

ClimateWise principles report 2011

Introduction

Aviva is the world's sixth largest insurance group, providing insurance, savings and investment products across Europe, North America and Asia Pacific. We are the largest insurance services provider in the UK and one of the leading providers of life and pension products in Europe. Aviva's vision is to bring prosperity and peace of mind to our 53.4 million customers worldwide.

Globally, long term insurance and savings accounted for over 75% of our business - based on sales in 2010, compared to general insurance and health which makes up 21%. Our general insurance mix is approximately 60% personal lines and 40% commercial lines, and is predominantly in Northern Europe and Canada. With 47% of our total general insurance and health business was written in the UK.

Climate change as an issue for Aviva

- We see the potential impacts of climate change as a risk to the longevity of our current business model.
- We see climate change as an increasing disrupter to our vision of providing prosperity and peace of mind to our customers.
- As a responsible business, we are addressing our impact and using our influence to encourage others to consider their impact.
- Climate change is a long term challenge that demands long term solutions which need to be integrated into all aspects of our business model.
- We have long term contracts with over 30 million of our customers, as such we have to ensure that we have a sustainable business model which will in turn we are able to honour our promise when they need us to.

We feel that we have made very good progress this year in integrating climate change considerations into our business, building further on the progress made over the last few years.

[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. Aviva continues to be involved with a number of research pieces over the past year in respect of climate change.
 - a. Aviva has continued to play an active role in the ClimateWise collaboration considering the effect of climate change on morbidity risks in the Healthcare area of the business. This work continues. Currently we monitor longevity statistics compared with emerging industry trends and use reinsurance solutions to mitigate risk. We are considering the implications of this research as part of our Solvency II work.
 - b. Aviva is involved with the CBI Climate Change Board workstream on Consumer Action researching customers' reaction to green products. The research is an update on the CBI's published report – Buying into it: Making the customer case for low carbon.
 - c. As part of Aviva's sponsorship of ClimateWeek (21-27 March 2011) we conducted and published research into the understanding of the UK public on the issue of climate change. The survey found 85% of those questioned are already taking positive action when it comes to tackling climate change, with 54% believing it is down to each individual to take responsibility to try to prevent it. Almost seven in 10 people said they were concerned about the future effects of climate change.

However, there was a strong call for more help and support to enable people to make an even bigger impact, with almost half (46%) believing the introduction of a business code would help make a difference and 42% wanting local councils to provide more facilities to help make "being green" easier.

Recycling topped the list of things that the UK public does at home in a bid to prevent climate change, with nine out of 10 people saying they recycle on a regular basis. Their other energy-saving actions include:

- Turning out the lights when they leave the room (87%)
- Using low energy bulbs (84%)
- Not leaving appliances on standby (66%)
- Walking for journeys of less than a mile (52%)
- Using appliances sparingly (47%)
- Buying eco-efficient houses or white goods (41%).

The research also showed that women are more avid energy savers (86% of women use low energy bulbs compared to 81% of men; 70% of women don't leave appliances on standby compared to 61% of men) whilst men are more inclined to leave the car at home and walk (56% men v 49% women).

Whilst individuals are keen to do their bit when it comes to being green at home, it is a different picture in the workplace. The survey showed that less than one in five (18%) had a climate change policy at their place of work, although they are very keen that the same practices they carry out at home in regard to recycling and energy saving are implemented by their companies.

Among the most important things people said should be instigated at work were:

- Recycling (63%)
- Turning off idle printers (60%)
- Using low energy bulbs (59%)
- Turning off lights (48%)
- Using solar powered heating (40%)
- Turning down the heating (33%).

There are a lot of pressures on businesses in difficult economic times but there are some simple steps they can take to help improve their energy efficiency, which can also help their bottom line.

2. Aviva supports the forecasting of future weather and works with other areas of society to reduce the potential impacts.
 - a. The Drain London project is looking at one of the most serious challenges that London will face in the near future – flooding from surface water.

Drain London will help manage and reduce surface water flood risk in London by improving our knowledge of the surface water drainage system and identifying areas at greatest risk of flooding. We will also demonstrate some of the ways to reduce the risk. It is a partnership of 33 London boroughs, the Environment Agency, Thames Water, Transport for London and London Councils. Aviva has been involved providing advice from an insurance company point of view.

- b. We also rely on the forecasting of accurate weather patterns on a day to day basis so that we can provide the best advice to our customers as to how they can minimise the impact of the weather on them and their property. (specific examples are detailed under Principle 3)

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 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 £300 million for a one in ten year annual loss scenario, compared to approximately £550 for a one in hundred year annual loss scenario.

4. Following extensive research in to the market sector and the risks involved Aviva extended its appetite for environmental goods and services sector in March 2011. Businesses engaged in the environmental goods and services sector are able to benefit from a new range of covers from Aviva through the expansion of our engineering, marine, construction and operational risks cover for onshore wind, solar and energy from waste power generation, including biomass energy production, environmental consultancy and building technologies.

A range of covers are now available to suit the diverse and broad nature of this sector, with potential policyholders ranging from small companies using a single solar panel to national onshore wind farms. (more details of this product are in Principle 3)

5. We regularly share our research with others in respect of climate change, attitudes to the issue, and Aviva's response from different business functions point of view. Examples of this are:
 - a. Presentations at the first Asia Insurance Conference on Climate Change held in Singapore which was followed up by a round table discussion on the subject at the British High Commission, local CII meetings etc.
 - b. Press releases including research (see Principle 1.1.c as example)
 - c. The London Drain and East England work, and
 - d. Continuing provision of data, case studies and research in ClimateWise workstreams and workstreams in other associations

[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 targets

- Support Government action, including regulation, 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. Part of Aviva's climate change strategy is to seek to work with other like-minded companies, associations and policymakers to discuss and construct frameworks, mechanisms and solutions to ensure fair, robust and complete processes are taken forward.
 - a. Aviva believes that stock exchanges can play a crucial role in helping to create more sustainable global capital markets because of their ability to directly influence and monitor the operations and strategy of companies seeking to access the equity markets. We are sending a strong signal that, all things being equal, Aviva Investors would prefer to trade on stock exchanges that maintained this listing provision.

As a result in September Aviva Investors announced that a coalition of responsible investors would be writing to chief executive officers of global listing authorities and stock exchanges to demand that sustainability reporting becomes embedded within listing rules.

The "call to action" was part of a broader engagement initiative that was launched by Aviva Investors and facilitated by the UN-backed Principles for Responsible Investment (PRI) in 2009. It already had the support of investors representing combined assets under management of US\$558 billion, and the company plans to enlist significantly more supporters globally over the coming weeks.

The aim of the engagement initiative was to promote a global listing environment that requires companies to consider how responsible and sustainable their business model is, and also encourages them to put a forward looking sustainability strategy to the vote at their AGM.

Aside from a few notable examples such as the Singapore, Johannesburg and Istanbul Exchanges, we have yet to see a serious commitment from stock exchanges to make changes to their listing rules. A study commissioned by Aviva Investors on the sustainability practices of the world's leading 30 exchanges by market capitalization, called "Sustainable Stock Exchanges – Real Obstacles, Real Opportunities", has found that currently a majority (57%) of exchanges do not provide sustainability reporting guidance for listing companies.

It also found that although 70% of those surveyed agreed that exchanges do have a responsibility to encourage greater corporate responsibility on sustainability issues and nearly all are considering

new initiatives in this area, only 25% would consider altering listing rules to oblige companies to assess how responsible and sustainable their business model is. Just over 10% would consider suggesting that companies put this to the vote.

The topic was also the focus of a special event at the United Nations Conference on Trade and Development (UNCTAD) World Investment Forum in September in Xiamen, China, where international dignitaries, along with representatives from a number of the world's stock exchanges and their regulators, met to discuss investing in sustainable development. Based on Aviva Investors' study, the event examined how stock exchanges can overcome the obstacles they face in requiring companies to develop long-term sustainability practices (including demutualization, competition, conflicting interests and investors' "short-termism" and highlight opportunities in the promotion of sustainability practices among listed companies.

- b. Again, in February 2011, 24 institutional investors led by Aviva Investors wrote to 30 of the world's largest stock exchanges asking that they address inadequate sustainability reporting by companies.

The letter is part of a broader collaborative engagement initiative that was launched by Aviva Investors and facilitated by the UN-backed Principles for Responsible Investment (PRI) in 2008. It aims to encourage stock exchanges to consider how to improve the quality of sustainability reporting by the companies that list on their exchange.

- Exchanges where a large number of companies are disclosing ESG data include: Euronext Paris, Tokyo Stock Exchange, Helsinki, Euronext Amsterdam, Euronext Lisbon and Borsa Italiana.
- Exchanges with the least number of companies disclosing this data include: Australian Stock Exchange, NASDAQ GS, Korea Exchange, Santiago Stock Exchange and Philippine Stock Exchange.

A suggestion particularly advocated by Aviva Investors is a listing requirement for companies to consider how responsible and sustainable their business model is, and put a forward-looking sustainability strategy to the vote at their AGM.

Georg Kell, executive director, UN Global Compact, a key supporter of the initiative, said: "Many global companies understand that long-term shareholder value is enhanced by both embedding sustainability into their long-term strategy and by disclosing fully their progress. Only when investors have business-relevant information at their fingertips, will they be able to assess one company relative to its

peers and allocate capital accordingly. Stock exchanges now have a significant role to play in taking obvious and important next steps to create truly sustainable capital markets.”

2. Having a long history of involvement in the climate change debate such as in 1995 when General Accident joined forces with a group of leading insurance and reinsurance companies to launch the UNEP Statement of Environmental Commitment by the Insurance Industry, we have continued to actively engage and participate and debate either on our own, or as a signatory a statement or letter urging action.
 - a. We showed our support for a positive outcome of the COP 16 by being signatories to a number of statements:

One of the highlights of 2010 was the Joint Statement from The Geneva Association, UNEP-FI, MCII and ClimateWise (Aviva is a member of three of these associations). The Joint Statement called on governments worldwide to harness risk management techniques and insurance expertise to help implement climate change adaptation measures in the developing world. In the context of the increasing economic and human costs of climate change in the developing world, the statement seeks to highlight how governments can unlock significant potential to increase the protection and reduce the vulnerability of developing world populations and economies.

- b. The BITC International Leadership team has established the BITC International Campaign which has the following strategic goal “To mobilise business for good encouraging them to contribute effectively in addressing key social, environmental and economic challenges facing society globally, as measured by their contribution to the MDGs, alignment with the Global Compact and other relevant frameworks”

The Campaign has five strategic objectives:

- Our members
- Our marketplace
- Our workplace
- Our communities
- Our environments – businesses internationally, through their engagement with the international campaign take action on climate change and other environmental issues.

Aviva's group human resources and group corporate responsibility directors are members of the environment workstream that aims to raise the capacity of businesses to take action on climate change and other environmental issues on a global scale.

The primary objective is to champion the development of the international environment offer in line with the international campaign mission. In the short term this will mean the strategic international outreach of BITCs environment work through the development of the Mayday network campaigning in countries where we believe it will add value. Subject to appetite the intention is to begin the roll out of the mayday campaign in India.

3. We responded positively to a letter sent in January 2001 by Green Peace Europe on the targets proposed in the EU Roadmap and also signed a statement by the Corporate Leaders Group in May supporting the Road Map. The statement was being used ahead of a key EU Council meeting in June. In association with the Aldersgate Group Aviva has signed a number of letters to UK politicians over the past year, one of which was welcoming the publication of the 4th Carbon budget.

4. Demonstration of our support for, and lobbying of government policy is very important aspect of our climate change strategy and we continue to do this where we feel Aviva has a particular unique or strong point of view which will impact our business.
 - a. As a member of UK Social Investment Forum (UKSIF) welcomed the creation of the UK Green Investment Bank promoting investment in low carbon technologies. We have supported an Aldersgate Group letter on mandatory reporting and have contributed to the consultation on mandatory report, both through Aldersgate and on an individual company basis.
 - b. As mentioned in Principle 1 & 3 Aviva extended its appetite for environmental goods and services sector in March 2011. The launch of the expansion in covers resonated with the recommendation included in the Government's Carbon Connect report. This followed the government inquiry co-chaired by Lord Teverson calling for insurers to develop such solutions for renewable energy projects.

In respect of impact on public policy the following comments were made:-

Harry Morrison, general manager at the Carbon Trust Standard, said: "Aviva's step into the environmental goods and services market is further evidence of growth in the green economy."

John Cridland, director general, CBI highlighted Aviva's Environmental Goods and Services cover expansion as an example of an element of what economic 'growth that's green' looks like in a speech in early May 2011.

5. Aviva is working with Climate East to provide training to 52 local authority planning authorities and 51 local councils and the Broads Authority through workshop training sessions looking at the long term strategy and direction (where Aviva sees the role of the private sector in adaptation and what do we need from planners to maximise the insurability of the East of England). It will also look at the the likelihood of increased flooding and what does this mean for planning and insurance availability over the medium to longer term.

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.

Aviva seeks to inform customers around climate change risks, mitigation and adaptation measures and how they can be more environmentally responsible.

1. We seeks to engage with customers to limit the impact of extreme weather and flooding by providing advice immediately prior to communications of severe weather warnings, and also what can be done following a severe weather episode. Aviva Canada, UK and Ireland have all issues press releases and other communications over the last year providing information to customers as to how impacts of extreme weather can be limited on their homes, vehicles and businesses.
 - a. In July 2010 Aviva in the UK urged businesses to manage flood risk. Introduction of flood advisory leaflets in its commercial renewal packs is part of its campaign to protect commercial policyholders from the impact of flooding. The hard-copy leaflets giving advice on how to mitigate the risk of flooding are sent to the majority of Aviva commercial customers with their renewal documents. The leaflet can also be downloaded by brokers from Aviva's website at <http://broker.aviva.co.uk/>.

The leaflet advised that while it may not be possible to eliminate the risk of flooding altogether, many practical steps can be taken to reduce the risk of flood damage, particularly if a business is in a high risk area.
 - b. At the end of November Aviva UK published a press release about protecting your pipes as cold weather bites. This was followed up in December 2010 when Aviva sent Arctic weather tips via text to over

500,000 of its motor and household customers warning of the perils of the continued arctic conditions, having done so for the first time in January 2010.

The text said: "Please take care in the cold weather, if you have to drive, take a spade, food and a blanket. At home, leave the heating on to avoid burst pipes."

The advice included:

lagging of pipes, putting insulation on top of pipes and wrapping up water tanks and cisterns in insulating jackets, leaving the heating on if the property is left unoccupied for a few days or weeks, knowing where the water stopcock is, repairing dripping taps and warning insurers if the property will be unoccupied for more than 60 days.

- c. On the day following the flooding in Cornwall on 17 November claims experts and loss adjusters from Aviva began visiting homes and businesses affected by the floods. Emergency payments had already been made and alternative accommodation organised where needed.

Dominic Clayden, director of claims at Aviva, is on the ground in Cornwall to see first-hand the results of the intense rainfall.

"Once again we can see the damage and destruction that severe weather can have on local communities, while the water has receded the tell-tale signs of the flooding are clear to see – piles of debris and sandbags in the street, thick muddy roads and dirty tide marks – over a foot high - on town walls.

"Sadly flooding is all too common and we know from experience the devastating effects it can have on your home and business, so we are only too pleased to be able to help customers get their lives back to normal as quickly as possible.

"Obviously for those homes that have been deluged with water the drying out process can be quite lengthy, so we will be organising, suitable, appropriate alternative accommodation for those who have to move out of their homes while they are being repaired."

Where suitable, Aviva offers basic resilient repairs as standard in homes that are affected by flooding. These include raising electrical sockets higher up the wall, replacing plaster with a Gypsum water-resistant version, and if replacing timber floors, where there is shallow void, there is an option to fill the void and replace with a concrete floor.

- d. Aviva France and its general agents responded quickly to the flooding which occurred in the Var region of southern France during the night of 16 June 2010.

Aviva France, true to its policy of providing good advice and getting closer to its customers, was fully committed to providing the necessary aid for victims of the recent flooding. Group companies Aviva Assurances and Eurofil have already streamlined and simplified the processing and settlement of customer claims.

Even before a state of emergency could be declared, Aviva Assurances, through its network of 900 general agents in France, and Eurofil, which specialises in direct insurance by phone extended the normal claim deadlines by five or 10 days until 31 July, began accepting claims in any format and made advance payments, via its general agents and remote advisers giving special priority to those most in need as a result of the flooding, and focused particularly on the issue of re-housing.

2. We support businesses and customers who seek to provide or implement low carbon technologies and solutions.
 - i. In order to encourage customers to consider reducing their carbon footprint, Aviva France has developed a number of domestic motor and property insurance covers which provide premium reductions for low carbon behaviours:
 1. Limited mileage car insurance - reduction of premium by 10% for drivers with environmentally friendly vehicles, ie those emitting less than 125g of CO₂ per kilometre, those running on biomass fuel (ethanol 85) and hybrid vehicles.
 2. Reduction of 20% premium is offered to drivers whose annual mileage is less than 9,000 km.
 3. Drivers of diesel fuelled vehicles whose annual mileage is less than 15,000 km benefit from a reduction of 5%.
 4. "Less than 5,000km a year" package, launched last April, allows customers to reduce their insurance premium by up to 30%

Contracts with built-in reductions based on annual mileage represent almost half of subscriptions to Aviva France.

- a) Drivers with an annual subscription to public transport benefit from a 10% reduction on their car insurance premium, and from a free Velocity Pack. The reduction is applicable on a rolling basis every year, and can be added to other reductions. Tested from the beginning

of December 2008 in greater Paris region, the policy was extended to the whole of France in 2009.

- b) A bicycle insurance - "vélocité". This is aimed at clients using city mobility schemes such as "Vélib", and cyclists in general. It is a family guarantee, covering parents and children with a death benefit of €30,000.

Furthermore, Aviva France covers the following up to a limit of €500 per victim:

- The repair costs of damage suffered by the bicycle or its replacement, whether it belongs to the client, is rented or borrowed.
- The compensation of damage caused to personal belongings, when the damage results from a collision with an identified third party.

These guarantees are accorded no matter how small the percentage of loss.

- c) A "green credit" offer, launched in September 2009, offering a favourable rate of interest on loans of over 24 months that are used to finance the purchase of a new, "green" car (one which emits less than 130g of CO₂/km, which runs on the biomass fuel "Ethanol 85", or hybrid/electric vehicles).
- d) At the end of 2010, Aviva France reached an agreement with SNCF, the French national railway company: our clients will benefit from lower prices on the "Auto-train" service proposed by SNCF (it's basically using the train to travel a long distance and "putting" the car on the train).
- e) Since 2007, Aviva France has offered specific guarantees for items that run off new energies. This is in the form of a "break the ice" guarantee for multi-risk habitation, (up to a limit of €38 000) covering breakage of solar panels used for producing hot water and breakage of photovoltaic modules transforming solar rays into electricity.

Civil responsibility extended to cover financial consequences of damage caused to EDF employees as well as to third parties during work carried out to install photovoltaic or wind-powered equipment.

- f) In 2009 Aviva France broadened its range of home insurance offers with two new guarantees; the theft of

solar panels and captors, photovoltaic panels, wind generators, installation of geothermal and aerothermal energy up to a limit of €38,000, and if the house has a geothermal installation, the guarantee is extended to repairs of underground mechanisms of the installation (up to a limit of €3,000) including the excavation works.

A new product is soon to be launched that will replace heating systems in the homes of clients that have been destroyed with new, sustainable heating systems, with a choice from the following:

- Wind power, photovoltaic, solar panels
- Specific heat pumps, geothermal, aerothermal

g) Aviva France will pay the extra cost of installing these systems, and will reimburse the cost of updates and adaptations made necessary by the regulations in force at the time of the claim such as double glazing, insulation. Furthermore, if our client already has photovoltaic panels, we will give a “financial loss” guarantee up to a limit of €2,000 to compensate revenue lost due to the inability to sell the energy produced by its photovoltaic models during the reconstruction period.

Aviva France also takes its professional clients into account in producing green products. The first step is its presentation campaign on the risks of the road with the agreement “Entreprise Citoyenne de la route”, which includes an environmental factor.

This agreement is intended to present road transport companies registered with Aviva France with a structure to reduce:

- Road risks (including loading and unloading), the principle cause of fatal working accidents
- CO2 emissions, to improve general environmental performance of road transport of products Aviva France plans to sign the agreement with 50% of its current clients and 60% of new clients in three years' time. The group hopes to reduce the number of accidents and to encourage a growing number of drivers

to adopt responsible behaviour amongst its clients.

Transport companies who commit to respecting the principles of the agreement are bound to reduce their consumption of fuel. Furthermore, Aviva France commits to track improvement of road risk as subscriptions evolve

h. In March 2011 Aviva UK extended its appetite for environmental goods and services sector. Businesses engaged in the environmental goods and services sector could benefit from a new range of covers from Aviva. Aviva expanded its engineering, marine, construction and operational risks cover for onshore wind, solar and energy from waste power generation, including biomass energy production, environmental consultancy and building technologies.

A range of covers are now available to suit the diverse and broad nature of this sector, with potential policyholders ranging from small companies using a single solar panel to national onshore wind farms.

Yawar Choudhry, commercial product consultant at Aviva, said: “The environmental goods and services sector is worth £107 billion in the UK, and involves over 55,000 businesses across sectors such as construction, manufacturing, design, architecture and consultancy. It is much larger and has greater economic and employment impact than is generally recognised.

“As incentives to lower emissions develop, the sector is forecast to increase in value by up to £45 billion by 2015. Aviva has the capability to support the increased focus in the UK on harnessing renewable energy, lowering

carbon emissions and achieving compliance with environmental regulations.

“For example, a landowner under a traditional commercial policy may decide to install a wind turbine on his property to sell energy to the electricity grid. Aviva can now cover every aspect of the project, from marine transit if the wind turbine is imported from abroad, through to construction and operation once the turbine is built.”

Cover is also available for those working in environmental consultancy, in areas such as land remediation, geological surveying, pollution control and environmental monitoring. As local councils tighten environmental regulations on building technologies, brokers may find this cover will be increasingly relevant for designers and architects, and specialist window and door manufacturers and installers.

Public liability cover will now include failure to supply power (up to £1 million), and cover for any reduction in the value of property (up to £1 million) due to exposure of electromagnetic radiation or electromagnetic fields. Professional indemnity cover is also available for environmental consultants, up to the value of £5 million.

Choudhry continued: “Aviva can now offer a range of covers for businesses working in the environmental goods and services sector. This saves brokers the administrative burden of placing multiple policies with more than one insurer.”

The news follows a recent Carbon Trust survey of UK business leaders which found that 92% believe “green growth”

represents an opportunity for their business.

In Canada, the Toronto state authorities have introduced feed in tariffs for domestic property owners that generate renewable energy through wind and solar and export it to the national electricity grid. Aviva Canada has introduced an endorsement as an addition to the domestic insurance product that covers breakdown for the technology and business interruption thus providing support lower carbon economies.

3. Aviva continues to focus on making the promise fulfilment area of our business more sustainable.

- a. Our independent work in this area began in 2009 when we starting working with one of our suppliers in the vehicle repair area Apollo Accident Repair Centres to seek innovative solutions to contain costs, reduce waste and energy consumption and to support jobs in a difficult economic climate.

Earthshine consultancy (a not for profit organisation) reviewed the benefits of the change in process. It identified that there was a 34% reduction in operational carbon footprint, mainly due to the more efficient and localised drying technology. Significant savings are also made with embedded carbon. Energy costs have gone down from £16.50 to £10.89 per repair, amounting to savings in the region of £74,000 a year. Throughout 2010 this was rolled out to our own accident repair network.

- b. The other area that we are concentrating on is making the repairs to properties following water damage more sustainable by reducing the carbon emissions and waste created through the process. Please see note in Principle 3 – 1c.
 - c. Aviva continues to be an active participant in the ClimateWise collaboration on Sustainable Claims Management, now entering its second phase of work seeking to set benchmarks and targets.
4. As with previous years, because Aviva general insurance coverage is focused on Northern Europe and Canada we have little opportunity to create general insurance products that assist the developing world to understand and respond to climate change. However, through our work with BITC Leadership Group (Principle 2) and participation in the UNICEF roundtable on the private sector's in progressing the climate change agenda we seek to support this work.

The UN Office for the Coordination of Humanitarian Affairs (Ocha) and the Internal Displacement Monitoring Centre (IDMC) looked at the data in respect of climate migration for 2008.

The data suggests that at least 36 million people were displaced by "sudden - onset natural disasters", of whom more than 20 million were displaced owing to the sudden onset of weather-related disasters, including about 6.5 million people because of floods in India.

Research from other sources suggests that many millions of people are also displaced annually as a result of slow-onset climate-related disasters such as drought.

There isn't a great deal that we can do about around displacement by sudden -onset natural disasters such as flood. The human and economic impact is equally severe whether it occurs in a developing or developed country. Potentially the only difference is the financial foundation of the individuals involved to rely on, whether it is savings or insurance provision.

- a. Building on our work mentioned in previous responses in this area Aviva India launched Dhan Sanchay, a universal life product last June. It works like a personal savings account for the customer and combines the best features of traditional products and ULIPs.

Around 80% of India's working population falls in the category of irregular income earners and this product is uniquely designed to address their need for investment as well as protection. Besides flexibility to deposit premium anytime suitable to the policy-holder, it also offers a life cover which is 10 times the first premium. In this policy, the life cover does not lapse even if one misses paying subsequent premiums as long as there is sufficient balance available to meet policy fees.

The product provides a unique opportunity for customers, particularly in semi-urban and rural areas, with irregular income, through protection by the way of life cover as well as providing flexibility to pay premiums as per one's income flows.

The highlights of Aviva Dhan Sanchay:

- Savings – Flexibility to pay premiums, depending on seasonality of the policy-holder's income and priorities.
- Protection – There will be an insurance cover equal to 10 times the first premium paid.
- Liquidity – Easy liquidity through partial withdrawals after three years.

- Assured growth - Interest rate will be declared in advance for every quarter of the financial year and will be credited to the Policyholder Deposit Account at the end of respective quarter. Interest once credited will become guaranteed.
 - The minimum and maximum first premium payments are Rs 2,500 and Rs 30,000 respectively which can be followed by minimum and maximum subsequent payments of Rs 500 and Rs 100,000 pa respectively.
 - The policy term offered is 10 years.
- b. Aviva Spain's Orbayu Foundation (a micro credit product) which we reported on last year is now a year old. As a result it has generated more than 100 micro-credits granted in Latin America. Micro-credits between €75 and €1,000 in projects are provided to people with no access to traditional financing. The project is expanding to providing funding activities in Africa.

The Orbayu Foundation, which is sponsored by representatives of the insurer Aviva, ESIC and the missionaries of the congregation of the Sagrado Corazón de Jesús (SCJ), was created a year ago with the objective of promoting economic and social development in some of the most impoverished areas of Latin America, by granting micro-credits.

The micro-credits granted in 2010 fluctuated between €75 and €1,000; investments have been made in agriculture-related projects (land leasing and purchase of agricultural property), food, catering and packaging.

Most of the money lent has already been paid back.

- c. On a wider view of our work in supporting the limitation of environmental impact in developing countries we took a rare public stance in July 2010 on the poor corporate responsibility performance of a company we held stock in. Aviva Investors voted against three resolutions at Vedanta Resources Plc's shareholder meeting today after campaign groups criticized an Indian mining project. The vote was against Vedanta resolutions including the reporting of its accounts and remuneration for the executive chairman. Aviva Investors held a 0.3% stake in Vedanta through tracking funds and isn't investing "actively" in the company.

Aviva Investors are increasingly joining with other likeminded investors to interrogate companies' strategy which has an impact on the environment and or society. There is the potential that if companies do not take responsibilities for their external costs and manage them accordingly in time could be classed as stranded assets

due to the high carbon intensity, environmental impact or the social issues related to the production of goods.

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. One of the most important initiatives that we have taken was our support for the Carbon Disclosure Project since before its inception in 2001. The CDP's work so far has been catalytic in raising corporate awareness of the issue and disclosure of performance.

As an example of the way in which we use their data, in the absence of a mandatory reporting requirement from government, Aviva Investors has been advocating the disclosure of emissions in its voting at annual general meetings (AGMs) for some years. Aviva Investors has embedded a requirement for companies to respond to the Carbon Disclosure Project (CDP) in its global proxy voting. While this is not a substitute for formal regulation, it is producing results.

For example, in 2007, Aviva Investors' sustainable and responsible investments team engaged with 29 persistently non-responding companies where it felt climate change was a potentially material issue, to request CDP disclosure. To date, in terms of the overall effectiveness of this project, 86% of the companies that we have engaged with since 2007 have now responded.

Aviva Investors will continue to engage with those remaining persistent non-responders, indicating that it may withhold support from their report and accounts (R&A) at future AGMs should the companies continue to fail to respond.

But we know that we also need to continue to push engagement on from this relatively blunt instrument. Aviva has made a positive start by leading from the front and putting its own corporate responsibility report to a separate investor vote at its 2010 AGM. We are the first company in the UK and the first financial services group in the world to take this step. The outcome was

overwhelmingly positive, with more than 99.9% of votes cast in favour of the report; this was repeated in 2011 with a vote of 99.2%. We see part of our role as helping influence and encourage other companies to promote sustainable behaviour.

Openness and transparency is key. Any company that is already reporting its environmental and social impacts can – with minimal additional resource – show its commitment and accountability to investors in this way. It has enormous potential to raise levels of understanding and invite open debate and feedback.

2. We have followed up this work with CDP when in 2009 Aviva's chairman called for CDP to facilitate the opportunity for companies to "go beyond disclosure" in their voluntary report and make public their intentions to seek areas of climate change mitigation. This is because at Aviva we believe that the external costs of greenhouse gas emissions will become internalised into company cash flows and profitability. We encourage companies to consider what action that they can take now to reduce emissions.

We added funding of £85,000 to this call for the development of the work in this area. Climate Action, launched in March 2011, is a natural evolution of the disclosure process established through CDP over the last 10 years. But it also represents a new era in investor focus on the benefits of carbon reductions and represents a clear message from investors to companies that undertaking emissions reduction activities is now expected. Investors are also showing a strong appetite to ensure that companies do comply with their request – some are considering going as far as divesting from companies that do not.

As a result, this initiative has the potential to be transformational on a global scale in highlighting the business benefits of emissions reductions and accelerating these reductions.

Aviva Investors continues to use CDP responses as a tool to encourage companies to disclose their carbon impact. Climate Action will enhance the quality of our investment decisions going forward.

3. Aviva Investors' work with our property managing agents continues on the base of the sustainability charter around target setting and better energy management. We continue to consider the application of appropriate energy efficient technologies on an individual property basis. The Carbon Reduction Commitment Energy Efficiency Scheme (CRC EES) has helped focus our measurement and management for this area of the business.

Aviva Investors has also focused on reducing the potential environmental impact of their real estate portfolio in terms of new construction. An example of this is the construction on the périphérique, Paris. The Ovalie, a building

which, when completed, will contain 14,000m² of office space will act as the new business centre for the town of Saint-Ouen. Work on the building will be completed in 2012.

The result of a joint venture between Aviva Investors Real Estate and property developer Capital & Continental, Ovalie owes its name to its geometric shape. This HQE, or High Environmental Quality, building will be awarded special certification for energy-efficient buildings, as it will be 50% more efficient than the regulatory minimum.

Another construction project, the Carpe Diem Tower, unveiled as part of the La Défense regeneration scheme, will be the first high-rise building in France to have both Haute Qualité Environnementale (HQE) and Leadership in Energy and Environmental Design (LEED) GOLD environmental certification.

Jean-Pierre Menanteau, Aviva France CEO, said that he was "delighted that Aviva has once again demonstrated its expertise in real estate and the depth of its commitment to sustainable development.

4. Aviva Investors hosted the second ever Corporate Governance master class for journalists in April. Now an annual event, it was almost standing room only with 17 Journalists from outlets such as: the Financial Times; FTfm; Financial News; Expansión and Handelsblatt - Spain and Germany's main financial papers; as well as the main newswires and pensions papers.

The strong turnout was a mark of the growing reputation we are gaining as a responsible investor. The aim of this year's event was to showcase how company engagement is an integral part of our investment process and the importance of environmental, social and governance (ESG) issues to long-term investment.

Presentations at the master class included:

- An overview on the UK FRC Stewardship code
- A case study on F&C asset management - where we acted on behalf of our investors to initiate board room changes in an effort to improve performance.
- Our engagement with Vedanta and the Sustainable Stock Exchanges initiative.
- The role of audit in the financial crisis.
- Major themes for the year ahead including board room diversity, remuneration, audit choice, corporate responsibility and disclosure.

The event was a huge success in helping build awareness and recognition of our Corporate Governance team and several journalists have already been in touch for follow-up interviews.

5. Aviva Investors provides investment tutorials for pension professionals. Our award winning "Investment Tutor" is a free training resource to pension fund trustees. The course includes a module on ESG.

Last year we mentioned that we were working with Aviva's Employee Pension scheme Pension Trustees and this work has progressed further and will be an agenda item at the next Pension Trustees board meeting.

Aviva Investors took up the ClimateWise invitation to attend the P8 summit held 8-9 February 2011 in Brussels. Steve Waygood, head of engagement and Paul Abberley, CEO – Aviva Investors London. Two workstreams were developed from the P8 summit which ClimateWise members are taking forward are:

- The climate-related risks and opportunities facing fixed income investors need to be better understood in the insurance industry.
- The role of regulation and the capacity of institutional investors to engage with the big public/private partnerships such as climate bonds and green bonds need to be better understood so that potential synergies and barriers can be identified.

Aviva is involved in these workstreams.

[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. Aviva works with suppliers to improve the sustainability of their service to us and to our customers (please refer to Principle 3.3). We have a boiler plate "supplier code of behaviours" and use specific contractual clauses ensure minimum standards in this area. We then work with suppliers on a collaborative basis to improve the sustainability of their service to us.
 - a. One example of this is the work we conducted over the year with Rentokil Initial, our cleaning and waste management partner for the UK business which resulted in us winning the City of London's the prestigious Chairman's Cup in the City of London Clean City Awards for the second time.

The award, presented on 21 January, is for Aviva's group head office, 1 Undershaft, EC3 and honours best practice in waste management by reducing, reusing and recycling.

Key factors that impressed the judges include the wormery that is used to manage Aviva's food waste. Additionally, the new development of food waste being sent to a local centre where it is turned into compost and energy that provides local electricity.

Also, on top of the recycling that already occurs, all general waste is sent to a local material recycling facility where further materials that can be recycled are sorted. These measures have resulted in an overall recycle rate of 88% - the remaining 12% is processed into biofuel. The initiatives in place at Aviva's group head office mean that we send zero waste to landfill.

Aviva has also looked to influence suppliers to minimise waste through reduced packaging and supported tenants in the building by providing them with free recycling bins. Aviva UK has a zero to landfill target by 2015.

2. Aviva's gross carbon emissions have reduced again this year by 4%; a reduction for the third year running. Our absolute carbon footprint has increased as a result of us purchasing grid average electricity in the UK from July 2010. The amount of renewable/zero emission electricity on a worldwide basis has reduced accordingly from 63% in 2009 to 39% in 2010.

Our green IT programme focuses on reducing IT related emissions as it is estimated 40% of our electricity consumption is IT-related. We are currently looking at ways that we can more accurately benchmark this impact and so further identify reduction measures we can employ. The other aspect is our work to decarbonise our communications through the use of telepresence, webex and MS Office Communicator.

In 2010 we held 1,151 meetings (2009: 1,030) via telepresence, accommodating a total of 10,853 attendees over a total of 5,505 meeting hours (2009: 4,927). 43% of those meetings had at least one executive committee member attending.

Similarly 9,000 meetings (2009: 5,450) were held over webex providing training and hosting collaborative meetings. This equates to 30,627 hours (2009: 24,000) an increase of 28%.

With the migration to the One Aviva model in Europe, and Dublin as the regional head office, there has been an inevitable increase in air travel within the Europe region. Air kilometres have increased from 5,116,951km in 2009 to 14,307,089km in 2010. In order to address this increase, Aviva Europe has

installed new telepresence systems in Paris, Madrid, Warsaw, Dublin and Milan; along with a further four high-definition video conferencing suites in Paris, Warsaw, Turkey and Russia. The investment in these suites along with the roll out of MS Office Communicator should provide a realistic future way of working.

We have recently appointed a new travel agency to provide travel services for the following Aviva business: UK, US, Ireland, Canada, France, Spain, Poland and Dubai. This new service will include management information on air kilometres and CO2 emissions to provide a further improvement in the consistency and quality of reporting.

Our focus for energy efficiency has been electricity consumption in 2010 and will be again in 2011. 1E Nightwatchman, software which switches off networked laptops, PCs and monitors remotely, was trialled at one location in the UK and demonstrated a 6.5% reduction in electricity usage. The cost benefit analysis of this shows a projected payback period of one year five months, a saving in electricity costs of £427,000 and 2,800 tonnes of carbon per annum. This has therefore been rolled out across the UK and will be implemented in Europe and the Asia Pacific region in 2011.

For one of our larger UK offices we have trialled Powerperfector voltage optimisers which have reduced electricity consumption by 8% per annum for that site, saving £692,000 and 324 tonnes CO2.

Aviva US has now received LEED Gold Certification for the new 33,444m2 head office in Des Moines from the US Green Buildings Council. It is one of only five buildings of its size or larger in the US to achieve this designation. The building, accommodating 1,300 employees, is constructed from locally sourced material and includes rainwater run-off and collection, food waste composting, natural lighting, motion sensors and auto-dimming in offices and conference rooms.

- Through Aviva's worldwide business operations in 2010, 127,685 tonnes of carbon dioxide (CO2) or equivalent were emitted into the atmosphere. In July 2010, the main UK electricity contract for zero emission electricity ended. As the UK government advised in 2008 that the benefit of the related zero emissions are not granted to the purchasing company, we sought the best value grid average electricity contract, taking into account the Climate Change Levy and will, going forwards, purchase carbon offsets to account for the emissions from this.

Aviva plc – operational carbon footprint covering 100% of employees GHG Emissions data from 1 Jan 2010 to 31 Dec 2010

Tonnes CO2e	2010	2009	Baseline year 2006
Scope 1	63,784	42,224	52,847
Scope 2*	68,628	81,994	90,591

**Aviva plc – operational carbon footprint covering 100% of employees GHG
Emissions data from 1 Jan 2010 to 31 Dec 2010**

Tonnes CO2e	2010	2009	Baseline year 2006
Scope 3	15,839	30,508	21,952
Gross CO2 emissions*	148,251	154,726	165,390
Absolute CO2 footprint	127,685	104,351	125,400
Carbon offsetting	(133,049)	(109,568)	(132,000)
Total net emissions	(6,336)	(5,217)	(6,600)

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

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

To compensate for these emissions we purchased carbon offsets to 105% from the voluntary carbon market at a total cost in the region of £462,500. This is the fourth year in which we have addressed the issue in this way, complementing our internal carbon reduction programme of employing energy-efficient technologies and sourcing renewable electricity where the zero carbon nature of the electricity is recognised as a benefit to the Company.

Our Group annual CO2 reduction target still stands at 5% with a long term reduction of 30% by 2020 compared to our 2006 baseline. We have achieved a 10% reduction to date.

Again this year we have disclosed the environmental impact of our operations and put it to the shareholder vote.

A recent audit of the top 300 companies in Europe by The Environmental Investment Organisation (EIO) ranked Aviva in first place. The EIO measures carbon intensity, which is calculated using the ratio of carbon emissions to turnover and the transparency of reporting.

- Employee engagement – we continue to raise awareness of the issue of climate change and role employees can play in reducing their environmental impact in the workplace and at home. In addition to the general communications on Aviva’s intranet, our focus of employee engagement was around the 10:10 campaign used by the UK and Europe businesses, the energy efficiency week at the end of October and ClimateWeek, of which Aviva was a sponsor, in March.

Employees took part in the ClimateWeek Quiz, the Climate Week Challenge, "drop in" sessions on climate change and Bike Boosts to encourage employees to cycle.

We continue to offer interest-free loans for bicycle and provide a salary sacrifice scheme so that employees can offset their personal carbon footprint.

Our intranet forums are a useful tool to raise debate around the issue of climate change such as whether climate change is natural or manmade, reducing waste in business operations, and requests to participate in research into climate risk, etc.

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 group chief executive, Andrew Moss is the board sponsor of our corporate responsibility programme (which includes climate change and environmental management). The board CR committee spent 5% of its meeting time discussing specific climate change issues in 2010.

Aviva's chairman, Lord Sharman is a strong advocate of climate change issues and responsible business response to the issue. As well as actively participating in the ClimateWise chairman and chief executive officer (CEO) event in March, he wrote an article in the October Environmental Finance Magazine. Paul Abberley, CEO Aviva Investors London was a key speaker at the Aviva sponsored ClimateWise Review in November and John Ainley, Group HR Director sits on the CBI Climate Change Board and the BITC International Leadership Environment workstream. 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.

This document constitutes Aviva's 2011 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 Annual Report & Accounts and Corporate Responsibility Report; however this report provides the level of detail which cannot be realistically included in other public reports the seek to cover a wider scope of information.