430 attendees over 66,024 people hours.

As a service industry, around 50% of our emissions come from the buildings we occupy through heating, air conditioning or lights. That is why energy efficiency was a major factor in the choice of office relocation for our Polish and Russian businesses in 2011.

The Platinum IV building, chosen as the new Polish headquarters, is built to a high environmental specification combining high energy-efficiency management with features such as a central waste collection and flow restrictors on taps. We run an

environmental audit on the building every year in order to continually improve its efficiency. Lessons from Platinum IV will be drawn on in selecting the new headquarters for our Italian business in 2012.

We achieved second-place ranking in the global insurance sector, and 28th overall, for our environmental impact and sustainability standards in the globally recognised Newsweek Green Rankings 2011. We have extended our carbon reporting and offsetting to include water, waste, rental cars and outsourced data centre-related energy consumption. Furthermore, as more regional data centres are outsourced (facilities in Europe and the USA will be outsourced in 2012) we will seek to capture the Aviva specific energy consumption from the servers. We are also included in the CRCEES Performance League table in which we ranked 899 out of 2,106 organisations.

3. Aviva plc – operational carbon footprint covering 100% of employees

GHG Emissions data from 1 Jan 2011 to 31 Dec 2011

Tonnes CO2e 2010 2011

Scope 1 63,784 44,471

Scope 2* 68,628 97,988

Scope 3 15,839 22,656

Gross CO2 emissions* 148,251 165,115

Absolute CO2 footprint 127,685 165,115

Carbon offsetting (133,049) (173,371)

Total net emissions (6,336) (8,256)

* Data according the Defra guidelines ie UK electricity rated as grid average but renewable recognised in other countries.

Gross and absolute emissions in 2011 were the same. Going forward we will report on absolute emissions only.

Scope 1 – operational emissions from owned sources eg gas, vehicle fleet as part of product/service.

Scope 2 – operational emission from non-owned sources eg electricity.

Scope 3 – business activity emissions from non-owned sources – eg business travel.

4. In our annual employee survey carried out in September 2011, 76% of employees on a worldwide basis felt that Aviva makes business choices that support the environment; this is an increase of 5% points from the previous year.

We continue to communicate to employees through a range of media on environmental issues, both through AvivaWorld and at a local level. Different businesses engage employees in different ways. In the UK the 120 environmental champions engage their colleagues advising them of their environmental performance on a regular basis. We also took the opportunity during ClimateWeek to promote some 'lunch and learns' highlighting the energy and water efficiency technologies that we have put in place.

In Canada the Environmental Action Team, a group of employees from across the country, exchanges ideas on how to reduce our carbon footprint. The group focused on encouraging employee action during Earth Month in 2011:

- Earth Hour: On 29 March, Aviva Canada's Head Office switched off the lights, appealing to landlords at its other premises to follow suit, while recruiting over 100 members of staff to pledge to do the same at home.
- Used book and poster sale: Over \$1,000 was raised from the sale of used books and posters at Head Office, which was donated to Evergreen Canada, a national charity that works to 'green' Canadian cities and one of our environmental charity partners.
- 20-minute makeover: 280 Aviva employees across Canada took to the streets and cleaned up their office grounds and surrounding neighbourhoods, collecting 420kgs of litter.
- Paper-free day: On 20 April employees printed 10,692 fewer pieces of paper – the equivalent of 520 trees

In the UK we offer the opportunity to employees to purchase carbon credits to offset their personal carbon footprint and to purchase a bicycle, both through pay as you earn arrangements.

[Principles 6 – Report and be accountable](#)

- Recognise at Company Board level that climate risk has significant social and economic impacts and incorporate it into our business strategy and planning
 - Publish a statement as part of our annual reporting detailing the actions that have been taken on these principles
1. The Aviva plc Board recognises that climate risk has significant social and economic impacts and we incorporate this risk as a matter of course into our business strategy and planning. Aviva's deputy executive chairman, John McFarlane is the Board Sponsor of our Corporate Responsibility Programme (which includes climate change and environmental management). The Board CR committee spent 7% (5% in 2010) of its meeting time discussing specific climate change issues in 2011.

Aviva's Chairman, Lord Sharman has been a strong advocate of climate change issues and responsible business response to the issue. Paul Abberley, Interim CEO Aviva Investors has represented Aviva on ESG issues and

reporting over the last twelve months and will be a keynote speaker at the CDP launch in September. John Ainley, Group HR & CR Director sits on the CBI Climate Change and Energy Board. Aviva's Chief Risk Officer, Robin Spencer, is the Deputy Chair of the CRO Forum which includes climate risk as a standing agenda item in its meetings. Philippe Maso, Aviva France's CEO who sits on the Aviva's Group Executive Committee represents Aviva at the EU Corporate Leaders Group run by the Cambridge Programme for Sustainable Leadership.

2. This document constitutes Aviva's 2012 response to the ClimateWise Principles and is the basis of our actions taken in continuing to address the issue of climate change. The document is published on Aviva's website. Similar information is available in [Aviva's Annual Report & Accounts](#) and [Corporate Responsibility Report](#). However this report provides the level of detail which cannot realistically be included in other public reports that seek to cover a wider scope of information.