THE INSURANCE INDUSTRY'S CONTRIBUTION TO A RESILIENT LOW CARBON ECONOMY

ClimateWise Independent Review 2014

ClimateWise
REDUCING THE RISK FOR TOMORROW

Facilitated by

UNIVERSITY OF CAMBRIDGE
INSTITUTE FOR SUSTAINABILITY LEADERSHIP

Lead Author

pwc

Contents

About ClimateWise

ClimateWise leverages the insurance industry's expertise to better understand, communicate and act on climate change risk.

Members commit to action following six key principles and are independently reviewed against these annually. ClimateWise's membership includes non-life and life insurers, reinsurers, intermediaries, risk modellers and professional bodies from around the world covering Asia, Europe, North America and Southern Africa. Membership is led from the Company Board level and supported by senior practitioners from across the organisation.

ClimateWise is a voluntary initiative, driven by its members and facilitated on a not-for profit basis by the University of Cambridge Institute for Sustainability Leadership (CISL), which provides the Secretariat for the group.

Connect with us via our LinkedIn Group (Search 'ClimateWise'),
Twitter (@ClimateWise) or contact the ClimateWise Secretariat:
1 Trumpington Street, Cambridge, CB2 1QA, United Kingdom
T: +44 (0)1223 768850 | E: info@climatewise.org.uk | www.climatewise.org.uk

Chair's foreword

The *New Climate Economy Report: Better Growth, Better Climate* was launched in September. Led by a Global Commission of economic leaders from governments, academia, businesses and finance including Michel Liès of Swiss Re, it demonstrates the potential for improving economic performance at the same time as addressing the challenge of climate change.

Left unchecked, issues arising from unsustainable development would affect the actuarial assumptions underpinning the insurance products that our industry provides, potentially rendering significant proportions of the economy uninsurable and shrinking our addressable market.

ClimateWise provides a framework for its members to demonstrate how the insurance industry can contribute to a low carbon resilient economy. As a leadership group we know that this requires far sighted and innovative action and that best practice will continue to evolve. Consequently the way members are asked to provide evidence has changed to increase focus on materiality and impact. I am delighted that members have responded to this new process so positively, realising that it will make it easier to make the business case for action that has commercial, environmental and societal benefits.

Contributing to a low carbon resilient economy requires working in partnership and ensuring indicators of progress are understood and acted on by others within our value chain, both those that attribute value to our actions and those that require our services. This ongoing conversation to build consensus is reflected in many of the actions evidenced by members with particular commentary from a ratings agency and city authority network. Much more needs to be done to align interests to meet the future we need to help shape. As one of our customers so neatly put it "I want my pension to help create the future I want to retire into".

The New Economy Report sets out clear themes around resource efficiency, infrastructure investment and innovation. You will find examples of action on all these within the report and in my new role as ClimateWise Chair, I look forward to increasingly being able to demonstrate progress in terms of building resilience in our economies and encouraging low carbon energy transition.

Maurice Tulloch
Chair, ClimateWise

Introduction

This 2014 review is the first under the revised ClimateWise Principles and performance measurement approach. Following five successful years between 2008 and 2012, a strategic appraisal was undertaken in consultation with members, to ensure that the annual review process continues to remain relevant in achieving its objective of driving ambitious action through core business strategies. The process has therefore been revised in line with evolving good practice and has a greater focus on integration into core business and future activity planning.

This new approach raises the bar for performance in managing climate risk. Member scores have therefore fallen across the board in absolute terms. There continues to be notable variation in performance across the member group, with some excellent examples of innovation, integration into strategy and a desire to push the boundaries of leadership in climate risk. Key recommendations to members in terms of improving performance going forward include:

- linking research to impacts on core business strategy
- prioritising public engagement on material areas
- evidencing board-level engagement on climate change
- measuring impact
- exploring options to integrate climate change considerations into investment activities
- demonstrating planned activities

Climate change context

The current climate target of governments convened under the UN Framework Convention on Climate Change (UNFCCC) is to limit global average temperature rise to 2°C. The IPCC warns that our current trajectory, which would use the century's carbon budget within the next twenty years, will lead to estimated warming of 3.7 – 4.8°C over the 21st century. Without rapid and significant efforts to limit emissions, the world will need to brace itself for climate shocks of increasing frequency and severity, and resulting social and political impacts.

In December 2015, governments from around the world will meet at the UNFCCC summit in Paris with the aim of setting a framework for national governments to drive down carbon emissions to avoid extreme climate change and prepare for expected impacts. Under a global agreement, policy developments such as those that make carbon intensive activities more expensive, or that reward and enable financial flows into low carbon developments, may produce fewer shocks and challenges than unilateral action.

The build-up of momentum towards Paris 2015 began in September 2014 at a one-day summit hosted in New York by UN Secretary-General Ban Ki-moon, attended by over 120 government and state heads. The summit was the first time since Copenhagen 2009 that world leaders came together to discuss climate change and was notable as it included many business leaders. There was much positivity and goodwill in the scale and breadth of issues covered.

Many of the pledges made by governments and business were restatements of existing targets, but several important commitments emerged. A range of financial institutions announced the mobilisation of $200 billion for low carbon and climate resilient investment, along with the decarbonisation of additional investments and funds. 73 governments and over 1,000 businesses and investors also agreed to support carbon pricing, while the insurance industry-led '1-in-100' initiative set out plans to integrate disaster risk into the financial system.

Despite this progress, the fact remains that growth needs to be de-coupled from carbon.[1] This means transforming how we generate and use energy, and deploying at scale innovative

[1] The Low Carbon Economy Index: www.pwc.co.uk/assets/pdf/low-carbon-economy-index-2014.pdf

technologies with the potential to catalyse a new wave of sustainable growth. The scenarios and uncertainties involved may be physical, political or economic, and are important considerations for ClimateWise members in helping the public and private sectors, and civilians, move to a resilient, low carbon economy.

Climate change and insurance

In the current market, the insurance industry is under pressure to operate economically and efficiently, be profitable and preserve capital, comply with new and existing regulations and standards, meet competitive pressures, and take advantage of growth opportunities. Organisations that address these issues most successfully are likely to have a competitive advantage over peers. Climate change plays a part in this potential advantage: helping customers manage climate risk increases their resilience, it presents new markets and opportunities for the sale of products and services, low carbon technologies and behaviours can drive operational efficiencies, and climate change is an area of increasing expectation in annual reporting and regulatory submissions.[2]

The role for financial regulators to consider environmental risk has also been rising up the agenda. In the US, the SEC's Guidance Regarding Disclosure Related to Climate Change and the NAIC's Climate Risk Disclosure Survey have contributed to greater disclosure on climate risk by insurers. In the UK, insurance firms have been asked to respond to questions on how climate change affects their business to inform the Prudential Regulatory Authority (PRA)'s own reporting to government. The questions, which cover many of the areas the ClimateWise Principles cover, relate to current and future impacts of climate change on the organisation, its approach to managing climate risk, including risk thresholds, and the role of the insurance industry and its regulators in supporting adaptation.

There are other key stakeholders who also have a keen interest in the performance of the insurance industry on managing climate risk. Policymakers and public authorities (such as city municipalities) are interested in how the industry reduces the risk to economic (and social) stability from extreme weather events and takes a key role in building resilient cities. Rating agencies, though seeing climate change as a limited impact on ratings in the short term, are keen for the industry to manage exposures in both its insurance and investment books. In this report we provide executive summaries for city and rating agency stakeholders.

The revised ClimateWise approach

The focus of the revised approach for the 2014 ClimateWise Review is less on capturing process and more on trying to understand outcomes, both in terms of business outcomes and impact on social and environmental goals related to climate change through the following:

- **Integration and alignment with business focus:** The new approach encourages members to integrate the consideration of climate change impacts into core strategy and services.

  As members of ClimateWise carry out different types of business activity, the new review process is weighted to encourage actions that are most relevant to business type. For example, supporting awareness of customers for brokers, and risk analysis for risk modellers.

- **Prioritisation:** Members are asked to focus on their rationales for certain activities and how this relates to:
  - the organisation's main line of business, and
  - their understanding of wider low carbon and resilient impact.

There may be reasons why this focus is not commercially possible, but highlighting these can help identify common barriers that need collective action to address.

[2] CDP www.cdp.net/en-US/Pages/disclosure-analytics.aspx and Environment Agency review of environmental disclosures www.gov.uk/government/uploads/system/uploads/attachment_data/file/290052/Disclosures_full_report_04c911.pdf

Figure 1: Overview of Member performance

The principles carry different weightings to reflect their materiality for the industry and the organisation types. Across the membership group the impact of weighting can be seen in the chart above showing points achieved by principle.

- **Disclosure of planned activities:** To make the provision of evidence more forward looking, members are encouraged to share provisional objectives for the coming year. While this is a difficult shift to make, it is essential if change is to be achieved.

You will see increased focus on these key areas in the commentary of this report. We also include a discussion of what identifying and measuring impact means for the insurance industry and ClimateWise members.

Key recommendations for further improvement among reporting members include:

- **Linking research to impact on core business strategy:** Members could better articulate how the research they conduct on climate change has led to changes in their business strategies or products
- **Prioritising public engagement on material areas:** Members could more clearly outline the climate change issues most relevant to them and how their public engagement activities focus on these
- **Evidencing board level engagement on climate change:** Members could improve their disclosure regarding the climate related information received and reviewed at senior level, and how this is used to make strategic decisions
- **Exploring options to integrate into investment decisions:** Members could increase dialogue with third party managers, communication of investment beliefs and monitoring of impacts from climate related investments
- **Measuring impact:** Members could better show how their climate change activities led to outcomes e.g. an increase in the number of 'green' products and services sold, or the resulting changes in investment decisions as a result of a responsible investment policy
- **Demonstrating planned activities:** Members should develop further processes to provide information regarding objectives, planned activities and how they intend to develop existing initiatives

Measuring impact

The pursuit of a resilient low carbon economy

The environment in which economies seek to be successful is changing fast. The threat of climate change is increasing the risk to stable growth, in particular in emerging markets – the areas of largest growth potential.[3] 'Resilient growth' is likely to become increasingly important to give stability to investments, economies and lives. For growth to be resilient (and sustainable) it must pursue a set of broader strategic outcomes with benefits for consumers, employees, suppliers, shareholders and society. It needs to recognise that there may be synergies and trade-offs and find the optimum path through potentially competing objectives (e.g. urban coastal expansion vs. flood defences).

ClimateWise members are already contributing in numerous ways to a resilient low carbon economy and its positive social and environmental outcomes, for example supporting homeowners to improve their resilience to flooding (sub-principle 3.1), the provision of micro-insurance products to consumers in emerging economies (sub-principle 3.4) and integrating climate change considerations into investment decisions (sub-principle 4.2). But how confident is the insurance industry that their initiatives really make a difference to the agenda? And do the initiatives represent the most effective use of company resources?

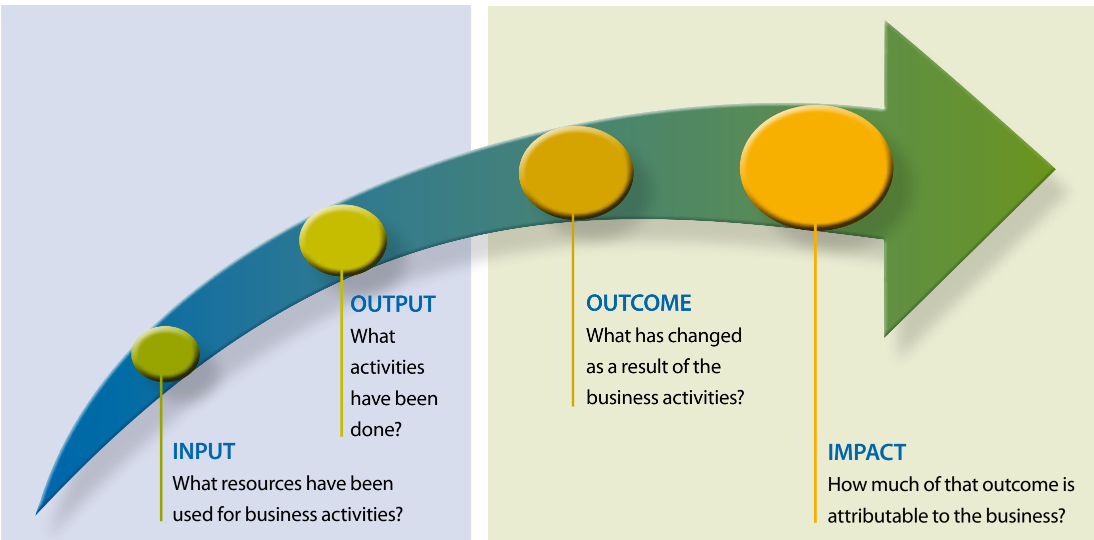
In this evolving business context, the industry needs a framework to better understand its impact in a more holistic way that includes environmental and social, as well as economic, impacts. The ClimateWise Review is incentivising a move towards:

- A consistent method for monitoring and evaluating the effectiveness of initiatives
- Developing and prioritising initiatives which have the most positive impact
- Providing more holistic information upon which to base management decisions
- Identifying new business opportunities
- Clearer articulation of the value created by an organisation
- Generating meaningful data for engagement with policymakers.

From inputs to impacts

Conventional performance measurement focuses mainly on inputs and outputs. Rarely does it consider the resulting outcomes and impacts whose significance may not be measured, calculated or fully understood. Impact measurement techniques can address these shortcomings by considering the longer-term outcomes and associated impacts of business activities.

Figure 2: From input to impact



[3] IMF World Economic Outlook www.imf.org/external/pubs/ft/weo/2014/02/pdf/text.pdf

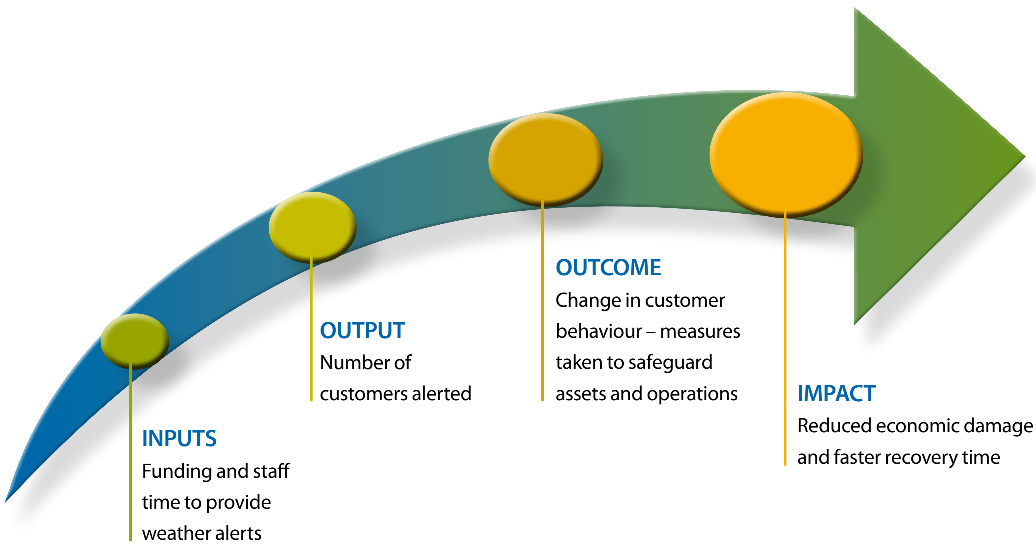
Impact measurement in ClimateWise reports

ClimateWise members are at the beginning of measuring impact, with progress to date being on measuring inputs and outputs. Areas of measurement include, for example:

AREA	INPUT	OUTPUT	OUTCOMES
Environmental performance	Cost of planning and implementing efficiency activities (including staff time and resources)	Installed technology	Avoided contribution to climate change and its associated impacts on the economy
Products and services to help customers/clients manage their exposure to climate change	Product development	Number of products sold or customers/clients engaged	Customer/client behaviour change and faster recovery time after weather events

Figure 3 provides an example for a messaging alert service provided by an insurer to its customers in advance of extreme weather events occurring, thus allowing them to take precautionary measures to safeguard their property. Thinking about impact measurement in this way can also be applied to other examples of insurance industry activity, whether products and services targeted at reducing risk in renewables or investment in green bonds. The industry would generally be able to track the inputs and outputs of such an initiative, i.e. the resources used during its development and implementation, and the activities conducted as a result. By taking a further step to monitor the outcomes and impacts of the initiatives, the industry can demonstrate the actual change that has occurred as a result of the activity conducted, and link this change to a positive impact on the agenda by the business.

Figure 3: Considering the outcomes and impacts of a weather alert messaging service



ClimateWise is facilitating a number of collaborative approaches on energy transition and resilience and the impact of these should also be considered over the coming year.

Overview of current performance

1

Principle 1: Lead in risk analysis

Key strengths/progress achieved

Members provide evidence of significant research efforts, undertaken individually and in collaboration with academic and research institutions, which cover a wide range of climate related subject matter, from tsunamis to wild fires and flooding to stranded assets. There is good practice in the sharing and wider dissemination of research. A number of reports published by members have been made publicly available and some proactively shared with key stakeholders including international and national policymakers, development agencies and development banks e.g. through working groups and external conferences. Examples have been disclosed showing members increasing their scope and focus of risk research, but these are limited.

Members illustrate a range of activity to support national and regional forecasting of future weather and catastrophe patterns and are identifying new areas of risk research to refine and improve catastrophe modelling. There is evidence of modelling outputs informing and influencing business practice including pricing decisions, the purchase of outwards reinsurance and risk-based capital assessments. Some members also identify areas of knowledge and data quality that need improving to reflect new risks and provide evidence of how these inform business strategy.

Recommended areas for development

We see a number of examples of good practice in both new and ongoing research in this year's member reporting, but evidence of its integration into core business strategy and activity remains an area for greater disclosure and action. For example, few members report how their research and knowledge outputs are informing and influencing their business practices and decisions and vice versa.

A particular area of research that could be enhanced by members is the understanding and mitigation of the costs and risks in insuring new technologies. The few examples provided covered autonomous vehicles, carbon capture and storage and renewable technologies, with the greatest focus being on the latter. More can be done to broaden and deepen thinking on products and services for insuring the technologies of tomorrow.

There was little demonstration of specific planned activity across the membership. Some members outline specific examples of publications or events planned for the next year but these were limited in number and detail. Evidence that forward plans are being made in a more strategic way should be indicated in a non-commercially sensitive way going forward, in particular for reinsurers and risk modellers, for whom risk analysis is of relatively high importance.

Principle 2: Inform public policy making

Key strengths/progress achieved

Members describe a range of activities undertaken to inform climate related public policy making, predominantly through participation in national and international organisation-led working groups, publications and events such as conferences and workshops. Additionally, senior leaders of member organisations continue to speak publicly on the impact climate change is having, and will continue to have, on the industry. Primarily, engagement covers adaptation and resilience, although there are also examples of engagement on mitigation areas such as carbon capture and storage. Progressive members also articulate how public engagement efforts are linked to core business priorities and, where applicable, how research efforts are used as a basis for public engagement on climate change. Members highlight a range of activity here, including efforts to explain the role of the insurance industry in climate change adaptation and mitigation, and in facilitating the development of the renewable energy market through prioritising key relationships with industry associations and NGOs. Members, particularly **risk modellers** and **reinsurers**, are using their modelling capability to inform focused engagement with policymakers.

Professional bodies and associations, as voices of the industry, play a key role in informing public policy making and engaging in public debate on the various roles of the industry in driving resilient, low carbon societies and economies. There are good examples of driving awareness including integration of climate change into exam syllabi and professional development courses, and championing not-for-profit schemes to support affordable flood insurance.

Brokers typically act through engagement with policymakers, particularly in supporting government action to enhance resilience of infrastructure and communities. By contributing to national and international initiatives such as the United Nations International Strategy for Disaster Reduction (UNISDR), brokers are helping to ensure that the development and implementation of policy is better informed on climate related risks.

Recommended areas for development

Going forward, members need to provide greater transparency on the areas of public policy most material to them and how they target engagement on these areas. For example, some members identify low carbon investment or flood risk as material issues, and are prioritising engagement activities accordingly. Some identify the climate change related products and services they are looking to develop and grow, e.g. renewable energy technology, and prioritise engagement efforts with industry associations relevant to those products.

Principle 3: Support climate awareness amongst our customers

Key strengths/progress achieved

All organisation types (bar the exempt professional bodies and associations) provide good examples of supporting customers on climate awareness. Insurers understandably perform well on informing customers of climate risk, providing support and information tools, encouraging customers to adapt to climate change and reduce their greenhouse gas emissions through information, insurance products and premiums where possible, and seeking to increase the proportion of sustainable claims. For example, the use of emails and microsites offering practical guidance to customers, text and radio alerts warning of extreme weather events, and motor insurance initiatives offering bikes as an alternative to rental cars have all been established and implemented by members. Insurers are identifying and capitalising on the value these can provide to the business, in particular reducing exposure to future risks and claims. However, there remains an opportunity to mainstream the provision of information to customers across all markets and client segments.

Brokers show good progress on informing customers of climate risk and providing support and tools so that they can assess their own levels of risk, as part of their service of matching customers to products/providers. They also perform well on assisting markets with low insurance penetration to understand and respond to climate change (sub-principle 3.4). The assistance relates mostly to weather-related insurance for developing market customers, but also includes micro-insurance.

Recommended areas for development

The largest potential area for improvement is assisting markets with low insurance penetration, through their products and services, to understand and respond to climate change. More consideration is needed on which markets have low insurance penetration – whether geographic locations (including countries), industry sectors or social groups – and how these may be supported. Once this has been further assessed against potential suitable products and services, more examples of action may emerge.

For **brokers** a key area for improvement is encouraging clients and corporate risk managers to adapt to climate change and reduce their greenhouse gas emissions through insurance products and services (sub-principle 3.2) e.g. buildings policies with 'green clauses' that allow for additional costs to be covered if the latest environmentally friendly materials and techniques are used in reinstating the property. Another area is to provide greater climate risk management advice to customers, particularly indirect or systemic climate risks such as in supply chains or overseas investments.

Due to the nature of their business, supporting climate awareness amongst customers is of particular importance to **loss adjusters**. There is good evidence of significant provision of weather forecasting services and surge and subsidence watch reports. There is opportunity for loss adjusters to further demonstrate innovative approaches to raising awareness and supporting customers on managing the climate risk challenge, and greater engagement with insurers to develop sustainable building repair specifications.

Principle 4: Incorporate climate change into our investment strategies

Key strengths/progress achieved

As government bonds and fixed income, rather than equities, make up the majority of investment portfolios for insurers and reinsurers, their opportunities to achieve positive climate impact through investment may be more limited than those of other investors. However, there are some potential opportunities such as increasing investment in low carbon assets, reducing exposure to high carbon ones and investing in infrastructure that has positive climate benefits such as flood defences.

Many members outsource investment management to specialist third parties. A large proportion of members provide investment teams or external managers with ‘responsible investment’ policies or equivalent. There were a number of good examples of members showing how such policies are implemented in practice, for example through new research and analysis across investment portfolios, the exercise of voting rights, publishing voting effectiveness or requiring external managers to provide updates on ESG issue management.

Members provide numerous examples of how they evaluate the implications of climate change for the financial performance of investments, including research on stranded assets, economic impacts of climate change, the factoring of environmental risks into bond prices, energy performance of property investments or the management of ESG issues more broadly. There is also increasing evidence of members starting to examine opportunities for innovation in investments, with a number describing their growing interest in green bonds as an investment product.

Recommended areas for development

The communication of investment principles and strategy on climate change remains an area of mixed performance across members. There are limited examples of communication on websites, dialogue with stakeholders, including managing agents. The ‘1-in-100’ initiative is a good example of driving change in this area, and one to watch going forward.

Members could develop performance on incorporating climate change into investment strategies by:

- taking further steps to systematically assess climate risk and opportunity in investments, including seeking areas of potential innovation that could reduce potential climate risks such as flood defence infrastructure bonds
- communicating and engaging externally on investment principles (an example would be defining ESG risk appetite in investment mandates)
- setting targets for, and measuring progress in, responsible investment activities (coverage, level of engagement etc.)

Principle 5: Reduce the environmental impact of our business

Key strengths/progress achieved

This principle, the least material for the member group (but applicable to all), saw many examples of good practice. Members demonstrate some implementation of formal and informal sustainable procurement policies and procedures, for example screening potential suppliers against environmental criteria including climate change. Evidence suggests most members seek and prioritise suppliers that have established environmental policies and management systems (and in some cases, third-party certification) and request evidence of these during supplier evaluation. Some members are extending their selection criteria and minimum standards to include their suppliers' own supply chain standards, including clauses regarding environmental goals in supplier contracts and working collaboratively with suppliers on environmental issues.

For their own operations, common areas of performance include reducing greenhouse gas emissions, water usage and waste, e.g. increasing renewable energy use, carbon offsetting, energy and water efficiency measures, and recycling initiatives. Members disclose GHG emissions, typically according to Defra guidelines (for UK members) or the Greenhouse Gas Protocol and, in a number of cases, breakdowns by Scopes 1, 2 and 3. Many also outline a number of targets, either absolute or intensity carbon reductions, though the ambition and duration varies.

Looking forward, members generally demonstrate planned activities by setting emission reduction targets and outlining proposed environmental impact reduction projects and initiatives, for example establishing energy efficiency measures, appointing energy champions or installing remote water metering.

Recommended areas for development

Going forward, members could advance performance on reducing the environmental impact of their businesses by:

- providing greater transparency on the process and results of implementing sustainable procurement policies, for example, evidence of suppliers being selected or deselected based on environmental criteria
- providing data regarding targets and uptake by employees of activities or initiatives to reduce company and individual footprints

Principle 6: Report and be accountable

Key strengths/progress achieved

Members are generally able to identify senior owners of climate risk and strategy, and describe committees to address climate change drawn from a variety of core functions beyond sustainability or corporate responsibility. Disclosing the highest level of direct responsibility for climate risk within the organisation is the main way members demonstrate efforts to incorporate all principles into business strategy and planning. It is encouraging to see that ownership for climate risk sits mainly with senior executives in the core business, such as chief science officers, chief operating officers and chief executive officers. Disclosure could be further improved by providing greater levels of detail on how climate change data is submitted to and reviewed at board level.

Most members publicly report their approach to, and activities that go into, managing climate risk. This is typically through company websites, sustainability reports and also annual reports and accounts. Although the standard of reporting and level of self-exclusion from sub-principles remains varied across members, the overall level of performance continues to advance.

Recommended areas for development

Members could improve reporting on climate risk and strategy by providing clearer evidence on how the organisation's position on climate change is periodically reviewed or refreshed by a board-level sponsor. An indication of the types of strategic information reviewed by the board, including any measurement of the impact of climate change activities, would provide further supporting evidence of strategic consideration is considered strategically by an organisation's senior leaders.

Beyond the board level, members could provide greater levels of disclosure on initiatives to engage employees on how climate change impacts the organisation's core business operations and strategy, and how they can integrate climate change considerations into their roles and responsibilities.

Stakeholder expectations

Climate risk extends across economies, geographies and industries, and co-operation is required to address the challenges it presents. It's therefore important to understand how evidence provided through the ClimateWise Review process is used by key stakeholders of climate risk.

This year we have provided summaries targeted at two key stakeholder groups, representatives of which have provided a view on how they can use the evidence provided. The first is the C40 Cities Climate Leadership Group, a network of the world's megacities committed to addressing climate change. The second is the financial rating agency Standard & Poor's.

Cities

Key principles of interest: 1, 2, 3.4, 4

Urban areas face rising risks from flooding and extreme weather events that are exacerbated by climate change as well as the trends of population growth and urbanisation. Resilience to extreme events, as well as longer term climate change impacts, needs to be factored into urban spending to protect communities and economies. It is estimated that over the next 10 years, $8 trillion will be spent on infrastructure in the four cities of Beijing, London, New York and Shanghai alone.[4]

Historically, efforts to build climate resilience in cities have been led by public policy and planning approaches from city mayors and local governments. But the extent of exposure to and management of disaster risks are highly dependent on the scale and nature of private investments. Insurers as both insurance providers and investors have a role to play to improve public-private collaboration, to identify shared goals and establish a coordinated approach to achieving a resilient city. Insurers are well placed to recognise the signals that an urban area requires improved resilience without which the costs of providing insurance cover may become prohibitive.

Cities and local governments around the world are not ignorant of the risks. Many have made political commitments through global campaigns such as those launched by ICLEI – Local Governments for Sustainability, United Cities for Local Governments (UCLG), the C40 Cities Climate Leadership Group, the Making Cities Resilient Campaign (led by UNISDR), and the new Compact of Mayors. At the 2014 UN Climate Summit in New York, the Resilient Cities Acceleration Initiative (RCAI) was another positive effort to improve city resilience with objectives such as working with 500 local governments to develop resilience action plans by 2020, mobilising greater finance into urban resilience investment and developing knowledge sharing platforms.

Evidence provided in support of the ClimateWise principles demonstrates some examples of emerging good practice in relation to city resilience. For example, in terms of risk analysis (Principle 1) Swiss Re provided technical input on economic impacts of projected changes in vulnerability to coastal storms to the *A Stronger, More Resilient New York* report for the city authority. Good evidence is provided for engagement with policymakers (Principle 2), though mostly in relation to national-level discussion and collaboration. In Norway, **If P&C** is, through its membership of the Norwegian Insurance Federation, participating in collaborative research with Norwegian cities to improve methods and preparedness to manage climate change-related risks. By providing claims statistics, they are helping to identify the most critical issues and risks related to climate change.

ClimateWise members have demonstrated several initiatives to engage with the resilient and low-carbon city agenda including the *Institute for Catastrophic Loss Reduction RSVP for Cities in Canada* (**Aviva, Lloyd's, RSA, Swiss Re**) and the *South African Adopt a Municipality Programme* (**Santam**). The ClimateWise collaboration workshop series *Building Climate Resilience in Cities*, which took place in North America, resulted in a report highlighting priorities for collaborative

[4] PwC analysis 'Cities of Opportunity'

action. ClimateWise members **Swiss Re** and **Aviva** were part of the advisory panel that provided guidance throughout the design, development and conduct of the workshop series. The initiative highlighted the fact that *the resilience of interdependent systems such as utility and transport infrastructure is critically important to the resilience of individual assets*. Systems thinking must be a consideration for investors when evaluating the potential impact of climate change on future value.

Based on stakeholder views and the findings of the 2014 Review, we recommend that members further:

- Consider insurance areas relevant to cities such as micro-generation and electric vehicles
- Consider physical climate risks and adaptation in their investment decisions, with particular regard to real estate
- Establish, together with city governments, post-disaster plans for the most vulnerable cities and work collaboratively with other insurers, relief agencies and rebuilding organisations.

C40 CITIES
CLIMATE LEADERSHIP GROUP

A comment from the C40 Cities Climate Leadership Group

The C40 Cities Climate Leadership Group (C40) is a network of the world's mega-cities committed to implementing climate-related actions locally that reduce global emissions and climate risks. C40's flagship research publication, Climate Action in Megacities 2.0 (CAM) shows that, 98% of C40 members consider climate change a serious risk to their city and have taken more than 1,000 actions to adapt to climate change to date. To guide these efforts, a further 78% of C40 cities have conducted local climate risk assessments.

Still, there is much more to be done. Combining the expertise held in cities with that of the insurance industry would drive even more effective solutions to their shared challenges in confronting climate risks. C40 is encouraged by the examples of public-private sector collaboration detailed in this report and looks forward to more research to identify the full range of opportunities for a collective response to climate change.

Rating agencies

Key principles of interest: 1, 3, 4

Climate risk requires new disclosure and understanding between the insurance industry and rating agencies. For example, rating agencies may have an interest in understanding how the industry considers climate risk in operational risk management and underwriting, investment decision making, collaboration with other sectors, educating buyers, and product development. The ClimateWise reporting and review process can be a useful source of information for this purpose.

Risk analysis (Principle 1) and risk management maybe key areas of interest for rating agencies, specifically the ways the industry considers climate change and extreme weather events in their approaches to risk selection, exposure management and analysis of emerging risks. The quality of approaches may also be an indicator for overall enterprise risk management. Although the potential impact of climate change is hard to calculate, rating agencies may have greater confidence in organisations that demonstrate understanding of the correlation and causality of different climate risks and build consideration of climate change driven extreme weather events into modelling. In turn, consideration of exposure should be linked to planning for financial income and expenditure and capital adequacy.

Product development needs to evolve in step with the changing needs of customers (Principle 3) in insuring against climate related extreme weather events. Organisations that lead on product innovation, identifying under-penetrated markets and raising awareness among customers of climate insurance options are likely to see a positive impact on the bottom line, another area of interest to rating agencies.

Extreme weather events may present a double exposure to insurance companies through increased numbers of claims and reduced value of investments (Principle 4). These exposures need to be identified and mitigated. However, this is not currently seen in member reporting. Rating agencies may wish to understand how an organisation's investment policies cover climate risk tolerance levels and appraisal of climate risks of investment options as well as robust asset-liability management to mitigate double exposure.

Meanwhile, the insurance industry is interested in knowing how rating agencies consider climate risk management through their rating and decision making processes, both for itself and its potential options for investments. To effectively appraise investment options the industry needs continued accurate ratings (for bonds, equities etc.) that reflect the latest thinking and data on climate risks.

Based on stakeholder views and the findings of the 2014 Review we recommend that members further:

- Continue to integrate climate change into risk management.
- Raise further awareness amongst clients on the business impacts of climate change and develop products and services to help clients manage these risks.
- Work with others, particularly regulators, ratings agencies and investor groups, to improve climate risk management and disclosure in their own investment books and companies they invest in.
- Continue to advance the depth, quality and reliability of disclosure on managing climate risk.

STANDARD & POOR'S RATINGS SERVICES
McGRAW HILL FINANCIAL

A comment from Standard & Poor's

While our insurance ratings methodology captures climate risk that exists today, it does not explicitly anticipate future climate change. However as an emerging risk, insurers' management and understanding of the potential risks informs our analysis in a number of ways. There continues to be much uncertainty in the scientific and insurance communities on the extent of the impact of climate change on extreme weather events, and the resultant impact on the insurance industry. Is climate change a threat today or one for the future? While the jury may be out on the timing of the impact on the industry, we believe it is unwise for insurers to disregard the potential threat today. Thus, while we do extensive analysis on current exposure to extreme events, we would also take a favorable view of an insurer's financial risk when they consider how climate change, despite its uncertainties, may affect extreme events in capital modelling, risk selection and exposure management. Our assessment of business risk factors is a view of the diversification of an insurer's book of business and the inherent risk of the markets in which it operates, where we include an allowance for the exposure to and possible severity of extreme weather events. For insurers that can leverage their underwriting expertise to develop products that provide protection against climate risk, there is possibility that this could enhance their brand, and potentially improve operating performance.

Compliance with ClimateWise Principle 1 – 'Lead in Risk Analysis' can help to inform our rating analysis with regards to competitive position, capital adequacy, earnings and enterprise risk management. Insurers can bolster their brands as thought leaders by supporting and undertaking research that educates buyers of insurance on how to protect themselves from the risk of climate change and extreme weather. This research could also lead to new products or services that could improve their diversification, risk selection and, potentially, their earnings stability. The improvement in data quality that could inform pricing levels, risk exposure and reserves could also lead to increased stability for an insurer's balance sheet, which we would view favorably. Active monitoring of emerging risks, such as climate change, is also an important consideration in our assessment of enterprise risk management.

We would welcome improved disclosure and transparency in insurers' exposure to extreme weather, as it would allow us to enhance our benchmarking of the industry's exposure, and identify outliers. We also believe that the industry has a long-term and important role to play in developing awareness and acceptance of insurance-backed solutions for states' and corporations' exposure to climate risk. Continued research and discussions with other industries on their exposure can help corporations and governments explain to investors the climate related risks they face and how they are managing them.

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UNIVERSITY OF CAMBRIDGE
INSTITUTE FOR
SUSTAINABILITY LEADERSHIP

Head Office
1 Trumpington Street,
Cambridge CB2 1QA, UK
T: +44 (0)1223 768850
E: info@cisl.cam.ac.uk

Brussels
The Pericles Building
Rue de la Scinece 23
B-1040 Brussels, Belgium
T: + 32 (0)2 894 9320
E: info.eu@cisl.cam.ac.uk.

South Africa
PO Box 313
Cape Town 8000
T: +27 (0)21 469 4765
E: info.sa@cisl.cam.ac.uk

www.cisl.cam.ac.uk

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