LLOYD'S

ClimateWise Annual Reporting 2016-17

Our progress against the ClimateWise principles

Disclaimer

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ClimateWise reporting

How Lloyd's works

Lloyd's is a specialist insurance and reinsurance market. More than 50 insurance companies, over 200 registered Lloyd's brokers and a global network of over 4,000 local coverholders operate in and bring business to the Lloyd's market. Much of the capital available at Lloyd's is provided on a subscription basis – where Lloyd's underwriters join together as syndicates and where syndicates join together to underwrite risks and programmes.

Behind the Lloyd's market is the Corporation of Lloyd's, that is not itself an insurer but an independent organisation and regulator that acts to protect and maintain the market's reputation and provides services and original research, reports and analysis to the industry's knowledge base.

How the Lloyd's market works

These two entities receive an A+ rating from Standard & Poor's, AA- from Fitch and A from A.M. Best. All Lloyd's syndicates benefit from Lloyd's central resources, including the Lloyd's brand, its network of global licences and the Central Fund. The Central Fund is available at the discretion of the Council of Lloyd's to meet any valid claim that cannot be met by the resources of any member. As all Lloyd's policies are ultimately backed by this common security, a single market rating can be applied to all syndicates post-1992.

ClimateWise reporting

For the purpose of this report, case studies evidencing activities carried out under the ClimateWise principles have been split into two groups to reflect the structure of Lloyd's:

- The Corporation of Lloyd's / [Case study title]

  The Corporation oversees and supports the Lloyd's market, ensuring it operates efficiently and retains its reputation as the market of choice for specialist insurance and reinsurance risk.

- The Lloyd's market / [market member name] / [Case study title]

  The majority of business written at Lloyd's is placed through brokers who facilitate the risk-transfer process between clients (policyholders) and underwriters.

The Corporation of Lloyd's

As a founder member of ClimateWise, the directives of the principles have been integrated into a range of Corporation of Lloyd's activities. Climate change is an area where the Corporation of Lloyd's believes and publically states an aim in the 2016 Annual report (*see p30, Annual report 2016*[a]) that:

"Lloyd's will use its experience and expertise to help communities around the world build resilience against disasters, including the effects of climate change and extreme weather events."

– John Parry, Chief Financial Officer

The Corporation of Lloyd's recognises the potential effects of climate change and the direct impact on the business community and are in regular dialogue with insurers, businesses and policy makers to address the challenges of climate change, both for our industry and for society.

The Corporation of Lloyd's commitment to areas described by the ClimateWise principles is supported by Vision 2025, the aim of which is to make Lloyd's the global centre for specialist insurance.

Vision 2025

Vision 2025 was launched in May 2012. It sets out a strategy designed to enable Lloyd's to face future challenges head on while grasping the opportunities of a fast-changing world.

The stated aim of Vision 2025 is for Lloyd's to be the global centre for specialist insurance and reinsurance. The plan for the delivery of this aim naturally shifts with changing market and business circumstances and its successful delivery requires a partnership between the Corporation of Lloyd's, and managing agents and brokers.

Vision 2025 is divided into eight strategic priorities. Each priority has a delivery plan comprising milestones and annual key performance indicators (KPIs) and activities. These form a hierarchy of metrics ranging from the vision to annual KPIs for each strategic priority. The most material milestones and annual KPIs are listed for each strategic priority in the 2016 Annual report, with specific aims and objectives outlined in the Global Corporate Social Responsibility strategic priority (*see p30, Lloyd's Strategy 2017-2019*).

The Corporation of Lloyd's strategy and associated performance metrics framework are reviewed annually to ensure they remain appropriate. The remuneration of Corporation Directors is influenced by progress against these milestones and performance indicators. Corporation employees are also assessed against personal objectives designed to meet the performance indicators relevant to their role.

The Lloyd's market

There are nine managing agents that operate within the Lloyd's market that have signed up to the ClimateWise principles.

[a] Published in 2017.

Case studies evidencing their compliance with the principles and actions against them are included to provide an overarching submission from Lloyd's.

Each case study is written by the named market member, and reflects the group views, policies and practices:

ClimateWise members in the market

ARGO GROUP — Get there together | beazley | CHUBB

HISCOX * | MS Amlin | Navigators

QBE | RenaissanceRe SYNDICATE 1458 | TOKIO MARINE KILN

XL CATLIN *

** Also reports independently as an individual member.*

1 Lead in risk analysis

1.1 Support and undertake research on climate change to inform our business strategies and help to protect our customers' and other stakeholders' interests. Where appropriate share this research with scientists, society, business, governments and NGOs in order to advance a common interest.

The Corporation of Lloyd's / Future cities

In the 2015-16 reporting, the Corporation of Lloyd's described ongoing efforts to provide a comprehensive analysis of natural hazards and extreme events, illustrating how the Corporation of Lloyd's has been working on using research and data to inform understanding of risks and capital and reserve requirements. A study working towards providing information was published and launched in September 2015 – the Lloyd's City Risk Index – and presented the first ever analysis of economic output at risk (GDP at risk) in 301 major cities from 18 manmade and natural threats over a ten-year period.

Building on this work, the Corporation of Lloyd's collaborated with Arup to explore the topic of resilience in the city context, and launched a new framework to help city officials and insurers improve infrastructure resilience. The report, Future Cities: Building Infrastructure Resilience, found that while risk management remains a priority for cities, it is not enough on its own, or on an asset by asset basis.

Increasingly, city officials, investors and insurers will need to build resilience within and between infrastructure systems as a complementary approach to address infrastructure risk and uncertainty. The study set out three new pathways designed to help guide the planning, design, construction and operation of core city infrastructure to improve their ability to cope with and recover from disasters:

- Prevent failure: make city infrastructure more resilient to shocks so that even if parts of it fail temporarily, the overall system still works;
- Expedite recovery: examine ways in which infrastructure can be restarted as quickly as possible post-disaster to save lives and prevent further failures; and
- Transform performance: replace damaged infrastructure with a more resilient version as part of the rebuilding process.

The Corporation of Lloyd's also set out nine areas that the insurance sector could also take collective action to work with stakeholders and build greater city resilience, including practical recommendations for action:

1. Improving data collection
2. Using this new data to quantify the risk and help inform stakeholder decision-making
3. Establishing metrics to enable the development of indices and models to assess resilience
4. Finding ways to incentivise investment by making resilience assessments available
5. Incentivising policyholders to take risk mitigation measures through risk-based pricing

6. Developing collaborative models and tools that provide a transparent, comprehensive and accessible approach to analysing and pricing risk
7. Encouraging the creation of indices that can be used by insurers to incorporate levels of resilience into the underwriting process
8. Creating shared understanding of how the components and stakeholders of cities interact and what the key areas and concerns are for each stakeholder
9. Considering resilience services which draw on facilities management, disaster recovery, build and operate contracts and insurance.

Impact

The study was launched at an event in the Old Library theatre in the Lloyd's building that described the report process and findings. 110 people registered to attend the event and electronic copies of the reports were circulated to a marketing list of 8,000+ names as well as being actively shared on Lloyd's social media channels to help educate both customers and the wider insurance sector.

A resource pack was also developed for Corporation of Lloyd's country managers[b] to use in their local regions to communicate the work.

This is an example of how research relevant to the market is integrated into the Corporation of Lloyd's activities and forward planning, and the development of global climate research by the Corporation of Lloyd's. It also represents work towards the Innovation strategy KPI for 2017 to deliver at least eight thought leadership reports, focusing on 'emerging risks, best practices in classes of business and pre-competitive risk quantification models' (*see p19 'Lloyd's Strategy 2017-2019'*).

The Corporation of Lloyd's believe that sharing the research we generate strengthens the industry. The Corporation of Lloyd's continues to work towards improving the analysis and quantification of less or non-modelled regions and risks, including climate and environmental issues, examples of which are outlined in the report.

The project is also used as an example in emerging risks and innovation presentations by the Innovation team to describe work Lloyd's is undertaking in this space. An overview of the study is scheduled as an agenda item on the July meeting of the London Climate Change Partnership, which is comprised of London stakeholders focussed on climate change to raise awareness of the study.

Next steps

The Corporation of Lloyd's and Arup hope this study adds to understanding of city resilience, stimulates new ideas and raises new research questions, and that it can be used to guide all those stakeholders with an interest in ensuring that tomorrow's cities are built on resilient foundations. Continued innovation, reflection and collaboration across sectors and industries are critical to address constraints in support of more resilient, inclusive and prosperous cities.

Corporation of Lloyd's country managers have been given access to a resource pack to allow them to deliver standalone presentations and to incorporate material into their own slide decks. Four presentations had been delivered to external audiences at the time of reporting.

Evidence also applies to principle(s): 1.1, 1.3, 1.4, 3.1, 3.4, 4.1, 4.2, 4.3

The Corporation of Lloyd's / Stochastic modelling of liability accumulation risk

Building on reporting from 2015-16, the Corporation of Lloyd's reported against a multi-year liability study. Liability exposure management has historically been a challenge for insurers. While earthquakes and storms can be understood

[b] Country managers are the in-country Corporation of Lloyd's representatives whose aim is to support the continued expansion of the Lloyd's insurance and reinsurance market.

as manifestations of physical laws of the earth or its atmosphere, liability scenarios can arise from complex interactions among the socio-economic, environmental, health and legal environments. These can be harder to capture in terms of mathematical equations. Over the last three years, the Corporation of Lloyd's has been investigating different methods that aim to reduce uncertainty in this area, and this year's case study builds on that work.

The methodology is the culmination of a three-year project between the Corporation of Lloyd's and Arium to improve insurers' understanding of liability risk exposure. The basic ideas underlying the Stochastic modelling of liability accumulation risk paper released in March 2017 flow from the report Emerging Liability Risks - Designing liability scenarios written jointly by Arium and the Corporation of Lloyd's in 2015. Its message was that a suitable framework for modelling liability risks is given by the notion of supply chains, which may be seen as the storm tracks, and by the faultlines of liability risks – their footprint.

The approach categorises casualty events based on a company's business activities – its products and services, operations and infrastructure – and maps the economic relationships that reflect the journey of products and services through the economy using key 'shapes'. These shapes cut across different liability lines of businesses, different industries, different types of loss and different jurisdictions. Losses and parameters were either suggested directly by experts or suggested by historical data, using expert input to help consider how future losses may differ from the past.

Different infrastructure loss scenarios may have different loss sizes but the economic relationships in the supply chains and the key parameters driving the loss will be similar. The report contains examples of environmental liability scenarios and expert viewpoints on risk trends, which is an area of interest highlighted by the Bank of England in recent communications. This approach allows insurers to model liability risk in more detail than they have previously, in a way similar to how they model catastrophe exposure, i.e. using annual average losses, exceedance probability curves and heat maps that allow a visual identification of risk clusters.

The Corporation of Lloyd's supported the project with the aim to help create a more robust insurance industry, strengthening its ability to pay claims to its customers.

"This is a tremendously exciting development. It is in everybody's interest to classify liability risks as accurately as possible, and this methodology represents a real step forward for the industry."

- Jon Hancock, Performance Management Director

Impact

The study was launched at an event in the Old Library theatre in the Lloyd's building that described the process and findings. 183 people registered to attend and the pdf of the report was circulated to a marketing list of 8,000+ names as well as being actively shared on Lloyd's social media channels to help educate both customers and the wider insurance sector.

This is an example of how research relevant to the market is integrated into the Corporation of Lloyd's activities and forward planning, and the development of global climate research by the Corporation of Lloyd's. It also represents work towards the Innovation strategy KPI for 2017 to deliver at least eight thought leadership reports, focusing on 'emerging risks, best practices in classes of business and pre-competitive risk quantification models' (*see p19 in 'Lloyd's Strategy 2017-2019'*).

The project is also used as an example in emerging risks and innovation presentations by the Innovation team to describe work Lloyd's is undertaking in this space.

Next steps

The model described in the report is an innovative way of representing casualty accumulations on a probabilistic basis and represents a big step forward in the understanding of liability risk exposure. Going forward, it is vital that risks are coded in a standard way (such as the six digit NAICS codes) to enable the model to reach its full potential. The Corporation of Lloyd's lobbied this point in marketing materials for the release, and raises the point in related activities such as presentations or workshops.

Further research would be useful in the following areas:

- Extending the shapes to capture additional aspects of risk.
- The frequency with which the catalogue of shapes should be refined, adapted or left unchanged.
- Study of the sets of parameters best suited to model a particular shape, as well as refining the probabilities each is associated with.
- Analysis of liability by geographic spread (subject to the availability of further information on US casualty events).

To read the full report, visit the project page: Stochastic modelling of liability accumulation risk.

Evidence also applies to principle(s): 1.3, 1.4

Source: The Corporation of Lloyd's

The Lloyd's market / ArgoGlobal / Climate change research

ArgoGlobal have considered the effect of climate change on historical US hurricane landfall rates by region and category. Studies have examined trends in the historical record, climate model runs, and physical dynamics to conclude that it is likely that total Atlantic basin hurricane event frequency decreases with increasing global temperature but that frequency of the strongest events increases. Hence it is likely that Cat 1-2 hurricanes are overrepresented in the historical landfall record, and Cat 3-5 hurricanes are underrepresented. However, as climate change is also tied up with climate variability and model calibration frequency adjustments ArgoGlobal can't isolate the effect of climate change explicitly to quantify the effect on the losses.

Argo Group staff regularly participate in conferences and debates on climate related subjects, both as speakers and attendees. Most recent at an extreme events & climate risk forum entitled 'How Will Risk Modelling Shape the Future of Risk Transfer?' where employees were speaking on matters related to next generation risk models.

Evidence also applies to principle(s): 1.2, 1.3, 5.4

Source: ArgoGlobal: Syndicates 1200 and 1910

The Lloyd's market / Beazley / Supporting research

Beazley continue to participate in the Lloyd's Disaster Relief Financing Working Group and are part of the consortium that announced the provision of USD400mn of new insurance capacity to help developing economies tackle underinsurance and increase their resilience to the economic impact of natural catastrophes.

Beazley continue to talk with external agencies about potential research projects to supplement participation in the working group, to model natural disaster and/or weather-related risks in countries where a lack of data contributed to the lack of insurance provision.

Forward planning

Beazley hope to identify key areas of interest and potential partner organisations over the coming year.

Evidence also applies to principle(s): 1.2, 1.3, 1.4, 2.1, 3.4

Source: Beazley

The Lloyd's market / Chubb / Chubb Risk Management Process

As the world's largest publicly traded property and casualty insurance company, Chubb has a responsibility not only to provide solutions that help clients manage environmental and climate change risks, but also to control our own ecological impact and contribute to environmental causes. Chubb also believe that the well-being of the society depends on a healthy environment and that a proper ethic strives for a sustainable balance between development and preservation.

Chubb's approach to risk management is to identify all known and emerging risks that could have a significant impact on overall capital levels and financial results. Regarding the potential effects of catastrophe losses, Chubb closely monitor catastrophe risk accumulations around the world.

Because the potential physical effects of climate change present a significant risk to the company, they have been integrated into Chubb's overall risk management process.

Chubb invests to continually upgrade and refine its risk management tools for catastrophes such as floods, hurricanes and wildfires. Special emphasis is given to areas where Chubb has significant exposures and the inherent risk from extreme weather events – such as tropical cyclone and other windstorm – is deemed to be high, such as the coastal United States, Southeast Asia and U.K./Europe

Risk Management Process:

As a global insurance company, assessing risk is a core competency for Chubb. With operations in 54 countries, Chubb's business and operating models are exposed to the full impact of global climate change. The potential physical effects of climate change present a significant risk to the company, and therefore, have been integrated into Chubb's overall risk management process.

Catastrophe Modelling

Chubb is a leading proponent and user of catastrophe models to quantify natural catastrophe risk for product pricing, risk management, capital allocation and to simulate and estimate hurricane losses. Chubb uses models to aggregate and closely monitor natural catastrophe exposures across its global portfolio and to ensure that its capital base is sufficiently strong to meet the expectations of regulators, rating agencies and policyholders and to provide shareholders with an appropriate risk-adjusted return.

Chubb's risk management modelling practices review the potential change in catastrophic event frequency and severity due to climate change and augment their future view of risk where appropriate. Chubb's underwriters use state-of-the-art, proprietary catastrophe modelling tools as part of their underwriting process, and strictly regulate the concentration of those risks Chubb are willing to underwrite.

Chubb invests continually to upgrade and refine its risk management tools for catastrophes such as floods and hurricanes. A priority initiative in 2015, for example, involved developing an enhanced flood risk management tool to give underwriters and risk managers improved modelling, underwriting and portfolio management capabilities. Since 2016 a similar tool has been in development for the peril of wildfires.

Several major natural catastrophes in recent years, such as the tsunami following the Japanese earthquake and the floods in Australia and Thailand, were non-modelled events or involved difficult-to-model coverage (e.g., business interruption). These types of losses had not typically been considered in the risk and pricing model framework used by the insurance industry to project natural catastrophe losses and this has led to an overall rise in the industry's perception of risk.

With lessons learned from recent events – new assessments of building performance and improved understanding of how a convergence of conditions can increase losses in a severe catastrophe – Chubb incorporate this latest knowledge in our modelled loss estimates.

Pricing

Chubb also incorporates risk mitigation services through its risk management and site surveys, specification of terms and conditions in policies and development of sound underwriting guidelines into the underwriting of catastrophe-exposed products (e.g., property, energy, marine or crop coverage). Chubb's modelling and underwriting approach allows for risk – and hence price – differentiation across our client base.

Clients that mitigate risk – through retrofitting buildings to comply with updated building codes, installation of hurricane shutters and relocating exposures away from coastlines and flood plains – will have lower insurance costs than those that do not. Chubb also makes use of terms and conditions such as sub-limits, coverage restrictions and deductibles to ensure appropriate risk selection and potentially reward certain policyholder behaviour.

The company is also actively engaged with regulators to ensure that pricing is actuarially sound and can be adapted to meet new emerging climate change risks and the capital implications of these risks. For Chubb to continue to offer coverage under climate change conditions, pricing must always be set at sound actuarial rates that cover loss costs, expenses and risk margins on exposed capital. Thus, pricing must be flexible over time and by geography.

Unfortunately, many regulatory regimes impose the functional equivalent of price controls, which are not built to respond to developments in risk assessment and signal the wrong incentives to consumers who are encouraged to increase exposures.

Reinsurance

Chubb mitigate our exposure to climate change risk by actively hedging catastrophe risk in both the reinsurance and capital markets. In addition, our investment portfolio, which backs the loss reserves and claims-paying ability of our insurance businesses, is highly diversified by risk, industry, location and type and duration of security.

Successful risk transfer from policyholders to insurance and capital markets also requires industry standards around exposure data. Chubb are committed to helping the industry improve standards that will ultimately help increase risk transfer capacity and provide additional incentive for risk mitigation behaviour by policyholders.

Supporting Solutions

Chubb continues to participate in and support scientific-based research to enhance the loss modelling response to climate change and is participating in leading environmental information forums.

Evidence also applies to principle(s): 1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 6.1

Source: Chubb

The Lloyd’s market / MS Amlin / Partnership with Oxford University

Since 2014, MS Amlin has been pushing the boundaries of thought leadership, to increase the industry’s conversations around the systemic risk of modelling (SRoM).

Models seek to combine the latest technical and scientific thinking, with historical and stochastic loss detail, to generate a ‘number’ indicative of the inherent risk profile. MS Amlin has always recognised the value of models to help guide risk management and decision making, but distinguishes itself by questioning the validity of modelled output and reviewing the threat posed by the growing use of these models.

MS Amlin seeks to further the industry’s understanding of the systemic risks of these models, their technological development and greater usage, and in pursuance of this continues its collaboration with Oxford University.

MS Amlin and the Future of Humanity Institute at Oxford University’s Oxford Martin School (OMS), launched a White Paper in November 2015 entitled ‘Systemic Risk of Modelling in Insurance: Did your model tell you all models are wrong?’ which was produced and co-authored by the SRoM Working Party, a collaboration forum composed of voluntary contributions from 30 academic researchers and industry practitioners, including (re)insurers, catastrophe model vendors, brokers, regulators and consultants.

The White Paper demonstrated the momentum gathering behind the concept of systemic risk in modelling and the scale of the Working Party represented a growing industry voice seeking guidance on better regulatory, organisational and behavioural management practices in (re)insurance.

The focus of the White Paper was on finding a practical solution for the industry to SRoM, drawing on the findings to date from the MS Amlin-OMS collaborative research, to introduce a Risk Scorecard framework. The scorecard is designed to help firms and regulators measure the amount of systemic risk introduced from modelling, with the intention, in the long-term, of it becoming part of a toolkit to better monitor and manage risk.

Systemic risk is increasingly relevant due to the growing level of globalisation, interconnectedness, and speed of business transactions in the world. MS Amlin and the OMS have been working together to research and promote a better understanding of SRoM across the (re)insurance industry, to the benefit of clients and stakeholders.

Joint work between MS Amlin and Oxford University's Future of Humanity Institute on understanding the systemic risk of modelling and model usage continued throughout 2016/2017.

A further three White Papers listed below have been published that examine what policy data can tell us about how underwriters use models, the part that cognitive bias plays in underwriter decision making, and a paper that explores an agent-based modelling approach to simulate the insurance industry as a method to identify factors with the potential to introduce systemic risk into the marketplace. The papers are publically available online and can be downloaded from the following links:

- The underwriter and the models- solo dances or pas-de-deux?
- Pilot study of underwriter cognitive bias
- Meta-modelling of systemic risk from models

Forward planning

The theme of using agent-based modelling forms the basis of the second phase of research, this time in collaboration with Oxford University's Institute of New Economic Thinking [INET]. The two-year extension (2016-2018) aims to build an industry agent-based model to examine the impacts of various macro-factors such as market cycle conditions, and the extent to which the regime of setting of regulatory capital creates pro-cyclical behaviours.

Evidence also applies to principle(s): 1.3, 6.1

Source: MS Amlin

The Lloyd's market / Navigators Underwriting Agency Limited / Research and data analysis

Navigators continues to enhance its Natural Catastrophe management and refine its catastrophe modelling capabilities in USA and elsewhere around the world in countries prone to weather-related exposures and flooding.

In 2016 Navigators upgraded their aggregation platform from EXACT v2.6 to EXACT v3.7. This significant enhancement has enabled the Underwriters to visualize and validate their exposure at a finer level of detail than what was previously possible, leading to an improvement in data quality for the downstream CAT modelling analysis.

Navigators have recently renewed their worldwide license of AIR's CAT modelling software, Touchstone, and through AIR's Geospatial software the CAT team and the Underwriters continue to have a visual appreciation of the risks across the globe, enabling them to review clash and key areas of risk accumulation.

Each year our Group Underwriters and other internal stakeholders attend our own NatCat Summit held in London and a large number also participate in various external conferences on related topics.

Catastrophe exposure (and aggregate loss potential) remains a key component of our capital modelling and as a Marine and Energy specialist insurer this helps steer our business strategy at Group and Business Division level, including the Lloyd's Syndicate.

Evidence also applies to principle(s): 1.1, 1.3, 1.4, 2.2

Source: Navigators Underwriting Agency Limited (Navigators)/NavTech

The Lloyd's market / QBE European Operations / Understanding risk to develop solutions

QBE's Risk Management Services have been expanded to assist our clients to better manage their risks, including risks from operational incidents, events and losses.

Through the formation of a new Global Risk Solutions Practice in April 2016 (which follows on from the Risk Solutions team in QBE European Operations), QBE has brought together a team of more than 75 risk engineers, risk management consultants and scientists across the globe into a single working community. The objective is to improve knowledge exchange and provide expertise to underwriters and insureds.

Global Risk Solutions provides a variety of services to customers including risk profiling and evaluation, accident investigation, business continuity, risk assessment, supply chain analysis, environmental management, client awareness forums and training materials. In addition to the core internal team, Global Risk Solutions manages over 35 external suppliers (incorporating 200+ consultants) to help service a global client network and divisional customers.

The next step is for the Global Risk Solutions team to roll out elements of the market-leading risk solutions model developed in European Operations to QBE offices around the world. This offering includes a senior team of risk practitioners with over 15 years' experience and ranging from chemical engineers to construction, logistics, mining, retail and professional services.

Central to the European Operations approach is QRisk, a risk database launched in 2013 to manage all information from surveys and risk assessments. The QRisk database has now captured more than 7,500 client engagement activities, providing a strong foundation for increased use of data analytics to drive a better understanding of clients and industry sectors in 2017 and beyond. The intelligence from this data source is providing underwriters with a better informed insight to the risks they insure, with the potential to protect the environment through identifying opportunities for risk reduction.

QBE's Global Emerging Risk Group, supported by the divisional emerging risk groups including the European Operations Emerging Risk Group, continue to examine the impact of emerging risks, including climate and technology change.

It should also be noted that QBE continue to develop underwriting products and services to sustainable industries as part of their commitment to responsible underwriting. In addition to increasing involvement in the insurance of onshore wind and solar farms, during 2016 European Operations became an underwriter to a Dutch company offering clean and affordable solar power to a market of 1.3 billion potential customers who live off the electricity grid.

The QBE North America division is involved in agricultural production. The Emerging Markets division is actively seeking to expand its activities providing insurance for environmentally friendly power generation.

Evidence also applies to principle(s): 1.3, 1.4, 3.1

Source: QBE European Operations

The Lloyd's market / Tokio Marine Kiln / Disaster modelling and climate change

Tokio Marine Kiln is a core member of Lloyd's Oasis Loss Modelling Framework, a not-for-profit company backed by Lloyd's Corporation and a community of (re) insurers and brokers in the UK, Bermuda, Zurich and the US. A number of enterprises from around the world have also joined as associate members, including the UK Met Office, University College London, Karen Clark & Co, JBA Risk Management and Perils AG.

The Oasis Loss Modelling Framework provides members with an alternative source of catastrophe risk models to the small number of proprietary software vendors which exist to date. The Oasis project deliberately concentrates on perils and geographies that are not so well covered by other proprietary models. TMK is represented at the Oasis Committee and has contributed significant resources (dataset, modelling capability, man-hours, financial) to-date, particularly in the implementation of the ARA US Windstorm catastrophe model through Oasis.

In addition, TMK is represented at the Lloyd's Exposure Management Committee. Through this Committee, our views, experiences and internal research materials on climate related risks such as El Nino, La Nina, Polar Vortex, are shared with the other Market participants. TMK also supports Lloyd's on relevant publication in relation to climate change, where possible.

Evidence also applies to principle(s): 1.2, 1.3, 1.4, 2.1, 2.2

Source: *Tokio Marine Kiln*

1.2 Support national and regional forecasting of future weather and catastrophe patterns affected by changes in the earth's climate.

The Corporation of Lloyd's / The Corporation of Lloyd's and Met Office continue a research partnership to explore global extreme weather risks

Building on the Corporation of Lloyd's long-running partnership with the UK Met Office work featured in the Corporation of Lloyd's 2011, 2014 and 2015 reporting cycles, the Corporation of Lloyd's commissioned a project directed at exploring the existence and nature of connections between global extreme weather risks.

The work builds on Corporation of Lloyd's support of scientific research, forecasting, and modelling, and sits within the Corporation of Lloyd's overall commitment to Solvency II, to challenge the assumptions of the independence or interdependence of risks that may require greater scientific justification.

The report, The Risk of Global Weather Teleconnections, analysed the links between extreme weather events occurring in separate regions of the world that can take place over a range of timescales from days to years (known as teleconnections).

It is an insurer's responsibility to assess that levels of capital are adequate for all material risks and demonstrate that to the regulators. Many use internal models to show this is the case. For assessment of teleconnections, these internal models are based predominantly on the assumption that extreme weather events in different regions occur independently of each other.

The Corporation of Lloyd's worked with the UK Met Office to develop this innovative study, which for the first time analyses the potential links between weather events globally; existing methodologies cover single regions only. This allows reinsurers to use the report to model scenarios across their global portfolios.

The aim of this project was to further the Corporation of Lloyd's scientific knowledge in this area whilst supporting the work carried out by the UK Met Office. It also included a component to educate the Lloyd's market and the wider world as to the potential connections between extreme events.

In a ground-breaking move, the Corporation of Lloyd's and the UK Met Office made the methodology publicly available to allow debate and review.

Key findings are as follows:

- UK Met Office research found that the majority of perils are not significantly correlated, but identified nine noteworthy peril-to-peril teleconnections, most of which are negatively correlated;
- The Corporation of Lloyds' modelling finds that these correlations were not substantial enough to warrant changes to the amount of capital it holds to cover extreme weather claims;
- Even when there is some correlation between weather patterns, it does not necessarily follow that there will be large insurance losses. Extreme weather events may still occur simultaneously even if there is no link between them;
- An assumption of independence for capital-holding purposes is therefore appropriate for the key risks the Lloyd's market currently insures; and
- The methodology released in the report enables scenario modelling across global portfolios for appropriate region-perils.

To complement the main approach in this paper the Corporation of Lloyd's also worked with Dr Edward Wheatcroft, an independent statistics consultant based at the Centre for Analysis of Time Series, London School of Economics. Dr Wheatcroft's data-driven statistical study considered the assumption of independence from a number of different angles.

Impact

The study was launched at an event in the Old Library theatre in the Lloyd's building that described the process and findings. 212 people registered to attend and the pdf of the report was circulated to a marketing list of 8,000+ names as well as being actively shared on Lloyd's social media channels to help educate both customers and the wider insurance sector.

A resource pack was also developed for Corporation of Lloyd's country managers to use in their local regions to communicate the work.

This is an example of how research relevant to the market is integrated into the Corporation of Lloyd's activities and forward planning, and the development of global climate research by the Corporation of Lloyd's. It also represents work towards the Innovation strategy KPI for 2017 to deliver at least eight thought leadership reports, focusing on 'emerging risks, best practices in classes of business and pre-competitive risk quantification models' (*see p19 in 'Lloyd's Strategy 2017-2019'*).

The project is also used as an example in emerging risks and innovation presentations by the Innovation team to describe work Lloyd's is undertaking in this space.

Evidence also applies to principle(s): 1.1, 1.3, 1.4, 2.1, 2.2, 3.1

Source: The Corporation of Lloyd's

The Lloyd's market / Hiscox / Informing and influencing business practice - pricing

The composite result of all Hiscox research into climate related risks, as expressed in the Hiscox View of Risk, sends a direct signal to our underwriters about Hiscox insurance pricing. As the adaptations agreed by the Natural Catastrophe Exposure Management Group are used to update the actual models that the underwriters use, so pricing guidance changes on their screens in order to inform their work, and forms an important factor in their decisions on what insurance they can offer, and at what price.

One example of how research has been used is how the output of our Catastrophe Modelling Team, working in partnership with our selected risk Modelling companies, has informed Hiscox's pricing calculations and enabled us to provide tailored property insurance based on the risks identified on an individual location basis, helping to provide flood cover for many UK and US properties that would otherwise have been excluded. See Section 3.1 of Hiscox independent ClimateWise report for details on Flood Re and FloodPlus activities.

As another example, our findings from catastrophe research have directly informed alterations to our US hurricane models (see Section 1.1 of Hiscox's independent ClimateWise report) in regards to both hurricane landfall frequencies around the US coastline and perceived model underestimation of losses in specific regions in the US, with direct effects on our pricing.

In addition, recent studies into Atlantic hurricane frequencies and Japanese tsunami risk are better informing the pricing teams.

To facilitate this process, we have completed an extensive data exercise for our European business to centralise all our natural catastrophe risk information and make it more easily available to our underwriters, so enabling them to tailor their responses to climate change issues.

Further information on Hiscox work in this area can be found in our independent submission.

Evidence also applies to principle(s): 1.1, 1.3, 3.1, 3.4

Source: Hiscox

The Lloyd's market / MS Amlin / Approaches to flood risk forecasting: research collaboration with Imperial College, London

Flood monitoring and modelling is becoming more important in the UK, especially with the Flood Re initiative enabling underwriting of higher flood risk properties. Research shows that flood warnings, flood emergency response plans, and standards on installations would make a positive difference to damage saving efforts. Property owners would benefit from tools or capacity to react in an appropriate manner during an event, using the knowledge that they receive through early warnings, educational talks and resources. Whilst there is an abundance of information in the UK, data availability and homogeneity varies greatly by country, which poses great challenges for flood monitoring across Europe.

Although the attribution of trends in storms and flood losses to climate change is unlikely to be answered unequivocally in the near future, there is consensus on the need for better use of modelling, data and uncertainty. Increased resolution and regionalisation of weather prediction models, differentiating the impact of climate variability and sequences of events, are critical for modelling.

MS Amlin's Underwriting Modelling team carried out a review of flood event response research and tools, and how these could be used internally to improve flood event response and pass on knowledge to customers. To further explore these themes, MS Amlin collaborated with the Imperial College, London MSci programme on a thesis to develop a localised flood response model, using Carlisle as a case study area as proof of concept. This research initiative was also inspired by our flood toolkit work being conducted within our Property & Casualty division (*see principle 3.1 for further information*).

The thesis objectives were:

- Sub-catchment characterisation based on daily rainfall and river flow values
- Interrogation of geospatial datasets to determine how catchment statistics affect catchment response during flood events
- Uncover relationships in these datasets that could assist in forecasting the response of ungauged catchments
- Identify hydrometeorological trigger thresholds for different flood event classes.

The thesis successfully demonstrated the definition of trigger thresholds for large inundation events based on a correlation of rainfall and inundation flood volumes as well as the extrapolation to ungauged catchments. However, small and localised events require a gridded approach incorporating API-fed rainfall data, geospatial datasets and routing, to model localised antecedent conditions and overland flow.

Results from the thesis will contribute to the development of a national flood forecasting tool and vulnerability mapping procedure, which will integrate with current practices at MS Amlin.

MS Amlin expanded its catastrophe modelling capability this year with the appointment of Dr Tina Thomson as Research Manager in the Catastrophe Modelling team within the Underwriting Modelling function. Dr Thomason will be responsible for informing MS Amlin's view of risk by further building relationships with research bodies, academia, and third-party providers, to evaluate MS Amlin's catastrophe models against science and alternative approaches.

A further example of how MS Amlin is leading in risk analysis was demonstrated in the year through the sponsorship of the Lloyd's breakfast briefing on "Satellite Remote Sensing: Disaster Risk Reduction and Insurance Uses" in September 2016.

This briefing informed the audience on recent catastrophic events and the use of the latest remote sensing and satellite technologies for disaster risk reduction and the insurance sector, a briefing within which Tina focused on remote sensing for event response and risk optimisation.

Evidence also applies to principle(s): 1.1, 1.3, 1.4, 3.1, 5.4

Source: MS Amlin

The Lloyd's market / RenaissanceRe Syndicate Management Ltd / NatCatDaX: the Natural Catastrophe Data and Analytics Exchange Alliance

The Natural Catastrophe Data and Analytics Exchange (NatCatDAX) Alliance was launched at the 7th International Symposium on Catastrophe Risk Management organised by NTU, is an industry-led catastrophe data and analytics platform for Asia.

The Alliance is a partnership with Nanyang Technological University (Singapore's Institute of Catastrophe Risk Management), Aon Benfield, Mitsui, Risk Management Solutions and PERILS, with support by the Monetary Authority of Singapore (MAS) RenaissanceRe is a founding member of the Alliance with representation on the governing Board.

The Alliance will generate a rigorous database by tapping into national and industry data. Such high quality data, market analytics and product innovations are currently lacking in the region, and the output of this Alliance can be used to help analyse key cities and regions within Asia to understand both the insurance exposure to a loss as well as the economic exposure more generally as a result of an event.

In 2016 Jon Paradine, Principal Officer, Singapore Branch, Renaissance Reinsurance Ltd and DaVinci Reinsurance Ltd, said:

"Fostering a shared, scientifically sound understanding of catastrophic risk in Asia will help to better protect people from the increasing risk of natural disasters, while expanding the penetration of insurance coverage will improve financial resiliency for our communities. This ground-breaking initiative will further enhance Singapore's position as a strong, innovative financial centre and RenaissanceRe is honoured to be a founding sponsor."

Evidence also applies to principle(s): 1.1, 1.3, 1.4, 2.1, 2.2

Source: RenaissanceRe Syndicate Management Limited

The Lloyd's market / Tokio Marine Kiln / Joint research on climate change with universities

The TM Group has partnered with the following research groups to improve responses to climate change and natural disaster risks. In March 2016, the group publicly presented achievements to date on earthquake and tsunami risk assessment, tsunami evacuation research and disaster prevention education, and awareness training:

- Atmosphere and Ocean Research Institute at The University of Tokyo
- Hydrospheric Atmospheric Research Centre at Nagoya University
- Graduate School of Engineering
- Disaster Prevention Research Institute at Kyoto University

TMK is represented on the ClimateWise Insurance Advisory Council. In conjunction with the University of Cambridge, the Council will launch the research on 'Transition Risk Project' this year and is evaluating the feasibility of another research piece on 'Physical Risk'. The Transition Risk Project involves undertaking compelling and multi-disciplinary research to demonstrate materiality to determine the financial performance of infrastructure over a relevant time period. This will inform investment strategies and thinking by supervisory organisation to ensure appropriate risk management steps are taken.

Further information can be found in the group CSR section of the website, and TMK anticipate covering outputs of the studies in future reporting.

Evidence also applies to principle(s): 1.1, 1.3, 1.4, 2.1, 2.2, 4.1

Source: Tokio Marine Kiln

1.3 Use research and improve data quality to inform levels of pricing, capital and reserves to match changing risks.

The Corporation of Lloyd's / Stranded assets

In the 2015-16 private reporting, the Corporation of Lloyd's provided evidence of a report underdevelopment with the Smith School for the Environment at University of Oxford that aimed to explore the topic of stranded assets. The work was published in March 2017 and a public case study has been provided to demonstrate the continual planning that occurs to explore and develop thought leadership material to be shared with our industry and beyond.

Stranded assets became particularly relevant to insurers when Mark Carney, the Governor of the Bank of England and head of the PRA, the insurance regulator, spoke about the topic at the 2015 Lloyd's City Dinner, and stressed how important it was that the industry takes account of stranded asset risk when developing its investment strategies and future liabilities – the study was already underway, and the Corporation of Lloyd's took part in the roundtable series that fed in to the Bank of England's summary of climate change risks.

Stranded assets are defined as assets that have suffered from unanticipated or premature write-downs, devaluation or conversion to liabilities. In recent years, the issue of stranded assets caused by environmental factors, such as climate change and society's attitudes towards it, has become increasingly high profile.

While asset-stranding is a natural feature of any market economy, it is more significant when related to environmental factors because of the scale of stranding that could take place. Changes to the physical environment driven by climate change, and society's response to these changes, could potentially strand entire regions and global industries within a short timeframe, leading to direct and indirect impacts on investment strategies and liabilities.

Asset stranding is already taking place in some industries. For example, the increase in renewable energy generation, worsening air pollution, and decreasing water availability caused by climate change, coupled with widespread social pressure to reduce China's demand for thermal coal, have negatively impacted coal-mining assets in Australia.

Methodology

As part of this study, the Corporation of Lloyd's and the Oxford Smith School convened a workshop that brought together a range of multi-disciplinary experts to identify the key issues affecting investment portfolios and insurance risks during an afternoon that also featured a climate change session facilitated by ClimateWise for the Bank of England. The workshop identified sectors relevant to insurers that are, and could be, affected by asset-stranding. It aimed to challenge assumptions in the insurance industry and raise awareness of the potential impacts of asset stranding on both liabilities and assets.

The resulting eight scenarios are described in detail in the report, together with likely responses from both individual and institutional investors. The scenarios used are not exhaustive, allowing this report to illustrate the concepts through examples, rather than attempting to create a comprehensive compendium. In addition, the Corporation of Lloyd's is not saying the scenarios will happen, just that there is a considered probability that they might.

The report sets out a number of key actions that companies including insurers, could take in their role as investors to identify and mitigate stranded asset risks.

Impact

The study was launched online and the pdf of the report was circulated to a marketing list of 8,000+ names as well as being actively shared on Lloyd's social media channels to help educate both customers and the wider insurance sector. A resource pack was also developed for Corporation of Lloyd's country managers to use in their local regions to communicate the work.

The work has been presented at a number of events since the study was launched in March 2017, including the Annual General Meeting of the 'High Premium Group' on 25 April 2017 and the Insurance Non-Executive Directors on 5 June 2017 as part of an overview of emerging risks and innovation activities. The presentation also covered water risks, food security and climate change as part of work to socialise research and raise awareness of the issues.

This is an example of how research relevant to the market is integrated into the Corporation of Lloyd's activities and forward planning, and the development of global climate research by the Corporation of Lloyd's. It also represents work towards the Innovation strategy KPI for 2017 to deliver at least eight thought leadership reports, focusing on 'emerging risks, best practices in classes of business and pre-competitive risk quantification models' (*see p19 in 'Lloyd's Strategy 2017-2019'*).

The project is also used as an example in emerging risks and innovation presentations by the Innovation team to describe work Lloyd's is undertaking in this space.

Evidence also applies to principle(s): 1.1, 1.3, 1.4, 2.1, 2.2, 3.1, 4.1

Source: The Corporation of Lloyd's

The Corporation of Lloyd's / Investing for resilience work stream

In the 2015-16 private reporting, the Corporation of Lloyd's demonstrated how Corporation employees were taking part in the 'Investing for resilience' work stream run by ClimateWise. The Corporation were involved in this work through its position on the ClimateWise managing committee – approving the work – and by attending the roundtables that aimed to explore questions such as:

- *What benefits could investing for resilience provide to insurers, other stakeholders, and society in general?*
- *What contribution might different parts of the insurance industry make to resilience investing?*
- *What are the barriers and bottlenecks that might inhibit investing for resilience? Are there policy initiatives that could help lower the barriers?*

The study was published in December 2016, and aimed to explore the relationship between the insurance industry, its investment activities and its potential support for resilience-enhancing investments. Consequently, the report was designed to provide a foundation for further research and discussion across this area to influence business practices.

The Corporation of Lloyd's also ran a parallel topic exploring the concept of city infrastructure resilience, and outputs from that study, along with past work, were directed into the project. This is an example of how research relevant to the market is integrated into activities and forward planning, and the development of global climate research by the Corporation of Lloyd's.

Evidence also applies to principle(s): 1.1, 1.3, 1.4, 2.1, 4.1

Source: The Corporation of Lloyd's

Lloyd's / The Corporation of Lloyd's / Supporting research

The Corporation of Lloyd's has a long history of supporting and facilitating research, as evidenced by past reporting.

Activities over the 2016-17 reporting year include:

1. Science of risk: Building on previous reporting in this area the Corporation of Lloyd's has run an annual prize that is designed to challenge researchers and Lloyd's insurers to stretch their thinking in two categories. Entries for the 2016 Science of Risk Prize were accepted under:
   - Natural hazards

     One of the key sources of uncertainty for insurers in the assessment of complex risks lies in the connections between economic, political, social and natural systems. In the system modelling category the Corporation of Lloyd's requested entries that attempt to tackle this challenge by combining modelled outputs from more than one system. Examples of complex problems in this are the multi-dimensional impacts of climate change or the cascading effects of a shock to global food supply networks

– Systems modelling

The natural hazards theme featured the Peter Taylor Prize for outstanding contribution to insurance understanding of Natural Sciences. Reflecting the late Peter Taylor's commitment to the advancement of science in insurance, the prize was established to generate entries that connect the science of natural hazards with clear implications for insurance.

The natural hazards category was won by Dr Benjamin Youngman, Department of Mathematics and Computer Science, University of Exeter, for his paper on 'A geostatistical extreme-value framework for fast simulation of natural hazard events'. The runner up for this category was Dr Hannah Christensen, Atmospheric, Oceanic and Planetary Physics, University of Oxford, for her paper on 'Stochastic parameterisation and the El Niño-Southern Oscillation'.

Both of these entries, along with the winners of the systems modelling category presented the research at an event hosted in the Old Library theatre at the One Lime Street building.

2. In June 2017, the Corporation of Lloyd's hosted an event as part of support for the Oasis Loss Modelling Framework. The event featured presentations from individuals and companies currently using the platform. This included presentations illustrating how insurers are accelerate the acquisition of external data: weather, historical CAT footprint, terrain models, cities details using big data, and wider Oasis LMF activities that include a €6m investment by Climate-KIC in a "Flagship" programme around the framework.
3. This followed a press release in October 2016 that announced the result of a Corporation of Lloyd's and Lloyd's market Association (LMA) facilitated a ground-breaking deal with US Hurricane model provider Applied Research Associates (ARA) to make available their Hurloss model to subscribing Lloyd's managing agents on a shared services basis.

   The model is accessible on the open Oasis framework alongside a model for earthquake hazard in the Middle East, with hosting also provided on a shared services basis that is facilitated by Cinnober, Equinix and Datapipe.

   Ten managing agents are currently supporting the deal: Ascot, Beazley, Barbican, Chubb, RenaissanceRe, Tokio Marine Kiln, SCOR (Channel), Starstone, Sompo Canopius and XL Catlin. Other managing agents may participate in future arrangements for catastrophe modelling on the Oasis platform on a shared services basis.

Evidence also applies to principle(s): 1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 3.1

Source: The Corporation of Lloyd's

The Corporation of Lloyd's / Lloyd's Tercentenary Research Fund

In the 2015-16 private reporting, the Corporation of Lloyd's illustrated activities by the Lloyd's Tercentenary Research Foundation in funding academic research across a range of areas, as well as the two-year research project led by the University of California at Santa Cruz entitled 'The Role of Coastal Habitats in Managing Natural Hazards and Risk Reduction: A Multi-Disciplinary Approach Across Ecology, Economics and Engineering'.

Lloyd's Tercentenary Research Foundation (LTRF) was established to mark the tercentenary of Lloyd's in 1988. Since then, it has funded over 100 years of academic research in the fields of engineering, science, medicine, business and the environment through the provision of post-doctoral fellowships and business scholarships.

Through its partnership with the Insurance Intellectual Capital Initiative and UK Research Councils, LTRF continues its work of funding academic research by supporting new programmes of research on risk related issues. Note that LTRF is an independent charity and not part of the Corporation but, with the exception of audit and investment management fees, the administration costs of the Foundation are borne in full by the Corporation of Lloyd's.

The following table illustrates research funded in the 2016/2017 academic year.

LTFR funding awarded

Year	Name	Host Institution/ Department	Project Title	Project Duration
2016/17	Dr Hannah Bailey	Welker Lab , University of Alaska, Anchorage	Unravelling historical climate records preserved in Alaskan glacial ice	12 months

Project summary by Dr Hannah Bailey: “This interdisciplinary research project will quantify, evaluate, and assess recent extraordinary changes to Alaska’s hydrological cycle and glaciers. The research will be based at the University of Alaska Anchorage working with Professor Welker, Fulbright Distinguished US Arctic Chair. This exciting project will utilize existing, high-quality and novel datasets to quantitatively unravel the historical climate records preserved in an Alaskan mountain ice core. This high-impact and ambitious Fulbright project will provide a highly relevant and applied contribution to polar environmental research, and will attract considerable global attention.”

Year	Name	Host Institution/ Department	Project Title	Project Duration
2016/17	Dr Stefan Lachowycz	Carnegie Institution for Science, Washington DC	CI Investigating temporal changes in volcanic hazards and risk using statistical techniques	12 months

Project summary by Dr Stefan Lachowycz: “Volcanoes are unique as a geological hazard in their propensity for the risks they pose to change through time, sometimes abruptly with little warning. The causes of this temporal variability are poorly understood, particularly the influence of external factors such as weather and large earthquakes, despite the significance for risk appraisal. Stefan will investigate the causes of (sub-) annual-scale variations in volcanism, including the role of external factors, by analysing data from monitoring of active volcanoes in the US and elsewhere. Statistical methods will be used to examine the variability of distinct properties of the data and constrain the mechanisms of changes in hazards/risk.”

Year	Name	Host Institution/ Department	Project Title	Project Duration
2016/17	Edward Foale	MSc in Homeland Security, San Diego State University	Homeland Security MSc	12 months

Project summary by Edward Foale: “My main interest is risk assessment in the context of national security and informing contingency planning for national emergencies. I have worked on the United Kingdom’s National Risk Assessment and am aware of the range of risks to the UK. The area that is not well understood internationally and I will study a Master’s degree in is cyber security in a national security context, focusing on the way new technologies, particularly those not yet on widespread release, could be used maliciously to facilitate national emergencies in innovative ways. I hope to make a valuable contribution to the debate on technological resilience.”

Forward planning

In 2015, LRTF renewed the partnership with the US-UK Fulbright Commission for a further three years from the 2016/17 academic year and expanded the programme to a fund one Postgraduate Award, as well as two Fulbright - Lloyd’s of London Scholar Awards on an annual basis. Further awards will be reviewed and announced going forwards.

For more information, see the LTRF pages.

Evidence also applies to principle(s): 1.1, 1.3, 1.4, 3.1

Source: The Corporation of Lloyd’s

The Lloyd’s market / ArgoGlobal / Evaluation of evolving climate risks

Argo Group considers the impact of climate risk in its modelling of risks and exposures for the product lines and insurance coverages that it offers. Argo Group also considers the influence of climate change risk in its underwriting decisions. For example, in modelling flood catastrophe exposure, Argo Group makes assumptions in its model regarding increases in ambient temperature, and has revised its appetite for flood risk in the US in certain zones. As well as this

Ariel risks uses custom rates applied to risks and derive using research to obtain our own view of the risk (both in the short term and long term).

Forward planning

Climate risk is implicitly included in catastrophe reinsurance considerations through the use of catastrophe modelling. Allowance for uncertainty in climate change risk is allowed for through the use of Argo Group's Stress & Scenario Testing Framework (SSTF) and economic capital modelling processes. These stress tests together with our approach to non-modelled risk (NMR) and emerging risk processes provide the ability to consider the wider economic capital implications for Argo Group's solvency in respect of climate-related risks.

For example, Argo Group has identified 'Stranded assets' as a strategic risk factor with potential material impacts over the planning horizon. Argo Group has reviewed its investment strategy as part of its 2016 sustainability plan to identify high-carbon industry holdings. Utilising the Lloyd's of London report entitled "Stranded Assets: the transition to a low carbon economy Overview for the insurance industry', Argo Group completed stress test scenarios considering the potential impact of high-carbon assets within its portfolio on its capital adequacy. The results of this study were combined with other scenarios within the Stress & Scenario Testing Framework (SSTF) and this has been reported to the Risk & Capital Committee of the Argo Group Board as part of the quarterly Own Risk & Solvency Assessment.

Evidence also applies to principle(s): 1.1, 1.3, 3.4

Source: ArgoGlobal: Syndicates 1200 and 1910

The Lloyd's market / MS Amlin / Non-modelled risks white paper

The Association of British Insurers published an industry White Paper on Non Modelled Risks ("Non Modelled Risks: A guide to more complete catastrophe risk assessment for (re)insurers") which was co-authored by JB Crozet and David Singh from MS Amlin. This paper defines Non Modelled Risks as *"Any potential source of non-life insurance loss that may arise as a result of catastrophic events, but which is not explicitly covered by a company's use of existing catastrophe models".*

Building on this initiative, MS Amlin developed a methodology for enhancing the modelling of these risks in our Internal Model. The approach is based on the EM-DAT database of natural disasters maintained by the Centre for Research on the Epidemiology of Disasters ("CRED"). The EM-DAT database contains essential core data on the occurrence and effects of over 21,000 mass disasters in the world from 1900 to present. It is compiled from various sources, including UN agencies, non-governmental organisations, insurance companies, research institutes and press agencies. The database provides estimated total damage and we have complemented this with Swiss Re's Sigma Reports to estimate the insured loss from each event.

Using actuarial techniques, we have developed high-level market-share models for each Non Modelled Peril/Region in the EM-DAT database, which we are planning to embed in the Pricing & Portfolio Management Platform which feeds our Internal Model.

Related to model completeness, David Singh has also contributed to Lloyd's Minor Model Change guidance for Catastrophe Risk. Lloyd's' intention is to understand, in advance, proposed material changes in the view of natural catastrophe risk within the Internal Model that fall under the syndicate's definition of a minor model change.

Evidence also applies to principle(s): 1.1, 1.3, 2.1, 3.1, 5.4

Source: MS Amlin

The Lloyd's market / Tokio Marine Kiln / Use of researching in pricing, capital and reserving

Natural catastrophe risks and exposure play a dominant part of Tokio Marine Kiln's (TMK) insurance portfolio. Therefore it is critical that we have in-depth knowledge and understanding of the modelling of different portfolios and perils we write.

Whilst we rely on third party models to deliver the raw materials of portfolio management and specific peril analysis, TMK spends considerable time on model validation and improvement. We continuously look for additional industry data to supplement our existing models. For example, we have used data from JVA on UK flood and Spatial Key to enhance our models on floods. TMK is also a core member of the Lloyd's Oasis project and views this initiative as another useful source of industry models.

To date the future impact of climate change has been widely considered by our risk and exposure management, capital and reserving and pricing teams. Emerging climate change issues from El Nino, La Nina and Polar Vortex have been discussed in length amongst the teams in weekly meetings and internal research papers have been produced by the Modelling Valuation team within Exposure Management each month. Where relevant, the output of these research have been considered and incorporated in the capital and reserving of the portfolio.

TMK works closely and shares knowledge and intelligence on climate change via TM Tech. TMK's CRO participates in the conferences held by TM Tech, where the latest thoughts on climate change are discussed across the different operations. We then utilise the group know-how in conducting sensitivity testing in the models.

Evidence also applies to principle(s): 1.1, 1.2, 1.4, 2.1

Source: *Tokio Marine Kiln*

1.4 Evaluate the risks associated with new technologies for tackling climate change so that new insurance products can be considered in parallel with technological developments.

Lloyd's / The Corporation of Lloyd's / Special Interests Group

Building on 2015-16 reporting, the Corporation of Lloyd's continues to run the Special Interests Group, which brings together Lloyd's market representatives to discuss and feedback on emerging risks that could affect Lloyd's on a range of different timescales. The group is available to Lloyd's market Managing Agents only and topics are raised from market members and the emerging the Innovation team horizon scanning process.

The Special Interests Group was formed in May 2007 to act as a bridge between the Lloyd's market and the then Corporation of Lloyd's Emerging Risks team to identify key emerging risks that are of current and potentially future interest to the market. Meetings usually consist of an update on emerging risk topics from the Innovation team, alongside a presentation from an expert external speaker on topics relevant to the group.

Over the last reporting year four meetings were held on a quarterly basis. The March 2017 meeting included a session on distributed energy networks from two sector experts. The presentations covered global trends and insight on potential market development, as well as the technological and policy shifts the experts are seeing develop this space. The topic was identified during the horizon scanning process from the Innovation team, and is example of how the Corporation of Lloyd's shares research on areas of common interest with the Lloyd's market.

During the session:

- Paul Kirk gave a presentation on "Distributed energy networks (DEN)". She explored the current state of DEN and the global trends and drivers that are pushing this approach forwards.

  Paula is currently leading the Cities, Energy and Climate Change team at Arup. Working with cities globally through Arup's strategic partnership with the C40 Climate Leadership Group, carrying out research and analysis of climate actions in megacities. She is the Project Director for Arup's delivery of the Mayor of London's Decentralised Energy for London Programme (DEPDU), having worked on developing the strategy behind this for almost 10 years.

- David Hill gave a presentation on "Machine learning and distributed energy networks". He outlined the business model Open Energi deploys to meet a growing market, and how risks and management are shaping development.

David Hill is Business Development Director at Open Energi and an expert on electricity markets and demand response. He is responsible for defining and delivering Open Energi's vision and strategy to deliver system-wide change in energy markets.

Evidence also applies to principle(s): 1.1, 1.3

Source: The Corporation of Lloyd's

Lloyd's / The Corporation of Lloyd's / Water risks paper, Emerging Risks Initiative, Chief Risk Officer Forum

Building on previous case studies in past reporting years, the Corporation of Lloyd's maintains a position on the Emerging Risks Initiative (ERI), a subgroup of the Chief Risk Officer Forum.

During the 2016/17 reporting period the group aimed to synthesise an overview of current scientific and industry knowledge to illustrate potential impacts that water risks may represent for the re/insurance industry. The paper 'Water Risks: Emerging Risk Initiative – Position paper, November 2016' served as a contribution to the CRO Forum's goal of providing best practice in risk management to advance business. In line with earlier papers by the ERI, this publication is a further demonstration that the re/insurance industry aims to engage in horizon scanning of possible social, climatic and technological evolutions.

For each water-related risk examined – scarcity, pollution, health, treatment, conflicts, regulatory and reputational issues – the paper illustrated case study examples and thoughts on ways the insurance and reinsurance industry could offer assistance to customers looking to adopt innovative water-related projects or technologies.

The paper also outlined steps on 'ways insurers and reinsurers could invest in projects with the aim to promote efficient water management or enhance understanding for risk assessment of water risks'.

Evidence also applies to principle(s): 1.1, 1.2, 1.3, 1.4, 2.2, 3.1

Source: The Corporation of Lloyd's

The Lloyd's market / ArgoGlobal / New technologies and insurance products

ArgoGlobal have constructed a stochastic wildfire model from scratch with US and Canada coverage. This has been completed as a reaction to the increased frequency of wildfire event that has been seen over the last few years, with a view to assess the materiality of and price for the peril. This model has been calibrated with observed experiences and has considered possible climate change related variables within its calibration.

Forward planning

ArgoGlobal will be participating in an initiative by a Rockefeller Foundation – World Bank Disaster Risk Finance and Insurance Program (DRFIP) partnership. The aims of this initiative are to explore innovative financial solutions against climate and disaster risks in Asia. Specifically this aims to offer parametric flood coverage to counties in Asia where the risk has increased due to climate change.

Evidence also applies to principle(s): 2.2, 3.4

Source: ArgoGlobal: Syndicates 1200 and 1910

The Lloyd's market / Chubb / Global 100 Cleantech

The renewable energy sector is a major product area for Chubb. The desire to develop clean, efficient alternative sources of energy is leading to the planning and construction of renewable energy projects around the world. These projects take many different forms: biomass/biofuel, biogas, energy from waste, fuel cell, as well as solar, wind and hydro energy. Chubb addresses risks that occur in the two main phases of a typical renewable energy project – construction and operation. Construction risks range from delay in start-up to public or employer liability, whereas operation risks range from business interruption to premises pollution.

In addition, Chubb insures over one third of the Global 100 Cleantech, which are the largest private innovation companies operating in the sustainable technology industry. The insurance protection Chubb provide to these companies indirectly supports the research and development, production and commercialisation of specific technologies that have the potential to reduce GHG emissions.

Evidence also applies to principle(s): 1.4, 3.2
Source: Chubb

The Lloyd's market / Navigators Underwriting Agency Limited / Future proofing engineering design

Whilst large Energy projects such as offshore production, onshore processing or power generation facilities will typically be designed against a 20-30 year design life, it is most likely that their actual operational life will be significantly in excess of the design life. This is clearly the case with existing facilities, where it is not uncommon to find offshore oil and gas platforms that are currently in excess of 40 years old, and older in the case of onshore processing and power generation facilities.

In this regard, Navigators' Risk Engineers are maintaining a dialogue with climate change modelling specialists and Energy clients alike to better understand the potential impact on a structure or facility from a natural hazards perspective projected 40 plus years to consider the potential impact of climate change, with a view to building a more resilient design. Examples include consideration of 'air gap' (the distance between the underside of the cellar deck and the crest height of an extreme wave for a given return period) requirements for offshore platforms against a projection of rising sea-levels, and elevation/location of critical onshore infrastructure such as electrical sub-stations in an environment of changing flood levels.

For an Energy Operator, this requires a highly proactive approach, with projects needing to make investment decisions today with potentially more conservative and by definition more costly design that will only provide benefit in future decades. In the absence of such an approach, there is an increased risk to future operations, with potential costly loss of production in addition to property damage that could at that a future time only be avoided by expensive retro-fitting. Future proofing the design would need to be demonstrated as cost effective, with suitable financial analysis in line with 'life-cycle' approach engineering.

The benefit for the insurer if such an approach is taken, is greater confidence in design robustness to 'spike' extreme events in the short-term and greater certainty in regards to future insurability, which could offer a client long-term pricing benefits.

Evidence also applies to principle(s): 1.1, 1.2, 1.3, 1.4, 3.1

Source: Navigators Underwriting Agency Limited (Navigators)/NavTech

The Lloyd's market / Tokio Marine Kiln / Insurance products innovation in response to climate change

Tokio Marine Kiln has been providing insurance support to new technologies which serve to work against climate change. We have highlighted some examples as follows:

One TMK Digital Exchange

TMK continues to migrate products to its One TMK exchange. As of June 2017, there are three products available on the platform: UAS, Cargo annual shipment and construction. Cargo single shipment as well as a suite of products for TMK's US coverholders are due to come online later in 2017. One of the purposes of this is to reduce the amount of paper involved in getting a TMK insurance policy – all quotes, binding and documentation is paper free.

Furthermore, the platform allows brokers to conduct business with us anywhere and anytime. This reduces the significant chains of brokers that can develop in order to get access to the Lloyd's market. In addition to this, the Lloyd's market still operates on a face-to-face basis and the use of the platform reduces the necessity of transportation for brokers and underwriters to conduct business in this way. The One TMK digital exchange was shortlisted in 2016 for a Lloyd's Innovation award in the category of best non-product innovation. Overall, the use of technology will contribute positively to climate change.

Unmanned Aerial System (UAS)

The UAS industry indirectly provides solutions that help counter climate change as they are a greener alternative to operating a conventional aircraft, with many UAS systems operating via batteries and even solar power rather than the usual polluting fuels used in manned aircraft. With its leading expertise, TMK is supporting the increase usage of UAS through the coverages it provides.

In May 2015, TMK has successfully launched the first comprehensive insurance product of its type for Unmanned Aerial Systems (UAS) in the Lloyd's market. The product, "One Unmanned" offers clients, ranging from UAS operators, manufacturers and service providers, protection under a single wording featuring multiple coverages, which the client can tailor to best suit the needs of their business.

In recognition of TMK's contribution to the industry, the "One Unmanned" product was shortlisted for the category "most innovative product" in the inaugural Lloyd's Innovation award in 2015.

In 2017, TMK won an award in the inaugural Tokio Marine Group CSR initiative for all the group companies globally. The award recognises UAS as a greener option of insurance product in various commercial sectors. The submission highlighted how carbon heavy practices such as helicopter flights are being replaced by UASs in various commercial sectors, reducing carbon emissions. TMK's product supports the increase in usage of UASs.

Crop

In 2017, TMK hired a team of crop underwriters which will allow TMK to underwrite international crop reinsurance business. The indirect benefit of this is that TMK's insurance capacity helps support the agriculture sector, especially in high risk areas where there is significant agricultural impact of natural disasters, particularly in Latin America and Asia.

Renewable Energy

TMK is a pioneer in the renewable energy insurance space and has been underwriting since 2002, by supporting one of the largest and long established managing agency in this area. To-date, TMK still leads the Renewables line slip with a share of more than a third, covering comprehensive property insurance coverage for transit, construction and operational risk associated with wind, solar, hydroelectric and wave and tidal energy generation across developed and developing countries. We have seen the mix of portfolio shifting over the years with the emergence of new sources of energy and increasing exposure to emerging countries such as Latin America, South Africa, and Asia.

Given our participation in this area over the past decade, we have access to extensive technical data and this has been used for risk management and understanding of key trends. The managing agency whom we have supported often hosts workshops / conferences for its customers. These conferences aim to provide key lessons learnt from new technologies, risk management best practices as well as key market trends and emerging risks. TMK is represented in all of these workshops/conferences.

Building on TMK's expertise in this field, the Tokio Marine Group has leverage the size of its balance sheet in providing insurance coverage on larger renewable energy projects and supporting our clients globally. A few notable examples include the Fukushima floating offshore wind farm project in Japan and MHI Vestas in Scandinavia.

Evidence also applies to principle(s): 1.1, 1.2, 1.3, 2.2, 4.1, 4.3

Source: Tokio Marine Kiln

2 Inform public policy making

2.1 Work with policy makers nationally and internationally to help them develop and maintain an economy that is resilient to climate risk. This should include supporting the implementation of emissions reductions targets and where applicable supporting Government action that seeks to enhance the resilience and reduce the environmental impact of infrastructure and communities.

Lloyd's / The Corporation of Lloyd's / Food security

Building on 2015-16 reporting, the Corporation of Lloyd's continues to promote the Food System Shock study and socialise the concepts. The Corporation of Lloyd's commissioned experts in the field of food security and the economics of sustainable development were asked to develop a scenario describing a plausible, relatively severe production shock affecting multiple agricultural commodities and regions, and describe the cascade of events this could cause.

In February 2016, via ClimateWise the Corporation of Lloyd's contributed a case study on the research to the G20 Green Finance Study Group (GFSG). The G20's Green Finance Study Group supports the G20's strategic goal of 'strong, sustainable and balanced growth'. The study group was established during China's recent G20 Presidency to 'identify institutional and market barriers to green finance, and based on country experiences, develop options on how to enhance the ability of the financial system to mobilise private capital for green investment'.

The Group is co-chaired by the United Kingdom and China, represented by the Bank of England and the People's Bank of China, with support from UN Environment as secretariat. It is currently in its second year, continuing under the German G20 Presidency.

The scenario research was featured throughout the outputs, including:

- Cambridge Centre for Sustainable Finance. 2016. Environmental risk analysis by financial institutions: a review of global practice. Cambridge, UK: Cambridge Institute for Sustainability Leadership.
- G20 GFSG. 2017. Enhancing Environmental Risk Analysis in Financial Decision-making. Bank of England, UN Environment Inquiry, University of Cambridge Institute for Sustainability Leadership.

The research papers can be found on the UNEP project page. The Corporation of Lloyd's continue to promote the research where relevant.

Evidence also applies to principle(s): 1.1, 1.2, 1.3, 1.4, 2.1, 2.2

Source: The Corporation of Lloyd's

The Corporation of Lloyd's / Senior leadership engagement

In previous reporting the Corporation of Lloyd's has provided evidence of the commitment to effect positive change by being seen as a leader in its responsible business approach. This is reflected in the Corporation of Lloyd's business practices as well as its work with community and charity partners.

As part of the Corporation of Lloyd's work in this area the 2017-2019 strategy document outlines the aim for the Corporation to 'use its experience and expertise to help communities around the world build resilience against disasters, including the effects of climate change and extreme weather events. All of these activities help to complement the Lloyd's brand and attract new and diverse talent.'

In the 2016-17 reporting cycle this has included:

1. In 2016, John Parry, Chief Financial Officer, joined the ClimateWise Insurance Advisory Council and has attended the two council meetings scheduled during this reporting period to provide input on potential projects that may be funded by the group :

   > *"I firmly believe we can help society accept the risks of climate change as a given and immediate concern, and use our horizon scanning and understanding of risk to devote resource to loss resilience. I want to drive global responses now, not when it is too late."*

   - John Parry, Chief Financial Officer, Lloyd's

   The Council's purpose is to draw on the University of Cambridge and its partners' expertise to help strengthen the industry's response and inform regulators, policymakers and other stakeholders on how to promote more systematic responses to climate change across the financial system.

   Involvement in the ClimateWise Insurance Advisory Council requires participants to:

   - Provide strategic oversight for relevant multi-disciplinary analysis that the Council identifies as necessary for achieving the objectives (subject to appropriate resourcing). This will include meeting two (2) times per year as well as occasional informal interactions.
   - Engage with regulators and other industry bodies at key summits and events (not anticipated to exceed 2-3 per year).
     - This has included a breakfast briefing in October 2016 on the G20 Green Finance work with the Bank of England's Michael Sheren.

2. Throughout 2016-2017, senior Corporation staff continued to speak publicly about the issue of climate change and to present work on mitigation and adaptation.

   The following speeches are available online and represent examples of speaking engagements throughout the reporting year:

Senior speaking engagements mentioning climate change

Date	Event	Title	Speaker
28/02/2011	Dubai World Insurance Conference	Welcome speech: "We are also responding to changes in the tangible asset space. For example, climate change, and the global response to it, is driving investment away from hydrocarbon-based energy to renewable generation - particularly relevant in this oil-dominated region. To support this change in business focus, Lloyd's underwrites renewable energy projects here – and all over the world."	Inga Beale DBE, Chief Executive Officer

7/06/2017	ICMIF Meeting of Reinsurance Officials (MORO)	Keynote speech on Innovation and the London reinsurance market: "The turbulent global macro-economic conditions are also playing their part and presenting real challenges. And then there is the great challenge of climate change which, if unmitigated, could cost the world economy around 20% of global GDP by the end of this century. And global climate change has already had observable effects on the environment. Glaciers have shrunk, ice on rivers and lakes is breaking up earlier, plant and animal ranges have shifted and trees are flowering sooner. Effects that scientists had predicted in the past would result from global climate change are now occurring: loss of sea ice, accelerated sea level rise and longer, more intense heat waves."	Inga Beale DBE, Chief Executive Officer

3. In 2015-16 reporting the Corporation of Lloyd's covered activity by Inga Beale DBE, Chief Executive Officer, and the acceptance of a place on the Insurance Development Forum (IDF) steering committee. This commitment formed part of a wider programme of work that is reported against through this document on the topic of resilience, disasters and communities and is part of the overarching work towards Vision 2025.

   During this reporting cycle Beale took part in two steering committee meetings in September 2016 and April 2017, and in April the chair of the initiative comments to members that collectively over 200 industry, public and private participants who have contributed an estimated 5,000 hours over the12 month period leading up to the April meeting. Staff from across the Corporation of Lloyd's aim to continue to be involved in supporting this work stream.

Evidence also applies to principle(s): 1.1, 1.3, 1.4, 2.2, 3.1

Source: The Corporation of Lloyd's

The Lloyd's market / MS Amlin / Working with policy makers

MS Amlin has a number of policies and procedures in place which ensure that our position on climate change is made aware to suppliers, employees and the general public. Through our membership of the Lloyd's market and ClimateWise, MS Amlin participates in the lobbying for action on climate matters.

Most notably MS Amlin's Chief Executive, Charles Philipps, is a founding member of the ClimateWise Insurance Advisory Council. The Council was established in July 2016 to progress the insurance industry's response to climate change, and highlight to global stakeholders the factors which impact our emissions; highlighting the important role that insurers play in the sustainability of society. The Advisory Council aims to ensure different types of regulators and policy makers understand the nature of climate change risks impacting insurance and the wider economy and how the industry is already responding; identify opportunities where regulators can support system wide responses to climate change across the financial sector and beyond; and directly support other insurance or industry bodies with the knowledge to enhance their own responses to this agenda.

Evidence also applies to principle(s): 5.1, 5.4, 6.1

Source: MS Amlin

The Lloyd's market / MS Amlin / Internal policies and procedures

MS Amlin has a Corporate Responsibility (CR) policy that enables us to recognise and meet the needs and expectations of our diverse stakeholders while also creating a workplace that develops talent, improving our environmental efficiency and supporting the communities of which we are part. The CR policy and associated Working Group, which meets regularly throughout each year, enables MS Amlin to take decisions and actions that create responsible outcomes, while also achieving our organisational goals.

Environmental management is a core pillar within MS Amlin's CR Policy, which is published on the employee intranet and all employees are required to familiarise themselves with the details and their responsibilities.

As part of the MS&AD Group, MS Amlin is also committed to supporting and aligning to our parent organisation's Corporate Social Responsibility (CSR) and environmental policies and standards. The overarching mission of our parent, the MS&AD Group, is:

"To contribute to the development of a vibrant society and help secure a sound future for the earth, by bringing security and safety through the global insurance services business."

The MS&AD mid-term management plan sets out the priority issues for CSR and a comprehensive annual report on CSR activities is published on the MS&AD website. MS&AD regards environmental problems and the reduction of environmental impact as an important management issue. It aims to offer products and services that are responsive to climate change and also work to reduce the burden on the environment created by its business activities.

Evidence also applies to principle(s): 5.1, 5.2, 5.3, 5.4, 6.1

Source: MS Amlin

The Lloyd's market / MS Amlin / G20 statement about reducing fossil fuel emissions

MS Amlin believes the role of the insurance sector needs to be reconsidered in society given the changing nature of the risks posed by climate change, as well as other systemic risks such as increased global trade and the need to ensure the economic means of production.

In August 2016, MS Amlin was part of a group of insurers who called for G20 leaders to implement a timeframe for ending fossil fuel subsidies. See the article on The Guardian website for additional details.

Along with multinational insurers Aviva and Aegon, we released a joint statement urging world leaders to implement a clear timeline for the phase-out of fossil fuel subsidies, as these subsidies encourage wasteful consumption, reduce our energy security, impede investment in clean energy sources and undermine efforts to deal with the threat of climate change.

Evidence also applies to principle(s): 2.2, 4.1, 4.3

Source: MS Amlin

The Lloyd's market / QBE European Operations / Engaging with policy makers

Recognising the evidence to support climate risk and the change in the environment, QBE increasingly engage with government to encourage recognition of climate risk and mitigation. This is driven by QBE Group (in Australia) in particular, who engage for example through membership of industry bodies such as the Insurance Council of Australia, but also through QBE's ClimateWise membership.

Evidence also applies to principle(s): 2.2

Source: QBE European Operations: 2017 QBE Annual General Meeting (Sydney, AUS), evidence available upon request

The Lloyd's market / RenaissanceRe Syndicate Management Ltd / Insurance Development Forum (IDF)

RenaissanceRe has long been active in promoting risk mitigation and disaster preparedness to save lives and increase the economic resiliency of cat-exposed communities. Our goals are to help develop new insurance markets and give people and governments incentives to mitigate risks. Ultimately, these efforts hope to reduce the severity and frequency of claims our clients receive, create demand for our products, and are simply good corporate social responsibility.

The IDF was formed in April 2016 following the UN Sendai Framework which highlighted that the key foundation needed in order to assist emerging nations' uninsured populations, is first helping them in understanding risk. Therefore, the IDF initiative grew out of the climate change underpinnings of Sendai. RenaissanceRe played a key leadership role in the creation of the IDF, alongside the United Nations, World Bank and insurance industry.

IDF aims to:

- Incorporate insurance industry risk measurement know-how into existing governmental disaster risk reduction frameworks.
- Build a more sustainable, resilient insurance market in a world facing growing natural disaster/climate risk.

Today in the developing world, more than 90% of economic costs of natural disasters are uninsured; this is known as the Protection Gap. The IDF Mission is to better understand and utilize risk measurement tools that will help governments apply that knowledge at multiple levels in order to better deploy governmental resources targeting resilience to protect people and their property.

The Risk Modelling and Mapping Group (RMMG)

The RMMG is a sub-group of the IDF co-chaired by Ian Branagan, Group Chief Risk Officer and Senior Vice President, RenaissanceRe Holdings Ltd and Alanna Simpson (Global Facility for Disaster Reduction and Recovery - GFDRR, World Bank).

The core goal of the RMMG is to expand access to credible and consistent natural hazards risk data, models and expertise. The RMMP team has focused on understanding the "problem space" of why there is currently limited collaboration across government, intergovernmental, academia and the insurance industry to work to close the insurance protection gap in developing countries.

The RMMG involves circa thirty organisations and aims to achieve methods and practices which are repeatable, scalable and efficient, thereby reducing duplication of activity. This will also serve to remove the persistent reinvention of models, data and information.

The RMMG proposal to the IDF in September 2016 has been endorsed and the RMMG has been recognised by the IDF as having a central role in the IDF's priorities on climate and nature hazard resilience. The key work streams from the RMMG include understanding the problem space, cataloguing risk models, the development of an exposure database, model validations and consistent data standards and the end to end development of an open risk model for a number of pilot countries.

Understanding the problem space

One of the core work streams for the RMMG as referenced above is trying to understand the problem space. The group is developing a framework for user questions on hazard and risk with responses provided which identify the data and the models required to answer the question.

For example, for flood at a local level the following questions might be relevant:

- How high should defences be built to protect against a 1:100 year flood
- What type of improved construction standards would protect more lives and what is the cost-benefit?
- How much rain is expected in the next month?

While these questions are at the local level, the same data that is needed to answer these questions is also needed to build catastrophe models.

Data Standards, interoperability and Model validations

Another key work stream is the development of consistent data standards for risk data which will assist in the interoperability of models. The previous inconsistent development of data, models, methods and language has resulted in reduced confidence in risk Modelling outputs and a reduced ability to coordinate, share and communicate about risk. The harmonization of language, approaches and standards for risk modelling will help to promote rather than restrict innovation.

Open risk model

The development of an end to end open risk model for a number of pilot countries will consolidate the other activities of the other RMMG work streams. This project will help to test the practical challenges with data standards, understand the limitations of open data and also test the benefits of having different hazard, exposure and vulnerability modules to better understand model uncertainty. This project will involve a number of different organisations, government agencies, insurance companies and academics and through this process new risk data would be available to pilot countries and the international community to use of insurance development and disaster risk management.

RenaissanceRe has also been instrumental in the setting up of the Lloyd’s Disaster Risk Facility which involves several syndicates providing a pot of capital for under-insurance, which currently stands at $400mn.

Evidence also applies to principle(s): 1.1, 1.2, 1.3, 1.4, 2.2, 3.1, 3.4

Source: RenaissanceRe Syndicate Management Limited

The Lloyd’s market / Tokio Marine Kiln / Social contribution through participation in international initiatives

The Tokio Marine Group contributes to a safe, secure and sustainable future as a signatory to and participant in the United Nations Global Compact (UNGC), the United Nations Environment Programme Finance Initiative (UNEP FI), Principles for Sustainable Insurance (PSI) and the United Nations Principles for Responsible Investment (PRI).

In addition, through participation in the Disaster Risk Reduction Private Sector Partnership (DRR-PSP) of the United Nations Office for the United Nations Office for Disaster Risk Reduction (UNISDR), ClimateWise and Geneva Association’s Extreme Events and Climate Risk Working Group, the Tokio Marine Group is working to resolve the issues of climate change and natural disasters and mitigate their damage. For the third consecutive year, the TM Group is carbon neutral by offsetting the CO^2 emissions from its business activities through CO^2 fixation and reduction through mangrove tree planting.

The TM Group was appointed as a gold partner of the Tokyo 2020 Olympic and Paralympic Games. The TM Group sets customer trust as the foundation of all its activities and upholds a corporate philosophy of contributing to the development of an affluent and comfortable society as well as a prosperous economy by providing ‘safety and security’ to its customers. This is why the TM Group was selected as a Gold Partner for Tokyo 2020 and supports the game’s ambition of being a cornerstone for the future of Japan for the next 100 years. Further information can be found in the Tokio Marine Annual report.

Evidence also applies to principle(s): 1.1, 1.2, 1.3, 4.1, 4.3

Source: Tokio Marine Kiln

2.2 Promote and actively engage in public debate on climate change and the need for action.

The Corporation of Lloyd’s / Polar code

In 2013-14 reporting the Corporation of Lloyd’s presented work on the commitment to addressing problems in the Arctic region:

- *In 2011, the Corporation published Arctic Opening: Opportunity and Risk in the High North, a ground-breaking report that made recommendations which have helped in the development of the Polar Code. The proposals aimed to enhance the Polar Code and create industry-led standards that would be sent to the Arctic Council.*
- *In 2014, the Corporation hosted the Conference “Bridging the Arctic Marine Risk Gap – linking ice condition to ice class requirements: the need for a cross Arctic Ice Regime”, after which*

Council States, and the International Maritime Organisation (IMO) to work towards developing a comprehensive ice regime, and agree an enforcement regime in international waters outside the Exclusive Economic zone.

Building on this work, Michael Kingston, representative of the International Union of Marine Insurance (IUMI) at the IMO on Polar matters, the Corporation of Lloyd's, in conjunction with the Nordic Association of Marine Insurers, IUMI, and Lloyd's Register, with the close cooperation of the Arctic and Antarctic States, have helped to establish a single ice regime system (POLARIS). The code aims to give guidance for a range of planned and possible situations that might emerge when operating a ship in Polar waters, for use in pre-planning and actual operations. The code came into force in January 2017.

Following on from this, in May 2017, the Corporation of Lloyd's joined in welcoming the Arctic Council Ministerial Declaration to establish the Arctic Shipping Best Practices Information Forum in response to the code. The Declaration was made at a Ministerial Summit on 11 May 2017 in Fairbanks, Alaska, attended by the foreign ministers of the eight Arctic states, including US Secretary of State, Rex Tillerson.

The Forum was established with the aim of raising awareness and the implementation of the International Code for Ships Operating in Polar Waters (Polar Code). The first meeting was held in London from 5-6 June 2017, and attended by Corporation of Lloyd's representatives as observers to inform thoughts in this space:

- David Lawrence, Controller of Agencies, Lloyd's Agency Department
- Kevin Clarke, Manager, Salvage Arbitration Branch and Certificate Office, Lloyd's Agency Department
- Anna Bordon, Executive, Innovation team

David Lawrence, Controller of Agencies, Lloyd's Agency Department, provided introductory remarks at a dinner at Trinity House.

Evidence also applies to principle(s): 1.1, 1.3, 2.1

Source: The Corporation of Lloyd's

The Corporation of Lloyd's / Promotion and engagement

In 2015-16 reporting the Corporation of Lloyd's presented work by Corporation regional offices to engage in public debate on climate change and the need for action.

The following examples outline a sample of activities undertaken during this reporting cycle:

1. In September 2016, the Corporation of Lloyd's responded to a request by Insurance Europe for examples of actions undertaken by members for the 'Target Two Degrees' online tool hosted on their website. The Corporation of Lloyd's is a member of Insurance Europe and four examples were provided as part of the commitment to promote and engage on climate change related activities. The tool material was promoted at several fora that year, including COP22 discussions in Marrakesh.

   This built on activities reporting in 2015-16 reporting where Inga Beale DBE, CEO, Lloyd's pledged support for the "target two degrees" campaign led by Insurance Europe in the to the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21) in Paris in December 2015.

2. In October 2016, Thomas Haddrill, General Representative in Hong Kong, took part in the 4th Asia Marine Insurance Conference organised by Asia Insurance Review in conjunction with The Hong Kong Federation of Insurers. The conference aimed to explore the theme of managing new risks while ensuring stability. Haddril presented a 30 minute session on 'Climate change and its impacts' that used the ClimateWise principles to illustrate activities by the Corporation and market on the topic. Copies of the slides were also made available to conference participants.
3. In February 2017, Shankar Garigiparthy, Country manager, India took part in a roundtable session organised by the UK Government in support with PriceWaterhouseCoopers, who initiated a project with an aim to boost the financials resilience of five cities, including Kolkata, by introducing climate risk insurance to safeguard infrastructure investment made by the city. This forms part of the Corporation of Lloyd's commitment to building more resilient

communities by offering innovative solutions and sharing intelligence and expertise with insurance markets and policymakers around the world.

The workshop facilitated discussion between the Kolkata Municipal Commissioner to present key findings and recommendations of a disaster management study and future action plan to enhance disaster preparedness for city. Garigiparthy contributed material on Lloyd's involvement in catastrophe protection through examples of Corporation and market activities covered in 2015-16 ClimateWise reporting.

Bruce Bucknell, British Deputy High Commissioner Kolkata, was also in attendance at the event and presented material from the Lloyd's City Risk Index in his keynote speech that outlined topics under discussion in the workshop.

4. In March 2017, Lucy Stanbrough, Executive, Innovation team, presented an overview of Corporation of Lloyd's and market activities under the ClimateWise principles to the Corporate Social Responsibility (CSR) group run within the Lloyd's market. This presentation was distributed to attendees and assisted with reporting awareness.
5. In April 2017, following the release of the Stranded assets report Hank Watkins, President, North America, shared his thoughts with British American Business through an opinion piece illustrating on an increasingly common consequence of climate change – stranded assets – as well as what companies can be doing to identify and mitigate stranded asset risks. The article was promoted through the Corporation LinkedIn and Twitter accounts.
6. Also in April 2017, the Corporation of Lloyd's supported 'Business in the Community's Responsible Business Week' as part of the Global CSR commitment to positively affect change through our responsible business approach. A key aim was to demonstration how the Corporation and market help to build resilience in disaster-prone communities through innovative research and programme delivery.

   This included communications around the 'Future cities' thought leadership report and partnerships such as the Lloyd's Charities Trust, which has been working in partnership with the international disaster relief charity RedR with the aim of improving humanitarian response to urban disaster. As part of the funding for this programme the first urban training course was delivered in April 2017 and run completely online with 20 participants signing up all over the world; from Haiti to Zimbabwe, to Europe and the Middle East.
7. Also in April 2017, the Corporation of Lloyd's hosted a Latin America week that brought together regional insurance and economic experts to celebrate Lloyd's past successes in the region and share key challenges and the region's future outlook for growth. This included a presentation on a regional overview of emerging risks from Anna Bordon, Executive, Innovation team that included an overview of the impacts of climate change and the energy markets. Slides were distributed to attendees and are current available on the event webpage.
8. In June 2017, Vittorio Scala, Country manager, Italy, took part in the Insurance Connect conference organised by Insurance Trade and Insurance Daily. The conference aimed to explore risks in the physical and virtual world. Scala presented a 30 minute session on city infrastructure resilience through the Future cities study. A video recording of the session has been made available and can be viewed on the conference event page.
9. Also in June 2017, the Centre for Sustainable Finance at University of Cambridge Institute for Sustainability Leadership hosted a one day workshop on implementing environmental scenario analysis. As a formal 'Knowledge Partner' to the G20 Green Finance Study Group and in the process of collating support for the Taskforce for Climate-related Financial Disclosures draft recommendations from its finance sector leadership groups, CISL observed that there is a critical need to build the capacity of financial institutions in environmental scenario analysis.

   Dr Keith Smith, Manager, Innovation team, attended the event on behalf of the Corporation to share evidence of activities undertaken by the Corporation on scenario analysis, with particular reference to how scenarios are considered in market reporting and thought leadership activities. Material covered the food system shock work that featured in the G20 Green Finance Study Group report earlier in the year, as well as operational and risk impacts.

Evidence also applies to principle(s): 1.1, 1.3, 2.1, 5.4

Source: The Corporation of Lloyd's

The Lloyd's market / ArgoGlobal / Industry contribution to debate on climate change

Argo Group staff regularly participates in conferences and debates on climate related subjects, both as speakers and attendees. Most recent at an extreme events & climate risk forum entitled 'How Will Risk Modelling Shape the Future of Risk Transfer?' where employees were speaking on matters related to next generation risk models.

Other examples include ones organized by Lloyds' and the Work Bank Group on disaster risk financing. These included attending the launch meeting for papers related to Investing for Resilience, which looked at how ESG (environmental-social-governance) indices are being used by institutional investors and the potential for a Resilience Index being developed. Argo also took part in webinars including a 'ClimateWise' seminar on flood protection and insurance industry responses to climate-related flood events.

Argo Group has supported the setting up of an International Insurance Leaders Advisory Council for Climate Change. The purpose of this Council is to bring leaders from the insurance industry together with global regulators to coordinate a more systematic response to Climate Change within the financial services sector. The Group Chief Risk Officer represents Argo Group on this Council.

Forward planning

Argo Group during 2016 has increasingly moved the focus of its corporate sponsorships towards partners with strong sustainability credentials. Argo Group is supporting the Artemis Racing team, the Swedish challenger for the 35th America's Cup. Artemis' operations base at Morgan's Point is a high-technology centre thoughtfully designed to minimize strain on Bermuda's natural resources. Argo Group is also supporting Formula-E Dragon Racing team, who has established and maintains a sustainable and team-driven innovation message which is intended to differentiate its racing program from that of other popular racing programs, such as Formula One.

ArgoGlobal will be participating in an initiative by a Rockefeller Foundation – World Bank Disaster Risk Finance and Insurance Program (DRFIP) partnership. The aims of this initiative are to explore innovative financial solutions against climate and disaster risks in Asia. Specifically this aims to offer parametric flood coverage to counties in Asia where the risk has increased due to climate change.

Evidence also applies to principle(s): 1.4, 3.4

Source: ArgoGlobal: Syndicates 1200 and 1910

The Lloyd's market / Beazley / Supporting action

Beazley have signed the Paris Pledge for Action which represents the formal initiative for non-state organisations at COP21, the 2015 UN Climate Change Conference. This is a demonstration of Beazley's support for the Paris Agreement and its ambition to limit the global temperature rise to less than 2 degrees Celsius.

As part of Beazley's support of the Paris Agreement, and to further understanding of the potential implications for the insurance industry Beazley sent a representative to the Prince of Wales' Business and Sustainability Programme at the University of Cambridge's Institute for Sustainability Leadership. This has helped us to access a strong network of Sustainability professionals, and is enabling us to explore more innovation in insurance through Beazley's Responsible Business Marketplace work stream.

Evidence also applies to principle(s): 2.1, 3.4, 5.4

Source: Beazley

The Lloyd's market / MS Amlin / Working with leading public bodies

MS Amlin is affiliated with The Geneva Association, an international insurance think tank that produces and distributes high-quality research and analysis on global strategic insurance and risk management issues. The Association's research promotes policy-related, public discussions amongst its members, academics, standard setters, policymakers, governments, international organisations and the public, with the objective of educating and developing understanding about the unique and important role of insurance in economies and for societies.

One of the current research topics of The Geneva Association is extreme events and climate risk. As part of this the Association conducts research that promotes the role of insurance in mitigating the societal impact of weather-related extreme events and climate risk and engages in high-level dialogue with leading policy influencers - including the World

Bank, the OECD and the UN - to define the role insurance can play in public-private partnerships that mitigate disaster risk and help a speedy recovery after an extreme event.

In 2017, Charles Philipps, MS Amlin's Chief Executive, attended the 44th Annual General Assembly of The Geneva Association in San Francisco. The event brought together global decision makers in insurance to discuss the key economic and social challenges facing the industry and the world, and how insurers can actively contribute practical solutions.

Evidence also applies to principle(s): 2.1, 3.2

Source: MS Amlin

The Lloyd's market / MS Amlin / Promoting alternatives to fossil fuel motoring through Formula E

MS Amlin has supported Formula E since 2014. We are the only insurer to sponsor a racing team in the FIA Formula E Championship - MS Amlin Andretti - in what has become the most environmentally conscious alternative to traditional motor sport. Formula E delivers action in a more sustainable format than other types of motor racing, and develops technology that translates to road cars.

Our sponsorship of MS Amlin Andretti demonstrates our long-held belief that positive measures need to be implemented to address climate change and aims to highlight and promote the credible alternatives in fossil fuel free motorsport and zero emission motoring.

"MS Amlin has always focused on developing winning strategies using a combination of experience, expertise and data analysis - and this skill is equally applicable to insurance and motor-racing. We are serious about understanding risk and using data to propel our team and our strategic objectives forwards. We are willing to take an alternative stance and our relationship with the MS Amlin Andretti team typifies this."

- Geale Whyte, Head of Brand Engagement at MS Amlin

The FIA Formula E Championship's vision is "*to be the world's first fully-electric single-seater racing series, bringing electric vehicles to city centres using innovative technology, and discovering solutions for climate change to better the environment we live in."*

And through the Formula E Championship, Formula E *"aims to accelerate innovation in electric vehicle technology, stimulate governments to develop infrastructure and showcase how electric vehicles will revolutionise everyday transportation."* Demonstrating this vision, Formula E has a number of key differentiators over other types of motor sport:

- Energy: Powering the cars with a virtually zero emission and 100% renewable fuel, from revolutionary Formula E glycerine generators
- Tyres: The unique tyres are hybrids specially designed by Michelin, suitable for all weather conditions, last the entire race, and are all recycled at the end of the day
- Tracks: Formula E is the city street racing series, racing on temporary tracks in the hearts of cities around the world such as Mexico, Paris, Berlin, Montreal and New York
- Spectators: Formula E is bringing the race to fans in city centres to encourage the use of public transport. The sport also has a great online platform where fans can watch the race live and in 360°. Formula E shows electric cars as exciting and desirable which helps influence the buying trends of current and future car owners towards low emission vehicles
- Calendar: The race map has been designed to have a cluster approach region by region to optimise freight movements
- Cities: The races are in iconic cities many of which have issues with air pollution e.g. Beijing. The cities hosting the races do so to help encourage their people to adopt cleaner transportation systems to help tackle the air pollution problems they face.

Formula E is also changing the mind-set of Original Equipment Manufacturers (OEMs) within the car industry. Renault, Citroen, BMW, Audi, and Jaguar are but a few manufacturers already taking an active role within Formula E, as well as reviewing their wider portfolio of manufacturing within everyday transport and motor racing to introduce electric and sustainable components. Volvo recently announced that they will *"cease manufacturing combustion engine-only vehicles altogether by 2019",* showing that key players see electric and sustainable technology as the future.

Read more about these views in a company news article on the public facing website.

Evidence also applies to principle(s): 1.4, 3.4, 5.4

Source: MS Amlin

The Lloyd's market / QBE European Operations / Promoting and engaging in debate

The QBE Group Chief Executive Officer, John Neal, published an article dealing with climate change on LinkedIn in 2016, which recognises climate change and the risks linked to it, and discusses the impact and management of it. The article also discusses the role of insurers in response to climate change, highlighting how insurers can support their clients through research and risk management, but also assisting with the transition to a low carbon economy by working with the renewable energy sector, for example.

In his article, John Neal calls for further collaboration, given the magnitude of climate change, for example through initiatives such as the United Nations Economic Programme Finance Initiative: Principles for Sustainable Insurance.

Evidence also applies to principle(s): 2.1

Source: QBE European Operations

The Lloyd's market / RenaissanceRe Syndicate Management Ltd / Risk Sciences Foundation

RenaissanceRe have nominated Stephen Weinstein, SVP Group General Counsel, to participate on the ClimateWise Insurance Advisory Council. Stephen serves as RenaissanceRe's Chief Legal Officer, with responsibility for legal, regulatory, government affairs and compliance matters on a global basis. Stephen's participation as a representative for RenaissanceRe on the ClimateWise Insurance Advisory Council, involves attendance at formal meetings, plus additional engagement on an ad hoc basis when necessary or relevant.

Stephen also currently serves as Chairman of RenaissanceRe's Risk Sciences Foundation, which was created to support advanced scientific research in natural catastrophes, the development of risk mitigation and adaptive techniques to safeguard communities, efforts that reduce the economic turmoil following disasters, and organizations that preserve coastal and other risk-exposed habitats.

The Foundation has been more primarily focussed on climate-related risk in 2016. In June 2016 RenaissanceRe sponsored an event at the New York Stock Exchange to discuss mitigation efforts and lessons learned following Superstorm Sandy. The event, the 'New York Recovery and Resilience Leadership Forum', was attended by more than 150 leading scientific, environmental, policy makers and insurance industry experts. Speakers at the event included the Premier of Bermuda, the President of the NAIC and also the CEO of the National Wildlife Foundation. The forum focussed on efforts to promote resilience and "the role of the private sector in fostering adaptation and sound rebuilding".

As commented by Weinstein during the event, "closing the coverage gap between economic risk and private market protection is an industry imperative that requires a coordinated effort between law-makers, insurers, reinsurers, academics, scientists and private citizens alike", and RenaissanceRe through the foundation continues to promote education, preparation, adaptation, and mitigation of catastrophic risks.

Evidence also applies to principle(s): 2.1, 6.1

Source: RenaissanceRe Syndicate Management Limited

The Lloyd's market / Tokio Marine Kiln / Insurance Advisory Council

TMK is represented on the ClimateWise Insurance Advisory Council. In conjunction with the University of Cambridge, the Council will launch the research on 'Transition Risk Project' this year and is evaluating the feasibility of another research piece on 'Physical Risk'. The Transition Risk Project involves undertaking compelling and multi-disciplinary research to demonstrate materiality to determine the financial performance of infrastructure over a relevant time period. This will inform investment strategies and thinking by supervisory organisation to ensure appropriate risk management steps are taken.

Evidence also applies to principle(s): 1.1, 1.2, 2.1, 3.1, 4.3

Source: Tokio Marine Kiln

3 Support climate awareness amongst our customers

3.1 Inform our customers of climate risk and provide support and tools so that they can assess their own levels of risk.

The Corporation of Lloyd's / Hurricane season information

In past reporting the Corporation of Lloyd's has highlighted research studies that include 'Coastal communities and climate change', that have investigate the impact of sea level rises, the effect of wind speed on storm surges and changes in land use on a number of properties or areas.

As part of the work towards informing Lloyd's market customers of climate related risks, the Corporation of Lloyd's publishes an annual page of information for those who may live or work in areas at risk of hurricanes that includes details on regional forecasts, three guideline thoughts for considering risk and a link to the policyholder enquiry form to assist with understanding and any claims:

Understand your risk, devise a plan and execute

- *Assess your vulnerabilities and understand what you will need to mitigate your risks. It is important to evaluate your personal property and safety, as well as business assets.*
- *Consult with your broker to make sure you have the appropriate risk management solutions in place. A broker can help ensure you're covered for relevant perils (e.g. wind, flood) and that your policy addresses all relevant risks you may face such as property damage and business interruption.*
- *Be prepared to execute. Understand your policy and procedures so that you're ready and able to make a claim in the event you suffer a loss.*

The information has been shared on the Corporation of Lloyd's twitter account.

The Lloyd's market has a long history of providing insurance protection to individuals and businesses and helping communities get back on their feet after a storm. In October 2012, Superstorm Sandy struck the Caribbean and the east coast of the United States, ultimately becoming the second most costly hurricane in US history. More than $2.6 billion has been paid out in Superstorm Sandy claims, the bulk of which spanned property, marine, casualty, energy, accident and health, as well as other specialty claims.

Evidence also applies to principle(s): 1.1, 1.2, 3.1

Source: The Corporation of Lloyd's

The Corporation of Lloyd's / Worldwide Programmes – the Global Development Centre

In 2015-16 reporting the Corporation of Lloyd's provided evidence on the Lloyd's Global Development Centre (LGDC). The Centre designs, develops, co-ordinates and delivers programmes of educational and networking events that promote Lloyd's as the world's specialist insurance market, and communicate Lloyd's strategic priorities. GDC

Programmes are intended to educate participants about the key role that Lloyd's plays in global insurance and reinsurance. They also showcase the expertise and innovative thinking to be found in the market.

The LGDC actively engages and co-ordinates with the Lloyd's market Association (LMA), London & International Insurance Brokers' Association (LIIBA) and their members to create customised programmes to meet the requirements of specific audiences and showcase Lloyd's and the London market.

In 2016 the Corporation of Lloyd's welcomed 394 participants from 49 different countries/territories to learn how the Lloyd's market works and to receive presentations from market brokers, underwriters and experts across a wide range of cases of business including: aviation, cyber, and marine classes of business, and innovative products.

One example of a presentation programme delivered during the reporting period was the Spring Worldwide Programme, held in April 2017 – one of the two annual flagship programmes. The programme was themed around "Climate risk – opportunities for (re)insurance", and was comprised of a variety of presentations, box visits and networking opportunities that were designed to give attendees the chance to make new connections as well as develop relationships with fellow delegates from around the globe on the topic.

The following examples are a small selection of sessions where the topic of climate change and insurance was covered in presentations to offer attendees an overview of some of the thought leadership work the Corporation of Lloyd's is involved in relating to the topic:

1. 24/01/2017 British Insurance Brokers' Association – brokers
2. 15/02/2017 Airmic, Risk managers association – risk managers
3. 14/03/2017 Managing General Agents' Association – wholesale insurance professionals
4. 27/04/2017 Federation of European Risk Management Associations – risk managers
5. 08/05/2017 Global Development Centre - Spring Worldwide – all
6. 30/05/2017 Insurance Management Associate Programme, Singapore College of Insurance – insurers
7. 15/06/2017 Brokerslink – brokers
8. 30/06/2017 RIMS Risk Management Academy – risk managers

Forward planning

In the next reporting cycle the Corporation of Lloyd's aims to deliver two 'Worldwide' programmes, one in October and one in April 2018, for senior decision makers in the insurance industry. These presentations are expected to continue to talk about the Corporation of Lloyd's climate change research, and the ClimateWise initiative as part of ongoing engagement in this area.

Evidence also applies to principle(s): 1.1, 1.3, 1.4, 2.1, 2.2, 3.1

Source: The Corporation of Lloyd's

The Lloyd's market / ArgoGlobal / Promote customer awareness

Argo Group intends to continues to take advantage of opportunities for communicating about climate change issues and initiatives with its stakeholders including brokers, customers, suppliers and other insurance professionals through its employees' active involvement in industry-wide initiatives such as those sponsored by the Risk Management and Insurance Society.

Evidence also applies to principle(s): 1.1, 2.2, 5.4

Source: ArgoGlobal: Syndicates 1200 and 1910

The Lloyd's market / Chubb / Chubb environmental risk products and services

Chubb remains committed to developing insurance products and risk management services that facilitate market-based solutions to current and pending environmental and climate-related issues. Our products and services, which fall primarily into the areas of Environmental Risk, Renewable Energy and "Green" initiatives, touch on virtually all lines of coverage worldwide. The full range of environmental and sustainability property and casualty products and services include:

- Carbon Capture and Storage (CSS) Insurance
- Emissions Reduction Project Insurance
- Environmental Risk Products (including environmental Professional Indemnity, Premises Contractors, Tank Safe, Offshore, Construction, Healthcare, Transportation & Business Interruption)
- Global Weather Insurance
- Green Property Insurance
- Political Risk and Trade Credit
- Renewable Energy Construction, Technical Lines, Energy and Marine Insurance.

Green initiatives

The renewable energy sector remains another major product area for Chubb, particularly in light of the increased global attention on climate change.

These projects take many different forms: biomass/biofuel, biogas, energy from waste, fuel cell, as well as solar, wind and hydro energy. Chubb addresses risks that occur in the two main phases of a typical renewable energy project – construction and operation. Construction risks range from delay in start-up to public or employer liability, whereas operation risks range from business interruption to premises pollution.

Chubb provides Cleantech insurance solutions:

Chubb's Cleantech business sits within the Industry Practice team, an area of our business that also Technology, Life Sciences, and Entertainment.

Cleantech provides bespoke insurance solutions to companies that are creating new technology and driving innovation. This global business within Chubb has dedicated underwriters, risk engineers and claims examiners who specialise in handling clean technology clients.

Cleantech clients face differing exposures through the development, or lifecycle, of their business. Chubb's bespoke insurance solutions cover companies as they move from start-up, including research and development, to pilot projects to commercialisation. The exposures faced by these clients stem from complex supply chains, the globalisation of their product, intellectual property rights and environmental liability. Our Risk Engineers are able to provide clients with risk management advice in all of these areas.

Any company involved in the following activities would fall within our Cleantech business:

- Deriving power from renewable sources
- Creating energy efficiency
- Addressing the scarcity of natural resources

Chubb has joined Cleantech Associations and sponsored European events to enable direct access to the local Cleantech ecosystem. Such engagement enhances product development because we can translate our understanding of client exposures into new, bespoke coverage. This approach ensures that our insurance solutions tailored for this fast-paced, innovative segment remain relevant.

We have entered into the following associations and sponsorships;

- The Cleantech Group – Sponsorship of the European Forum 2017 in Helsinki, Finland
- Cleantech Scandinavia – Sponsorship of the Nordic Cleantech 2017

Bio gas and solar package

In July 2016, we launched our new package policy designed for the Biogas and Solar industries. This product is a seamless package solution which covers the project from construction through to operation, including Environmental Liability.

Chubb online quoting platform for environmental liability risks

The ongoing Chubb Online Environmental Liability product is designed to offer broad, flexible and affordable protection for environmental risks arising out of a client's entire business operations, whether undertaken at their own premises or at third-party locations.

Chubb launches renewable energy environmental protection in the UK and Ireland

The renewable energy sector continues to be another major product area for Chubb, particularly in light of the increased global attention on climate change. The desire to develop clean, efficient and alternative sources of energy is leading to the planning and construction of renewable energy projects around the world.

Chubb Renewable Energy Environmental Protection covers the full spectrum of environmental risks faced by renewable energy companies, providing seamless coverage, from the start of construction of renewable energy plants through to their operation

Loss mitigation and crisis management costs

The market-leading product features of this cover are supported by a team of highly qualified environmental scientists and engineers in addition to crisis management support for all risks, ensuring that companies are best equipped to respond when they suffer a loss -- and minimise its impact on their business.

"While renewable energy and environmental risks have been in the news for many years now, many brokers and their clients in the sector are still unaware of the environmental risk exposures that they face. With increasing regulation and third-party costs, they could potentially face expensive and damaging claims. What they will get with Chubb's Renewable Energy Environmental Protection is the peace of mind that they have comprehensive, market-leading cover and benefit from the experience of our specialist underwriting and claims teams."

- Emma Bartolo, Environmental Risk Manager in the UK and Ireland, Chubb

Energy and Marine Insurance

The continuing use of energy and marine insurance products and services allows for the direct or indirect reduction of GHG emissions in many instances.

Evidence also applies to principle(s): 1.1, 1.3, 3.1, 3.2, 3.3, 3.4

Source: Chubb

The Lloyd’s market / Chubb / Value added Engineering Services

Chubb Environmental Risk continues to offer insureds a built-in opportunity to enhance existing risk management programmes with access to a global network of best-in-class engineering consultants. Chubb call upon these same industry experts to conduct the majority of our environmental due diligence work.

Consulting Services

Chubb clients continue to receive a full complement of traditional environmental consulting services, including industrial hygiene assessments; regulated and hazardous materials management and remediation oversight; environmental due diligence for the real estate and finance markets; and Leadership in Energy and Environmental Design (LEED) and regulatory compliance consultation.

Accredited compliance staff remain available to augment clients’ environmental and safety personnel at their locations as necessary to meet their health, safety and the environment (HSE) objectives.

Evidence also applies to principle(s): 1.3, 3.1, 3.2, 3.3, 3.4

Source: Chubb

The Lloyd’s market / Chubb / Chubb Crisis Management

The potential physical risk effects of climate change – the frequency and severity of natural catastrophes, particularly those involving high winds and flooding – present potential positive financial implications for Chubb. Clients are provided with insurance protection from the impact of weather events that may be more frequent or severe due to climate change.

Chubb attaches crisis management services to its European environmental risk insurance products

Chubb partners with an assistance company continues to provide its clients with specialised crisis readiness and response services that will allow them to streamline their communications and processes, have access to critical specialist resources when facing a serious environmental incident and, as a result, to help preserve their reputation and bottom line. Chubb offers their clients and brokers comprehensive insurance cover combined with the reassurance of access to critical services that can help them navigate the immediate aftermath of a serious environmental incident.

Evidence also applies to principle(s): 1.3, 3.2, 3.3, 3.4

Source: Chubb

The Lloyd’s market / Chubb / Chubb ALERT application

Another innovative product that continues to be provided is Chubb Environmental Risk’s Chubb ALERT application, which facilitates more rapid dispatching of incident-response contractors as well as real-time monitoring of clean-up costs. This programme has demonstrated it can both reduce environmental damage and lower claim costs by as much as 20% to 25%.

Evidence also applies to principle(s): 1.4, 3.2, 3.3, 3.4

Source: Chubb

The Lloyd’s market / Chubb / Insurance Business magazine Master Class

In June 2017, Insurance Business Magazine hosted a conference dubbed “The Environmental Liability and Risk Masterclass” in London. The conference was held to engage the UK’s top environmental insurance firms in debate and raise awareness of new regulations and risks facing the industry.

Chubb played a large role in the conference, as a gold sponsor as well as key personnel to provide talks on key subjects. Karl Russek, Senior Vice President, Environmental Risk took the opportunity to educate attendees on what environmental liability insurance is available in the UK and globally. Also discussed were emerging risks clients may face, including new contaminants and cyber exposure.

As well as what's available, Chubb, in collaboration with other insurers, gave a panel talk on identifying gaps in mainstream coverage. This was designed to educate brokers on how to identify their client's needs for specialised environmental insurance policies in the event their general liability policy is not adequate coverage.

For more information see the Insurance Business Master Class event page.

Evidence also applies to principle(s): 2.2, 3.4

Source: Chubb

The Lloyd's market / Chubb / Chubb 'Thought Leadership' publications

Chubb produces a number of publications labelled 'Thought Leadership' throughout the year that are distributed to key clients that are from industries that have been identified as likely to have gaps in their insurance coverage. This can be done in many forms, for example papers are given to key brokers, published in industry magazines or Chubb's own press release page.

Many small businesses are likely to have gaps in their environmental cover such as agriculture wineries breweries and cold storage. Chubb believes this is simply due a lack of awareness that there are environmental risks associated with their respective industries or practices. Chubb hopes that by producing these reports and articles that their clients will be more informed as to the risks and will take steps to mitigate them.

Evidence also applies to principle(s): 1.1, 1.2, 1.4, 2.2, 3.4

Source: Chubb

The Lloyd's market / MS Amlin / Raising awareness and protecting customers against weather-related events

As a major global (re)insurer, MS Amlin is directly engaged with environmental issues, particularly climate change, through our focus on protecting clients against weather-related events. We work closely with our customers to provide information, tools and support to help them do this. Some examples of how we do this are provided below.

MS Amlin subscribes to the services of Weathernet, a UK based company that specialises in weather and climate information. Weathernet allows MS Amlin to get an early indication of when a storm will potentially hit. As soon as such an indication is received, a task force is set up to identify potential customer impact using our mapping tools. This was set up with the anticipation of a bad winter due to the El Niño effect.

The task force team ensures we have the optimal response for our customers. They work with brokers and coverholders to identify customers who could be affected. They then ensure that loss funds, loss adjusters and MS Amlin employees are available to deliver the right support to our customers. Examples of this include accelerated claims payments, investment in flood defences and getting people on the ground quickly to provide support and assess claims.

To help make customers aware of risks over the winter months and minimise the damages, last year MS Amlin issued a communication to all of its UK household brokers. This included a Guide for Householders on how to best prepare their property for winter. This guide was well received and thankfully the 2016 winter season was relatively uneventful for MS Amlin's UK client base. However we will continue to build on the work completed in 2016 and further refine our approach and communications ahead of the 2017 winter season.

Additionally in 2017, MS Amlin's Property and Casualty Risk Engineering team has launched the MS Amlin Flood Toolkit. This online toolkit provides access to a practical approach to help customers complete flood risk assessments and generate an action plan that should reduce the likelihood and/or severity of damage from a flood.

The Flood Toolkit incorporates the latest thinking on flood resilience, emergency planning and flood risk assessment and has been developed in conjunction with leading industry experts. It comprises a number of guides and templates:

- An easy to use flood risk assessment template that will generate a bespoke action plan
- General advice on pre-flood preparation
- Preparation of a Flood Emergency Response Plan
- Guidance on how to physically improve a building's resistance to flooding
- How to select proficient contractors and products when considering flood protection measures
- Preparing for a claim: what information can be gathered in advance to ease the claims process
- How to make an effective recovery from a flood

Making properties more resilient to flooding is a vital part of the toolkit and is hugely beneficial to businesses – too often people are unaware of where to go for advice, the products that exist and the benefits that they can provide. The aim of the Flood Toolkit is to empower clients to be better informed and able to assess and address the potential impact that flooding could have on their business.

Evidence also applies to principle(s): 1.1, 1.2, 3.2, 6.1.

Source: MS Amlin

The Lloyd's market / Navigators Underwriting Agency Limited / Customer segmentation within ClimateWise

Navigators has previously advocated a separation of focus within ClimateWise of insurance entities that deal primarily with personal lines insurance (homeowners, motor, travel, etc.) and those dealing with commercial lines insurance (industrial, oil and gas, power plants, marine) so that relevant and related focus and actions can be evidenced and reported. As a Marine and Energy specialist insurer Navigators sits within the second group.

It is felt that this would also be beneficial when demonstrating and reporting on progress towards meeting ClimateWise principles, and below we provide an update against the business lines described in our previous submission.

Solon Underwriting

Navigators continues a commercial arrangement with Solon Underwriting Limited, where through our Lloyds Syndicate 1221, we underwrite coverage provided by Solon on an All Risks basis for Recycling and Waste Facilities in the European Union.

Limits of coverage provided makes this product ideally suited to small privately run businesses, supporting waste recycling initiatives in the member states, providing a valued risk transfer mechanism for this growing business sector.

Opportunities are being explored with industry bodies such as the CWIM (Chartered Institution for Wastes Management), not only for commercial benefit, but also to share good risk engineering practice with regards to loss prevention and mitigation in this rapidly growing sector.

Upstream Energy

Navigators maintains a position of leadership to provide financial security to Upstream operations and construction projects in the light of greater regulatory requirements on a worldwide basis to provide a higher degree of environmental protection in oil/gas well design, well drilling and production operations and well/platform decommissioning.

Whilst oil prices have stabilized, confidence has been slow to return to this industry sector, and Operators and contractors have been forced to look critically at operating and capital costs to maintain financial viability, which continues to place pressure on new conventional oil exploration opportunities.

Navigators is providing risk transfer solutions by way of insurance coverage for clients active in the exploration of alternative hydrocarbon energy forms such as gas hydrates, and carbon sequestration projects.

Navigators also provides property damage coverage for offshore windfarms, including projects making use of HVDC (high voltage direct current), a more efficient way to transmit electrical power.

In the last reporting period, Navigators has continued to offer support for innovative renewable energy projects and environmentally focused research. Such examples include technical support for potential insurance coverage for a tidal power platform project and extended coverage provision and associated risk reduction for the on-going operational activities for an ocean research vessel engaged in a range of projects looking at climate change, deep life, planetary dynamics and geohazards.

Downstream Energy

Environmental compliance with regard to airborne, aqueous and solid emissions and that of fuels and product specifications from the refinery and petrochemical sector continues to play a major role of the operational needs of our clients in this sector. In this reporting period we continue to see this with producers in developing countries who in turn have tightened their own environmental legislation, or who seek to export fuels into markets such as Europe and North America.

Provision of All Risks insurance coverage to the Biodiesel sector has largely remained static in the last reporting period.

Navigators continue to play a Contract Leader role in an Underwriting Facility arrangement to specifically support the US Midstream sector, which amongst others are increasing export of natural gas liquids (NGLs), and specifically ethane, much in demand on a global basis to improve the economic and environmental viability of petrochemical and power production operations.

Power Generation

Navigators continue to support operations where cleaner feedstocks such as biomass and gas are being introduced to meet regional emissions targets, especially with regard to management of carbon dioxide.

Earlier this year Navigators gave technical advice and indicative lead terms for insurance in respect of an experimental unmanned floating marine structure with a tidal energy generator attached beneath the hull. The project involves the builder's risk in Spain, towing to the chosen site of operation in UK and an 18 months operational/trial phase when the equipment will be tested and the results monitored and analysed. The purpose of the project is to investigate the feasibility of larger scale electricity generation where the primary source of energy is the force of tidal water.

Construction Projects

In the last report period Navigators has chosen to withdraw from the onshore Energy & Power construction insurance market. Whilst we continue to support projects insured prior to mid- 2016, we are not writing any new business in this area.

Environmental Liability

Navigators has in this period grown its wide coverage international Environmental Liability product, providing financial security for waste producers and waste management companies alike, with continued business interest and demand for such products.

Evidence also applies to principle(s): 1.4, 3.2, 3.3, 3.4

Source: Navigators Underwriting Agency Limited (Navigators)/NavTech

The Lloyd's market / Tokio Marine Kiln / Inform our clients on risk management

Tokio Marine Kiln participates in various industry conferences associated with risk management. One recent example is the annual event hosted by the Association of Risk Managers in France (AMRAE). This annual conference has provided TMK with the opportunity to engage with the local participants on emerging risks including climate change.

In certain product areas where TMK has leading expertise, we continue to work with our customers on risk management. Renewable energy is one key area where we have access to extensive technical data and the risk management best practices and key lessons learnt from new technologies are shared in conferences / workshops for customers. UAS is another area where TMK has partnered with Resource UAS on training and risk management of RPAS.

Evidence also applies to principle(s): 1.1, 1.2, 1.4, 2.1, 2.2

Source: Tokio Marine Kiln

3.2 Encourage our customers to adapt to climate change and reduce their greenhouse gas emissions through products and services.

The Lloyd's market / Chubb / Working with our customers

Chubb encourages its customers to adapt to climate change and reduce their greenhouse gas emissions through products and services in several ways. For example, clients that mitigate risk — through retrofitting buildings to comply with updated building codes, installation of hurricane shutters and relocating exposures away from coastlines and flood plains — will have lower insurance costs than those that do not. Chubb also makes use of terms and conditions, such as sub-limits, coverage restrictions and deductibles, to ensure appropriate risk selection and potentially reward certain policyholder behaviour.

Chubb also plays a role in mitigating clients' supply chain and global operations risks through its risk engineering services. These risk engineering capabilities help organisations identify climate-related exposures and manage environmental challenges caused by climate change.

The company offers "green building" consulting services and a property policy that enables rebuilding to greener standards after a loss. In addition, Chubb offers wildfire defence services as well as property conservation training to clients. Lastly, infrared camera scans of clients' homes in order to identify areas for improved energy efficiency as well as consulting services that aid in the installation of renewable energy sources are offered to clients.

Evidence also applies to principle(s): 1.3, 1.4, 2.2, 3.1, 3.4

Source: Chubb

The Lloyd's market / Chubb / Chubb Plants 32,000 trees in tenth year of American Forests' Sponsorship

Chubb has announced its renewed support of American Forests' Global ReLeaf® programme with the selection of national and international forest restoration projects. In 2017 Chubb sponsored the planting of 32,000 trees, representing one for each environmental insurance policy written globally by Chubb in 2016. Since 2007, Chubb has sponsored the planting of more than 144,000 trees. Chubb's support of the American Forests programme complements the company's environmental programme goals, which include the promotion of a healthy and sustainable environment through corporate philanthropy.

"We are honored to celebrate our tenth year supporting American Forests' efforts to transform, rehabilitate and protect our precious global forests. Chubb and its employees remain committed to helping ensure a healthy environment and a balance between sustainable development and preservation."

"In acknowledgement of Earth Day, I am pleased to announce that Chubb Environmental has continued its partnership with American Forests in donating one tree for every insurance policy bound for an environmental client. We have supported American Forests since 2007 and throughout this time span have planted 112,240 trees around the world. This year, American Forests will plant approximately 2.7 million trees in 67 domestic and global reforestation projects."

- Craig Richardson, Executive Vice President, Chubb Environmental

For 2017, our Chubb Environmental Risk contribution includes 25,500 trees distributed among the following tree planting projects:

Chubb's contribution will support the following international planting projects with American Forests:

- Mississippi (Biloxi and Black Creek): In cooperation with local partners, American Forests will restore the longleaf pine habitat, a 200-acre area selected because of its diverse wildlife, featuring hundreds of unique plant and animal species. This is the first year of a five-year project, and will focus on woodpecker cavity construction, the hatching and raising of gopher tortoise eggs, and the reforestation of longleaf pine ecosystems with 100,000 seedlings.
- California (High Sierra Ranger District, Sierra National Forest): The project will span 600 acres and will plant 128,500 seedlings, a mix of ponderosa pine, Jeffrey pine, sugar pine, white fir and red fir. This forest system is reliant on large, healthy forests to regulate the flow of water throughout the year, and this project will help to make a sizeable contribution to watershed restoration in the Sierra Nevada range.
- Kentucky (Daniel Boone National Forest): Restoring these areas to their former forested balance is complex work. Invasive species must be removed, compacted soils must be ripped, and seedlings must be grown and then planted. In partnership with the U.S. Forest Service, 11,000 trees will be planted across 16 acres including 14 different tree species.
- Texas (Lower Rio Grande National Wildlife Refuge): American Forests has been working in the Lower Rio Grande Valley since 1997, and has since planted more than two million trees. This work is vital to safeguarding the many unique area species, including the ocelot, a rare cat that numbers fewer than 50 surviving in the U.S. today.
- West Virginia (Mower Tract, Monongahela National Forest): From 1880 to 1940 almost the entire Mower Tract area was clear-cut and what wasn't logged suffered from extreme wildfires. This project will jump-start the regrowth of an area that will eventually restore itself after a few hundred years. In 2017, 75,000 trees will be planted across 1,126 acres.
- Wyoming (Wind River District, Shoshone National Forest): In cooperation with the U.S. Forest Service, more than 40,000 whitebark pines will be planted in Shoshone National Forest, a candidate to be listed under the Endangered Species Act. This is part of the Greater Yellowstone Ecosystem; this 163-acre planting will be year three of a decade-long reforestation project in the region affected by wild fire, blister rust and pine beetles.
- Panama (Pacific Coast of Panama): The Azuero Peninsula was once verdantly-forested Central American foothills. Although it has been inhabited by humans for more than 12,000 years, it was not until recently that clear-cutting for cattle ranching made a big impact upon the landscape. Now less than 7 percent of the land is forested, and the local wildlife – like the Azuero spider monkey – has suffered. American Forests is working with local partners in Panama to plant 4,500 trees in a biological corridor stretching 75 miles and spanning more than 60,000 acres.
- Indonesia (Batang Toru Forest): The Batang Toru Forest in North Sumatra, Indonesia, is internationally recognized as critical habitat for the endangered orangutan, and the forest has been steadily encroached upon by a number of harmful factors such as urbanization and illegal logging. American Forests is working with local partners to plant 28,500 trees across 114 acres in an effort to address multiple environmental concerns while also engaging and educating local communities.

American Forests (founded in 1875) protects and restores urban and rural forests, has served as a catalyst for many of the most important milestones in the conservation movement, including the founding of the U.S. Forest Service, the national forest and national park systems and thousands of forest ecosystem restoration projects and public education efforts. In the past two decades, American Forests has planted more than 50 million trees in forests across the United States and in nearly 50 countries, resulting in cleaner air and drinking water, restored habitat for wildlife and fish, and the removal of millions of tons of carbon dioxide from the atmosphere.

More information can be found in the 10 year anniversary news story in the Chubb news section. Further information on American Forests can be found on their website.

Evidence also applies to principle(s): 5.1, 5.3, 5.4

Source: Chubb

The Lloyd's market / Tokio Marine Kiln / Encouraging our customers to adapt to climate change and reduce gas emissions

The TM Group is promoting the development of products and services that contribute to dealing with climate change, protecting biodiversity, reducing natural disaster damage and developing local communities. Under the TM Group's 'Green Gift' project, when a customer chooses web based insurance contracts on the website, rather than a paper based contract, the company donates funds corresponding to a portion of the value of the reduction in paper used to support mangrove planting.

Further information can be found in the 2016 Corporate Social Responsibility report.

Evidence also applies to principle(s): 1.1, 1.2, 1.4, 2.1, 2.2, 3.3, 4.3

Source: Tokio Marine Kiln

3.3 Seek to increase the proportion of non-life claims that are settled in a sustainable manner.

The Lloyd's market / Hiscox / An industry approach to sustainable claims

An industry approach to sustainable claims ClimateWise has worked with the University of Cambridge Institute for Sustainability Leadership (CISL) to develop sustainable claims management guidance. The aim was to recommend how the insurance industry as a whole could increase the sustainability of insurance claims. The resultant report focuses on domestic property claims, taking into account the lessons learnt from similar initiatives within the motor and commercial property sectors.

It concluded that a sustainable claims process requires the following:

- identification of priority areas to reduce environmental impact
- a sustainable claims management plan to reduce environmental impacts communication, appropriate to your business, with contractors, suppliers and customers on opportunities to reduce environmental impact
- standardised annual reporting on progress

In attempting to implement the above guidance, Hiscox recognises that it is difficult to have direct influence on repair practices as they are managed indirectly through a network of contractors appointed by loss adjusters. However, we recognise that sustainable claims management is an area where we can make a significant difference. It is subject to an internal review and a new initiative commencing in 2017.

Reducing the impact of claims assessment

From a claims perspective, Hiscox partners share our desire to minimise their environmental impacts. For example, Hiscox claims are actively working with loss adjusters to keep travel to a minimum and to encourage use of public transport, mirroring Hiscox staff travel practices, to reduce the environmental impacts of their travel.

Hiscox Claims making a real difference

As one example, all of our panel UK law firms, bar one, are now members of the Legal Sector Alliance, a movement of law firms committed to working collaboratively to take on action on climate change by reducing their carbon footprint – and pushing for environmentally sustainable practises. They commit to:

- measure, manage and reduce the impact of operations
- work with external stakeholders to reduce indirect impact
- integrate awareness of climate change across the business
- advise clients on the opportunities and obligations arising from and under climate change law

- work collaboratively to engage in the public debate on climate change and to develop, apply and promote best practice across the sector
- report on progress and be accountable
- adopt and pursue a challenging emissions reduction target appropriate for the own organisation and needs, achievement of which will deliver over stated time periods a meaningful and progressive reduction in emissions.

We also expect firms we use to think about travel and, where feasible, to use hybrid hire cars or cars with low emissions. Many now use hybrid car companies. On the property side we have reduced reporting by 70% and rolled out CMS to all of our property adjusters, reducing the need for paper files and correspondence.

Further information on Hiscox work in this area can be found in our independent submission.

Evidence also applies to principle(s): 2.1, 2.2, 4.1, 4.2

Source: Hiscox

The Lloyd’s market / Tokio Marine Kiln / Sustainable claims settlement

The 2016 Canadian wildfires exposed a significant number of TMK policyholders to losses. TMK sent staff from their claims team to Canada to assist coverholders in processing claims.

The purpose of this was twofold: to increase the speed of claims paying, but also to provide reassurance to insureds and coverholders that TMK would be there to assist and aim to promptly pay claims to those affected by the natural disaster.

Evidence also applies to principle(s): 1.4, 3.1, 3.2, 4.3, 5.2, 5.4

Source: Tokio Marine Kiln

3.4 Through our products and services assist markets with low insurance penetration to understand and respond to climate change.

The Corporation of Lloyd’s / Disaster risk activities

In 2015-16 reporting, information was presented on a group of Lloyd’s market syndicates who joined forces to develop new solutions to help developing economies tackle underinsurance and improve their resilience against the economic impact of natural catastrophes. The group issued an open invitation to work with international organisations including but not limited to the World Bank and the British government’s Department for International Development. It aimed to strengthen existing ties with several current global initiatives, such as the Insurance Development Forum described in principle 2.

The group planned to engage with governments, municipalities, and non-governmental organisations, in addition to their existing client base.

In line with the Corporate Social Responsibility strategic priority covering this area, activities in this reporting year have taken place across a range of departments. These include:

1. Insurance Development Forum: During this reporting cycle Inga Beale DBE, Chief Executive Officer, took part in two steering committee meetings in September 2016 and April 2017, and in April the chair of the initiative comments to members that collectively over 200 industry, public and private participants who have contributed an estimated 5,000 hours over the12 month period leading up to the April meeting. Staff from across the Corporation of Lloyd’s aim to continue to be involved in supporting this work stream to support the Forum aims to:
   - Incorporate insurance industry risk measurement know-how into existing governmental disaster risk reduction and resilience frameworks; and

- Build out a more sustainable and resilient global insurance market in a world facing growing natural disaster and climate risk.

2. Disaster risk facility at Lloyd's: A group of seven Lloyd's syndicates have committed capacity of US$400m towards solutions that address natural catastrophe risks in emerging and developing economies. Key to its effective deployment will be well designed risk sharing initiatives and the diversification of risk.

   Over the 2016-17 reporting year the group have held 10 working group meetings facilitated by the Corporation. Group members are also involved with running or contributing to several Insurance Development Forum working groups.

3. Lloyd's Tercentenary Research Foundation: The Foundation has been funding a two-year research project led by the University of California at Santa Cruz on the topic of 'The Role of Coastal Habitats in Managing Natural Hazards and Risk Reduction: A Multi-Disciplinary Approach Across Ecology, Economics and Engineering' that has been focused on delivering two stages of research findings.

   The first report from this project, *Coastal Wetlands and Flood Damage Reduction,* was released in October 2016. The report finds that during Hurricane Sandy alone, coastal wetlands likely prevented more than US$625 million in flood damages to properties and that marshes can reduce annual flood losses by more than 20% on average. The report illustrates the value of wetlands as natural defences using risk industry-based methods and tools. Further details can be found in the press release issued as part of the communications plan to raise awareness of the study.

   In June 2017, the Corporation hosted an event for the Lloyd's Tercentenary Research Foundation on the topic of "Financing Natural Infrastructure for Coastal Flood Damage Reduction", which was presented by Michael W. Beck and Siddarth Narayan, The Nature Conservancy. The first aim of the session was to socialise the work and the Foundation to the market. The second aim was for attendees to learn about the significant risk reduction role of natural infrastructure, how this role may be accounted for in industry risk models, and how investments in natural infrastructure can enhance natural wealth and social resilience.

   The second report *'Financing Natural Infrastructure for Coastal Flood Damage Reduction'* was launched at the event, and it aimed to review new and emerging funding opportunities for natural defenses. The report identifies potential barriers that prevent the broader funding of natural defenses, and looks to propose a framework that may assist with identify when and where there may be opportunities to finance natural infrastructure.

4. Lloyd's Charities Trust: The Trust continues to support RedR to deliver the Red Ready to Respond programme for the current three year cycle (April 2016 – March 2019). The aim of the programme is to increase the ability of over 2,000 individuals and organisations involved in humanitarian action to prepare for and respond to emergencies, especially in urban centres.

   As technology develops, it allows training to be delivered in a range of formats rather than a traditional face-to-face environment. This has enabled those working in the field to access professional development training course. The financial support provided by Lloyd's Charities Trust has enabled RedR to support a dedicated team to develop training programmes, including e-learning elements. The first urban training course was delivered completely online in April 2017.

5. SolarAid: Since the Corporation of Lloyd's partnership with SolarAid began in 2015, funding has helped distribute more than 3,400 solar lights in East Africa as part of regional activities. This has led to the following outcomes that were reported back to the Corporation by SolarAid during the 2016-17 reporting period on the activities outlined in 2015-16 reporting:

   - Over 14,000 people benefitting from clean, safe light
   - Over 3 million extra study hours of children
   - Over £430,000 saved by families no longer reliant on kerosene or candles
   - More than 6,800 people experiencing better health
   - Over 3,400 CO^2 emissions averted from the atmosphere
   - Safer homes with reduced risk of fine and burns

   SolarAid aim to establish a sustainable business model in the regions they operate in by creating a social enterprise, SunnyMoney, who sell lights via school networks and local enterprises. SolarAid believe this allows money to be reinvested back into their work, encourages job creation and ensures money stays in the local economy.

During the 2016-17 reporting year, the Corporation of Lloyd's renewed the partnership to supply lights to rural communities in Malawi and Zambia. SolarAid estimates that more than 3,000 solar lights will be distributed over the next year to communities that typically rely on kerosene lights.

The partnership with SolarAid is part of its long-term global corporate social responsibility strategy, which is implemented though offices around the world via the Lloyd's Together programme.

6. Build Change partnership: In October 2016 Lloyd's Charities Trust announced via a press release a three year donation of £100,000 per annum to Build Change to help families living in informal settlements in Colombia and the Philippines increase their resilience to natural disasters, such as typhoons and earthquakes, by enabling them to retrofit their existing homes. The following information was provided by Build Change:

   – *Building Climate and Earthquake Resilience in Informal Settlements in Metro Manila*

     This pre-disaster retrofit project was chosen as one of the eight winners out of 350 entries of OpenIDEO's Urban Resilience Challenge asking the question "How might urban slum communities become more resilient to the effects of climate change?"

     The Philippines ranks as the third most disaster-prone country in the world based on the 2015 World Risk Index and informal settlers account for 25% of Metro Manila's 20 million residents. This project targets families living in informal settlements in the City of Makati in houses that are substandard due to the poor quality of workmanship and materials.

     310 homes will be retrofitted through simple, easy-to-implement changes and the project aims to have a catalytic impact by putting people – homeowners, government officials, the local construction sector – at the centre of its approach in order to improve construction practices. The long-term goal is the improvement of 500,000 homes, which will protect 2.5 million people from the next earthquake or windstorm.

     Project Outputs:

     - *310 homes retrofitted*
     - *430 builders trained*
     - *930 jobs created*
     - *25 engineers trained*
     - *1,550 safer people*

   – *Reducing Seismic Risk in Informal Neighbourhoods in Medellin*

     Build Change will oversee the retrofitting of 650 houses in informal neighbourhoods in Medellin, while building the capacity of local stakeholders to expand earthquake prevention projects throughout the city. The long-term goal is to improve 100,000 homes which will protect half a million people from the next earthquake. The region is also vulnerable to hurricanes, which builds complexity in considering risk reduction.

     Due to reduced crime, improved transportation and improved quality of life, Medellin has undergone a transformation in recent years and there has been dramatic urbanization. The population growth has led to the densification of informal neighbourhoods with increased seismic risk, where homes have been built haphazardly without professional design or supervision and using poor-quality materials.

     There are an estimated 100,000 low-income families in Medellin living in vulnerable housing who tend to be uninformed about the seismic risk and unsafe construction practice. At the request of the City of Medellin, this new retrofitting project for existing housing is being implemented. The model will be developed, refined and disseminated throughout Colombia, focusing on additional cities poised for immediate growth, alongside other countries in the region with similar challenges and risk profiles.

     Project Outputs:

     - *650 homes retrofitted*
     - *650 builders trained*
     - *325 jobs created*

- *40 engineers trained*
- *3,250 safer people*

Individuals and companies in the Lloyd's market can get involved in the project in the following areas:

- *Contributing to risk assessments in seismically active emerging nations to identify highest risk communities*
- *Utilising GIS mapping to identify potential project sites*
- *Designing hazard trainings tailored to needs of specific countries or regions*
- *Partnering to improve financial access and micro insurance to incentivize structural strengthening*

As part of the communications around the partnership, on 15 February 2017, Build Change hosted a box at the Latin America Meet the Market event in Miami. The aim of this activity was to inform and engage attendees on the work, and to support the CSR KPI around raising awareness. The event welcomed over 300 brokers, coverholders and representatives from 17 managing agents that had travelled from all over the Latin American region to attend the event.

Further details can be found on the partner charity page for Build Change.

Evidence also applies to principle(s): 1.1, 1.3, 1.4, 2.1, 2.2, 3.1, 3.4, 5.1, 6.1

Source: The Corporation of Lloyd's

The Lloyd's market / ArgoGlobal / Assisting markets with low insurance penetration

ArgoGlobal will be participating in an initiative by a Rockefeller Foundation – World Bank Disaster Risk Finance and Insurance Program (DRFIP) partnership. The aims of this initiative are to explore innovative financial solutions against climate and disaster risks in Asia. Specifically this aims to offer parametric flood coverage to counties in Asia where the risk has increased due to climate change.

Evidence also applies to principle(s): 1.4, 2.2

Source: ArgoGlobal: Syndicates 1200 and 1910

The Lloyd's market / Chubb / Chubb environmental reporting

At Chubb, we recognise our responsibility to provide solutions that help clients manage environmental risks, to reduce our own environmental impact and to make meaningful contributions to environmental causes.

Annual Environmental Report:

The company produces an annual Environmental Report that outlines the full scope of our commitment and activities to address environmental concerns, including our environmental risk products and services, goals and initiatives to reduce greenhouse gas emissions in our own operations, and our philanthropy and volunteerism. See the full report here.

Recent milestones

Environmental Statement: The company's annual report, filed with the U.S. Securities and Exchange Commission, includes a third-party certified Environmental Statement on the company's GHG emissions program

CDP: The company reports its GHG emissions data and related activities to

CDP, an international, not-for-profit organization providing the only global system for companies and cities to measure, disclose, manage and share vital environmental information. In 2016, Chubb earned a score of A-.

Climate change is an important and serious issue for the global insurance industry because it is our business to provide security against many of the property-related risks posed by such change. With Chubb having operations in 54 countries, Chubb's business and operating models are exposed to the full impact of global climate change. At Chubb, we recognise that a changing climate affects everyone — our customers, employees, shareholders, business partners and the people who live and work in the communities we serve. Therefore, climate change is integrated into aspects of Chubb's short and long-term strategies.

The primary objective of Chubb's environmental programme is to measure, record and reduce greenhouse gas (GHG) emissions in the company's own operations. Chubb will continue to deploy the approaches it has used successfully to date, including installing energy-efficient lighting and equipment and more efficient use of office space.

Chubb's Corporate Environmental Programme is now in its tenth year. We continue to be at the forefront in addressing environmental issues and the implications of climate change for all areas of our business. We are proud of the progress we have made and are committed to taking further steps to make meaningful improvements in the environment.

The full Chubb Environmental Report 2016 can be viewed online.

In our operations, Chubb continue to focus on reducing our carbon footprint around the world. In September 2014, prior to ACE Limited's January 2016 acquisition of Chubb and adoption of the Chubb name, the company established a new companywide goal to reduce greenhouse gas (GHG) emissions by 10% per employee from 2012 to 2020. The commitment followed the successful achievement of the ACE's first emissions reduction goal, which was 8% per employee from 2006 to 2012. Through the end of 2015, ACE reduced its emissions per employee by 5% from a 2012 baseline; about halfway towards achieving the goal.

The new Chubb, now the world's largest publicly traded property and casualty insurer, is committed to reducing its overall environmental impact and plans to announce an updated GHG reduction goal for the combined company in 2017.

Philanthropy

The environment is a priority in our corporate philanthropy. Around the world, grants from Chubb's charitable foundation continues to help to preserve sensitive lands and habitats, finance "green-business" entrepreneurs and educate farmers on growing sustainable crops.

"Disaster Relief Matching Gifts - Chubb conducts fundraising campaigns that raise money to provide assistance and matches employees' donations in support of relief efforts in global disasters."

More information can be found in the philanthropy section of the Chubb website.

Evidence also applies to principle(s): 1.1, 5.1, 5.2, 5.3, 5.4, 6.1, 6.2

Source: Chubb

The Lloyd's market / Hiscox / Funding for disaster relief

Hiscox is supporting the industry approach to assisting the developing world through our membership of ClimateWise, Lloyd's and other relevant industry groups.

Hiscox is involved in the Lloyd's Disaster Risk Facility work. This initiative involves several syndicates providing a pot of capital for underinsurance, which currently stands at $400mn.

Related work by the Risk Modelling and Mapping Project (RMMP), a sub-group of the Insurance Development Forum (IDF), is focussing on understanding why there is currently limited collaboration across government, intergovernmental, academia and the insurance industry to work to close the insurance protection gap in developing countries.

Further information on Hiscox work in this area can be found in our independent submission.

Evidence also applies to principle(s): 1.1, 2.1, 2.2, 3.4

Source: Hiscox

The Lloyd's market / MS Amlin / MS Amlin joins Flood Re scheme and joins reinsurance panel

In 2017, MS Amlin became a member of the not-for-profit UK Government scheme, Flood Re. Flood Re is a flood reinsurance scheme introduced in 2016 to combat the long-standing issue of available and affordable flood insurance for homeowners. It delivers more affordable insurance for households who live in a flood risk area, by creating a central fund to which insurers participating can reinsure households in high risk.

MS Amlin was the first Lloyd's Syndicate to go live with Flood Re. The scheme is accessible to all MS Amlin brokers and coverholder partners, who are now actively offering policies that benefit from the Flood Re protection. The scheme has been well received by household brokers and clients as it allows MS Amlin to offer flood cover to homeowners that live in areas prone to flooding where it could previously prove difficult for them to obtain flood insurance.

Our reinsurance business unit based in Lloyd's and Bermuda have also subscribed to the proportional reinsurance contract protecting Flood Re, thereby providing it with wide bearing capacity.

Evidence also applies to principle(s): 1.2, 2.1, 2.2, 3.1.

Source: MS Amlin

The Lloyd's market / MS Amlin / Engaging with the market

MS Amlin underwrites catastrophe schemes and reinsurance in developed and third world regions. We believe our role is to provide key recovery services and to this end a payment on account scheme is in place with key brokers in order to provide fast settlement in the wake of major catastrophe events. This was made possible by the modelling capability developed by MS Amlin over several years, which is underpinned by our close relationship with reinsurance brokers to ensure that clients have the most up to date modelling and assessment of their risk.

Evidence also applies to principle(s): 1.2, 3.1, 5.4

Source: MS Amlin

4 Incorporate climate change into our investment strategies

4.1 Evaluate the implications of climate change for investment performance and shareholder value.

The Corporation of Lloyd's / Evaluating implications

In 2015-2016 the Corporation of Lloyd's reported on the aim to use our shareholder power to influence the behaviour of the companies in which we invest – and persuade them to respond more effectively to the impact of climate change. The Corporation uses its position as a shareholder to promote better management of climate change amongst the companies we invest in. John Parry, Chief Financial Officer, is also the internal ClimateWise sponsor, and is involved in activities that generate action, including the Insurance Advisory Council.

The Corporation of Lloyd's believe that we should use our shareholder power to influence the behaviour of the companies in which we invest – and persuade them to respond more effectively to the impact of climate change.

Communicating our beliefs

The Corporation uses its position as a shareholder to promote better management of climate change amongst the companies we invest in. John Parry, Chief Financial Officer, is also the internal ClimateWise sponsor, and is involved in activities that generate action.

Throughout the reporting year, details of the principle 4 case studies from past reporting have been used to illustrate to external partners and stakeholders the range of activities that Corporation and market members take part in this area. See principles 1, 2 and 5 further details.

Strategy

In Q1 2017, the Corporation of Lloyd's Treasury and Investment Management team (LTIM) presented a paper to the Corporation of Lloyd's Investment Committee that proposed the development of a Responsible Investment policy.

This included an approach that LTIM could take when assessing Environmental, Social and Governance (ESG) risks in the investment decision making process. The Investment Committee approved the request and LTIM plans to scope out the development of a responsible investment policy over Q3/4, with the aim for report against activities in future reporting.

Risk Management

As part of a wider thematic review of emerging risks, in Q1 2017 LTIM carried out an exercise to assess the potential exposure to stranded assets on the Central Fund. LTIM identified three high risk sectors, due to their levels of carbon emissions: energy, materials and utilities. It was noted that financial holdings can represent indirect exposures through their investment portfolios; however, due to lack of disclosure it was difficult to accurately assess this risk. The team also compared the Central Fund's weighting in the three risk sectors to the MSCI World Equity Index as well as assessing the overall monetary exposure of the Central Fund. The Central Fund was significantly underweight in all three sectors;

however, it was acknowledged that further work evaluating the potential risks presented by stranded assets in these sectors would be of benefit. Access to additional data has been identified as a potential area for development and the LTIM aims to expand on this in future reporting.

As part of this analysis stream, the LMIT team engaged with the external investment managers, including asking them to make an assessment on the risk to stranded assets on the portfolios they managed on behalf of the Corporation of Lloyd's. This provided further insight to the team and aided in understanding which external managers are 1) considering the risk and 2) to what extent.

Following this exercise, LTIM has been trialling a number of different ESG data providers to enable monitoring of such risks going forward, as well as enabling the in-house fixed income team to better understand ESG risks when making investment decisions.

Future Planning

In H2 2017, LTIM aims to begin this process of developing a Responsible Investment policy, which will look to formally setting out the approach the Corporation of Lloyd's will look to take in assessing environmental, social and governance (ESG) risks.

Furthermore, a framework is currently scoped for development that aims to assist with monitoring the approach that the external investment managers take to responsible investment. The Corporation of Lloyd's aims to engage and challenge the external managers on holdings that could be perceive to have significant ESG risks as part of the risk management process.

One of the external investment managers is in the process of further developing their approach to responsible investment; LTIM has provided the manager with initial guidance on how they may look to improve their reporting in this area and aims to work with them further on this topic as work progresses.

Evidence also applies to principle(s): 1.1, 1.3, 1.4, 3.1, 4.2, 4.3, 6.1

Source: The Corporation of Lloyd's

The Lloyd's market / ArgoGlobal / Climate change and business operations

During 2016-2017, Argo Group continued to review and refine its internal sustainability policy that is intended to apply to corporate risk management and investment practices. Argo Group's approach to sustainability includes the following three parts:

- Environment and Climate Change
- Corporate Social Responsibility and Community Involvement
- Diversity and Inclusion

Climate Change has been classified by Argo Group as one of its emerging risks, and it is regularly monitored by the corporate risk management function for the primary purpose of assessing the potential impact of climate change on Argo Group's business operations insurance products and clients. A threat and opportunity risk assessment review of Sustainability issues is performed at least twice per annum.

Argo Group has also established an Enterprise Risk Management (ERM) framework and climate change is included within that framework as a part of the comprehensive risk categories. Sustainability planning, of which Climate Change is a significant aspect, is part of the remit of the Argo Group Enterprise Risk Management (ERM) Steering Committee. The ERM Steering Committee receives a quarterly report form the CRO outlining progress made with the sustainability action plan and external trends that may become meaningful. The CRO is supported by a Sustainability Working Group which meets periodically to review progress with plans and outcomes of risk assessments.

The Risk & Capital Committee of the Argo Group International Holdings, Ltd. Board of Directors receives periodic updates on material sustainability risks as a result of these risk governance arrangements.

The Argo Group risk management function is also consulted if it is expected that an environmental issue may have a potential impact upon its business operations and/or insurance products. The intended purpose of such consultation is to identify and discuss potential options for the mitigation, reduction and/or avoidance of risk resulting from an environmental issue. A strategic risk assessment is maintained which captures the principal threats and opportunities associated with sustainability issues facing Argo Group. This assessment includes a quantified evaluation of the current level of impact and likelihood for each issue as well as mitigation or realization plans and their status. The assessment is reviewed at least once per annum and principal findings shared with the ERM Steering Committee.

Evidence also applies to principle(s): 5.2

Source: ArgoGlobal: Syndicates 1200 and 1910

The Lloyd's market / Beazley / Evaluating impacts and taking action

Beazley recognise the importance of environmental, social and governance (ESG) issues in managing investments. Internal credit review processes, applying to all of Beazley's direct investments in corporate debt securities, include a review of the issuers' performance against ESG criteria, as well as more general ethical considerations. This process influences investment decisions.

Similarly, Beazley ensure that the third party investment managers, who handle approximately 25% of the company investment portfolio, pay appropriate attention to ESG considerations.

Evidence also applies to principle(s): 4.2

Source: Beazley

The Lloyd's market / Hiscox / Internal evaluation

The Hiscox Investment Team are proactive in evaluating the implications of climate change on our investments. The team have analysed specialist environmentally and ethically focussed funds to assess their various approaches to ESG issues, concluding that there are wide differences in approach to this complex issue, both the investment areas identified as unsuitable for such investments and in the approach taken, with some funds favouring absolute exclusion of specific sectors and other funds supporting an approach of engagement leading to change.

Previous analysis of the economics of climate change and the potential impact on Hiscox investments has included consideration of the Stern Review on the Economics of Climate Change (UK), the Jorgenson (et al) report on the US Market consequences of Global Climate Change (US), the Garnaut Climate Change Review (Australia), the Mercer Climate Change Report and a number of academic papers exploring social discounting and mitigation costs.

In 2016-17, the Hiscox Investment Team, working with our sustainability integrator, continued with a process of evaluation of the governance and ESG reports of our fund management businesses, in order to assess their performance.

In 2016-17, we reviewed the climate related performance of a total of 13 of our investment partners (six of our key equity fund management companies and seven of our key bond management companies). This review consisted of an open search of their publicly available information (web or print) and scored them on five factors:

- Level of public disclosure on climate
- Policy on climate related investment
- Evidence of implementation of the policy
- Involvement in research and pro-active initiatives towards sustainable investment
- Work to minimise the direct impacts of their business operations

We used the results to draw conclusions about our investment profile on climate-related issues. Where required, we plan to follow-up with direct questionnaires to the key management companies in 2017-18.

Further information on Hiscox work in this area can be found in our independent submission, which details examples of strategic review and industry collaboration activities.

Evidence also applies to principle(s): 1.1, 2.1, 4.2

Source: Hiscox

The Lloyd's market / MS Amlin / Investment management

MS Amlin manages its investments on a multi-asset, multi-manager basis. A rigorous selection process ensures that our selected sub-advisors share our belief that superior longer-term investment returns are achieved through investing in companies that embrace their social, environmental and corporate governance (ESG) responsibilities, in line with the United Nations' Principles for Responsible Investment (UNPRI), which we encourage our sub-advisors to sign up to.

Whilst currently 82% of our sub-advisors are UNPRI signatories, we monitor the ESG and Social Responsibility Investment activities of all our sub-advisors.

Evidence also applies to principle(s): 4.2, 4.3, 6.1

Source: MS Amlin

The Lloyd's market / QBE European Operations / QBE Investment Initiatives

QBE has a co-ordinated approach to responsible investment with two major initiatives led by the QBE Group Chief Investment Officer. A dedicated Responsible Investments Manger was appointed in 2016 with day to day responsibility for activities in this area.

Credit Risk Policy

The first of these initiatives relates directly to QBE's obligations as a signatory to the Principles for Responsible Investment supported by the United Nations. Consistent with the Principles, QBE introduced a new Credit Risk Policy in 2016 which applies across the entirety of QBE's business and includes a requirement that the credit evaluation of risks and risk mitigants include consideration of "regulatory, environmental, social and governance risks and impacts on QBE's reputation".

More specifically, QBE incorporates environmental, social and goverance (ESG) principles into investment decisions across major portfolio areas as follows:

- In relation to corporate bonds, our selection processes recognise that the sustainability of a business is likely to be greater if it has strong governance that includes effective management of ESG factors. To understand and monitor a company's approach to managing ESG policies and practices, an independently derived ESG measure is included in the credit management process; and
- In relation to growth assets and related asset classes, QBE invests using external managers via either mandates or collective investment schemes. When considering whether to appoint or allocate to an external fund manager, QBE considers the extent to which managers incorporate ESG factors into investment processes and operational areas. More than three quarters of external managers currently engaged by QBE are signatories to the Principles for Responsible Investment.

Premiums4Good initiative

QBE's second major investment initiative is Premiums4Good, which we reported on as part of the 2015/2016 ClimateWise review: a pioneering program understood to be unique in the insurance industry globally which allows targeted customers to direct a proportion of their premium to be invested in securities with an additional social or environmental objective.

Since the launch in 2016, significant progress was made with participation in the programme now being open to selected customers in European Operations, North American Operations and Australian and New Zealand Operations. The initiative is reaching a level of maturity, such that the impact of some early investments is starting to become clear. A total investment of $400 million has now been made into impact investments across 16 securities that meet the Premiums4Good investment and impact criteria, including nine investments with an environmental objective.

Examples of these investments include green bonds and investments into infrastructure projects with environmental benefits. Through this initiative, QBE is playing a part in stimulating the development of new investment products which offer appropriate risk-adjusted returns as well as supporting beneficial social outcomes. Further information can be found in the QBE 2016 Sustainability report.

Evidence also applies to principle(s): 2.1, 2.2, 4.2, 4.3, 6.1

Source: QBE European Operations

The Lloyd's market / Tokio Marine Kiln / Implications of climate change for investment performance and shareholder value

Tokio Marine Kiln's ultimate parent, Tokio Marine Holdings Inc. (ticker: 8766) is listed on the Tokyo Stock Exchange. Given the Group's ongoing focus on CSR, the Tokio Marine Group has been selected for inclusion in global socially responsible investing (SRI) indexes as of July 2015. The SRI indices include Dow Jones Sustainability Indices, FTSE4Good Index and Euronext Vigeo World 120.

The Tokio Marine Group is also a signatory to, and participant in, the United Nations Principles for Responsible Investment (PRI). PRI signatory organisations, Tokio Marine Asset Management and Tokio Marine & Nichido, have made clear their endorsement and acceptance of "Japan Stewardship Code", a set of principles for responsible institutional investors, and engage in constructive dialogue for the sustainable growth of investee companies.

The TM Group was selected as a 2016 Health and Productivity Stock by the Tokyo Stock Exchange and Ministry of Economy, Trade and Industry. This is for outstanding health and productivity management towards employees and their families. This is partly based on the TM philosophy to be a 'Good Company' and means that the TM Group takes action to promote a healthy lifestyle, prevent diseases, monitors employee mental health and creating a working environment where employees can work.

The TM Group also strives to disclose environmental, social and governance (ESG) information with transparency and was highly evaluated by socially responsible investment (SRI) rating organisations around the world (as of July 2016).

Finally, The TM Group was selected as a 'Nadeshiko Brand' for its efforts to promote empowerment of women in the workspace. This designation is made jointly by the Japanese Ministry of Economy, Trade and Industry and the Tokyo Stock Exchange. The TM Group works to create corporate cultures that promote the empowerment and growth of female employees with the aim of providing products and services that further satisfy customers.

Further information can be found in the Tokio Marine 2016 Annual report.

Evidence also applies to principle(s): 2.1, 2.2, 4.3

Source: Tokio Marine Kiln

4.2 Incorporate the material outcomes of climate risk evaluations into investment decision making.

Lloyd's / The Corporation of Lloyd's / Level and impact of engagement

In 2015-2016 reporting, the Corporation of Lloyd's provided material on work with LTIM's overlay manager, BMO Global Asset Management (BMO), who voted at 129 company shareholder meetings in respect of the Central Fund's equity *investments. BMO engaged with 82 companies in which the Central Fund is invested, leading to 41 instances, at 28 companies, where the approach to ESG issues was changed, as a result of the engagement.*

Green Bonds

Lloyd's Treasure and Investment Management team (LTIM) directly manages the Central Fund's investment-grade fixed income portfolio and invested in Green Bonds for the Central Fund at the end of 2015. In 2016 LTIM set and met the objective of having 5% exposure to Green and Social Bonds within this portfolio. This equates to £85 million in assets.

Voting and Engagement

LTIM continues to employ the services of an overlay manager, BMO Global Asset Management (BMO), to engage with companies in which Lloyd's Central Fund invests and to exercise the Central Fund's voting rights in pursuit of environmental, social and governance (ESG) goals. The table below illustrates activity over the last three calendar years:

BMO ESG engagement tracking

	Companies engaged	Milestones achieved	Environmental engagements	Environmental milestones
2014	62	25	33	8
2015	82	41	51	21
2016	64	43	68	13

Note that a company can be engaged with on more than one issue and a milestone is achieved when a company's approach to an ESG issue changes, as a result of engagement.

Evidence also applies to principle(s): 1.4, 4.1, 4.3, 6.1

Source: The Corporation of Lloyd's

The Lloyd's market / ArgoGlobal / Investment strategy

Argo Group has outsourced its investment management functions to a variety of investment management firms, who are expected to manage Argo Group's investment portfolio in accordance with Argo Group's investment management guidelines, which include an expectation that consideration will be given to the impact of environmental issues, when investment strategies are developed and applied. The risk management function has held discussions with a number of investment managers during 2016-2017 with respect to the implications of the growth in ESG (Environmental-Social-Government) indices and their impact on investor decision making.

The nature of Carbon-based extractive industries such as coal and the potential impact of their operations on climate change are recognized by Argo Group. Investment in coal extractive industries currently remains at less than 0.1% of the Argo Group portfolio, a level that is not anticipated to increase in the future.

Argo Group has identified 'Stranded assets' as a strategic risk factor with potential material impacts over the planning horizon. Argo Group has reviewed its investment strategy as part of its 2016 sustainability plan to identify high-carbon industry holdings. Utilising the Lloyd's of London report entitled "Stranded Assets: the transition to a low carbon economy Overview for the insurance industry', Argo Group completed stress test scenarios considering the potential impact of high-carbon assets within its portfolio on its capital adequacy. The results of this study were combined with other scenarios within the Stress & Scenario Testing Framework (SSTF) and this has been reported to the Risk & Capital Committee of the Argo Group Board as part the quarterly Own Risk & Solvency Assessment.

Evidence also applies to principle(s): 1.3, 4.1

Source: ArgoGlobal: Syndicates 1200 and 1910

The Lloyd's market / Tokio Marine Kiln / Ongoing investment manager commitment to ESG

Tokio Marine Kiln outsources the management of its investment portfolio to several external investment managers. One of its managers takes into consideration ESG issues into its investment process. This approach begins with the belief that ESG factors are often a signal of or proxy for, management quality – particularly over the long term.

The investment manager does not expect ESG to be the sole consideration for making investment decisions, and assesses a variety of factors to build and monitor a portfolio of appropriate investments for clients. Generally, the fixed income investors consider material ESG factors as they relate to an issuer's creditworthiness. More specifically, the investment grade credit research team of the investment manager includes ESG information alongside credit ratings and internal research opinions in regular research communications to active fixed income portfolio managers.

Where applicable, the investment manager considers any factor that in their judgment will affect the creditworthiness of companies over time, which includes the financial impact of non-financial factors. These may include board leadership, management quality, and mitigation of risks (e.g., physical risks, reputational risk, regulatory risk and legal risks). These risks may come from climate change, social trends, consumer behaviour, or government intervention.

Further information can be found in the BlackRock engagement guide.

Evidence also applies to principle(s): 4.1, 4.3

Source: Tokio Marine Kiln

4.3 Communicate our investment beliefs and strategy on climate change to clients and beneficiaries.

The Corporation of Lloyd's / Communicating the investment strategy

In 2015-2016 reporting, the Corporation of Lloyd's illustrated work towards holding a responsible investments event as part of activities to communicate investment beliefs and strategy on climate change.

Reporting

Progress by Lloyd's Treasury and Investment Management team (LTIM) against Principle 4 of the ClimateWise principles is published on the lloyds.com/ClimateWise pages as part of the Corporation of Lloyd's commitment to the ClimateWise principles. This demonstrates an account of year on year activities.

Events

In October 2016, the Corporation of Lloyd's hosted an event on "Responsible Investment" that was sponsored and chaired by John Parry, Chief Financial Officer. The event was hosted in partnership with the Cambridge Institute for Sustainability Leadership and United Nations Principles for Responsible Investment (UN PRI) as part of the Corporation of Lloyd's activities in principles two and four.

The aim of the event was to promote awareness and discussion around the topic of responsible investment in the Lloyd's market and to provide thoughts on how asset owners and investors might develop and implement a 'Responsible Investment' strategy that incorporates Environmental Social and Governance (ESG) risk factors and reflects their processes.

Speakers included Dominic Barton, Global managing Director of McKinsey & Co and Roger Urwin, Global Head of Investment Content at Willis Towers Watson. A panel discussion was chaired by Andrew Voysey, Chief Financial Officer Sector Platform at Cambridge Institute for Sustainability Leadership, with the objective to provide compelling motivation for why responsible investment needs to be on the business agenda and actionable examples of steps the Corporation of Lloyd's and the Lloyd's market could take.

The speakers on the panel were Faith Ward, Chief Responsible Investment and Risk Officer at the Environment Agency Pension Fund; Steve Waygood, Chief Responsible Investment Officer at Aviva; Scott Freedman, Analyst & Portfolio Manager at Newton Investment Management.

Responsible investment forum event

The event was attended by over 100 people with approximately 70% of Lloyd's market Managing Agents being represented. Feedback was positive:

- When asked whether the event changed their opinion on responsible investment 80% of those surveyed responded "yes"
- 54% of respondents agreed that responsible investment should receive more attention in their organisation

Details of the event were shared on the Corporation of Lloyd's intranet in an internal blog written by Laura Moss-Brommage, Executive, Lloyd's Treasury and Investment Management team as part of Corporation activities to communicate and engage employees on the topic.

Future planning

LTIM are currently exploring the possibility of becoming a UN PRI signatory as a way to publicly demonstrate the Corporation of Lloyd's commitment to the area of responsible investment. The Corporation aim to make the responsible investment policy publically available on completion.

Evidence also applies to principle(s): 1.1, 1.3, 2.1, 2.2, 4.1, 4.2, 5.4, 6.1

Source: The Corporation of Lloyd's

The Lloyd's market / Hiscox / Communications strategy development

Hiscox recognises the importance of good communication with our customers and stakeholders and we use different mechanisms to achieve this communication. We have reviewed our major shareholders and peers attitudes to climate change, based on our history of direct communications with them or on publicly available information on their investment decisions.

In 2017, we conducted a review of peer approach to climate-related investment. For further details about our approach to investments, see page 28 of the Hiscox Report and Accounts 2016.

We also regard this report as a key method of communicating our approach to climate change risk in our investments.

In 2016-17, we continued to implement a proactive approach to communicating with customers and shareholders on climate change subjects, based on our findings. See Section 3.1 in the Hiscox independent ClimateWise report for more details, and for more details of Hiscox activities under the principles.

Evidence also applies to principle(s): 4.1, 4.2, 6.1

Source: Hiscox

The Lloyd's market / Tokio Marine Kiln / Reporting

Tokio Marine Kiln and the Tokio Marine Group continue to report CSR related activities in the respective annual reports.

For the Tokio Marine Group, CSR represents a way of realising our corporate philosophy, and working to help resolve social issues leads to the sustainable growth of the group. Based on this, we have formulated the "Tokio Marine Group CSR Charter" to pursue the genuine practice of CSR in all our business activities, from products and services to respect for human rights and dignity, protection of the global environment, contribution to local communities and societies, governance and stakeholder engagement.

In the new Mid-Term Business Plan "To Be a Good Company 2017", together with the aforementioned four initiatives for sustainable growth, we have set "providing safety and security", "protecting the Earth" and "supporting people" as our core CSR themes, and we will further foster the practice of CSR in our corporate culture by encouraging each employee to participate proactively in CSR with the aim of continuing to be of service to society as we continue to grow.

Beyond being a 'Good Company' in the way we provide insurance, we support a range of good causes and focus on building strong partnerships with organisations that make a real and substantial difference to people all over the world. In 2016, we donated £175,000 to charitable organisations, including Médecins Sans Frontières and London's Air Ambulance. In addition, we made donations to a local charity in each region where we have an office.

While funding is important, we also seek to engage our employees in the initiatives we support. In 2016, a team of six runners from TMK participated in the Sierra Leone Marathon in Makeni in aid of Street Child's 'Girls Speak Out' appeal. The charity, which TMK has supported since 2011, seeks to help vulnerable young people into homes and education in one of the poorest countries in the world. Furthermore, we maintained our long-standing relationship with The Brokerage – a City of London programme that provides work experience placements and opportunities for young people with high potential from diverse backgrounds.

Further information can be found in the Tokio Marine 2016 Annual report, and Annual report and accounts 2016 for Syndicates 510, 557 and 308.

Evidence also applies to principle(s): 1.4, 2.1, 2.2, 3.3, 3.4, 4.1, 4.2, 5.2, 5.3, 5.4, 6.1, 6.2

Source: Tokio Marine Kiln

5 Reduce the environmental impact of our business

5.1 Engage with our supply chain to work collaboratively to improve the sustainability of their products and services.

The Corporation of Lloyd's / Sustainable procurement

In the Corporation 2015-16 reporting, activities relating to considering our supply chain, including training for relevant staff, developing sustainable procurement guidance and incorporating questions in our tender process on environmental, social and ethical impacts for potential suppliers. Year on year the Corporation of Lloyd's seeks to build on its commitments to fully embed sustainable procurement practices with key internal stakeholders and across its supply chain.

This year there have been some significant changes to the procurement structure and processes at Lloyd's, with the establishment of a Procurement Centre of Expertise (CoE) in January 2017. The CoE's mission is to deliver an effective and sustainable approach to all third party sourcing and supplier management, with a clear purpose to support Lloyd's overall strategic principles while aiming to achieving maximum value, minimising risk and drive efficiencies to invest in the future.

There are several projects and activities already underway to further embed the new procurement processes and to help drive efficiencies and process-improvements. These include:

1. Publishing 'Lloyd's Procurement Strategy' to internal stakeholders which includes objectives such as:
   - To better manage supply chain risks and key supplier relationships.
   - To develop sustainable procurement capabilities and embedding best practices across the organisation.
2. Publishing 'Lloyd's Procurement Policy' which sets out policies and procedures concerning all third-party supplier expenditure, with clear guidelines:
   - To demonstrate continuous improvement and the achievement of value for money through the effective procurement of goods and services to ensure that the Corporation of Lloyd's needs and those of the local community are met.
   - To have a clear framework of accountability and responsibility that adopts legally compliant, best practice procurement procedures and techniques.
   - To build a diverse and competitive market that can supply Corporation of Lloyd's and its service user's requirements and provide value for money.
   - To encourage communication and interaction with local and national suppliers to understand their views and what enables and encourages diverse parts of the market to bid for work with Corporation of Lloyds.
   - To develop a relationship between Corporation of Lloyd's and the business community and the broader voluntary and community sector that creates mutually advantageous, flexible and long term relations based on continuous improvement of quality of performance and financial savings.

- To ensure that the Corporation of Lloyd’s purchasing and contracting activities are ethically, environmentally and socially responsible; applying the Corporation’s principles around sustainable procurement, Corporate Social Responsibility, Living Wage, Anti-bribery & Corruption, Diversity & Inclusion, Modern Slavery and other applicable ethical sourcing and environmental considerations.

3. Supplier rationalisation activities are underway in an effort optimise the Corporation of Lloyd’s supplier base, bringing both financial and business improvement benefits to Lloyd’s and its’ suppliers, as well as enhancing the supplier/customer relationship.

4. Centralised ownership of the Corporation of Lloyd’s Travel policy and Stationery provider:

Travel Policy

The Corporation of Lloyd’s policy on class of travel for employees was revised in January 2017; employees are required to choose economy class for flights up to 5 hours and premium economy for flights which take more than 5 hours.

This change has resulted in a significant reduction in the number of flights taken and we hope to see a positive impact on the Corporation’s carbon footprint. This has been supported by a series of continuous improvement projects by the Operations Directorate, and includes delivering additional meeting room AV (video conferencing & presentation) capabilities in London and Chatham to facilitate virtual meetings.

Stationery

Stationery stock has been reviewed and the number of items on the Corporation of Lloyd’s core list has been consolidated and reduced by 50% to 40 items. Stationary has been evaluated and chosen on the environmental sustainability where possible.

The Corporation are no longer printing “Lloyd’s” printed stationery (i.e. headed paper, continuation paper, compliments slips, etc.), instead these have been replaced with document templates available online which can be used if necessary, and printed as-required on-demand.

5. The Corporation of Lloyd’s operates a continuous improvement and review programme across all procurement and supplier management activities including a review of all support documentation and polices.

The ‘Lloyd’s Invitation to Tender’ documentation has been updated to reflect best practice; suppliers are asked to respond to a series of questions and to provide supplementary evidence on key sustainability issues, including:

Environment

Suppliers are asked to provide:

- A copy of any Environmental policies.
- Details of any Environmental accreditations achieved, such as ISO14001, Eco Management and Audit Scheme (EMAS) or CIPS Sustainability Index, etc.
- Details of any action it has undertaken to reduce its impact on the environment.
- Details of any environmental training provided to its staff.

Diversity and Inclusion

The Corporation of Lloyd’s believe that a diverse workforce and inclusive organisation is intrinsically linked to improved business outcomes. As an employer we recognise the importance that equality legislation has to play in promoting equality and eliminating unlawful discrimination, in striving for excellence we seek to create an inclusive environment globally for all regardless of their gender, marital/civil partnership status, race, religion or ethnicity, disability, age, sexual orientation, gender reassignment or nationality.

Suppliers are encouraged to support and reinforce the commitment to providing an inclusive environment for its workforce; suppliers are also expected to provide the same equal opportunities to their workforce and requested that they provide copies of any equal opportunities policies, information regarding staff training covering equality, diversity and inclusion and to disclose any monitoring of workforce composition. If suppliers are not able to provide a D&I policy, suppliers are also asked to describe ‘how they will you work with Lloyd’s’ to ensure they are taking steps towards meeting the requirements outlined above.

6. As reported last year, the Corporation of Lloyd's continues to assess a suppliers suitability via tender on their various sustainability activities and policies; including:

   Employee Relations / Code of Conduct
   The Corporation of Lloyd's expects its suppliers to uphold at all times the minimum commitments relating to labour standards, which meet the four 'core' International Labour Organisation (ILO) conventions on labour rights:

- Freedom of association and the effective recognition of the right to collective bargaining.
- The elimination of all form of bonded labour and compulsory labour.
- The effective abolition of child labour.
- The elimination of discrimination with respect to employment and occupation.
- And which meet the four 'non-core' ILO conventions on labour rights:
  - Workers should have safe and hygienic working conditions
  - A living wage should be paid
  - Working hours should not be excessive
  - Abuse and intimidation should be prohibited

   Suppliers are also asked to provide a copy of any Employee Relations polices.

   Health and Safety
   Lloyd's expects its suppliers to comply with the requirements of the Health and Safety at Work etc. Act 1974 and all associated health and safety regulations and to confirm how this will be achieved.

   Anti-Bribery and Financial Crime

   The Corporation of Lloyd's expects its suppliers to comply at all times with current relevant anti-bribery and financial crime legislation and to have in place relevant policies detailing the scope, implementation, review and communication of any anti-bribery practices.

   Modern Slavery Act
   The Corporation of Lloyd's expects its suppliers to comply with the UK's Modern Slavery Act of 2015 and to have in place due diligence procedures for both internal compliance and within their own supply chain.

   During tender
   During post-tender supplier evaluation, the Corporation of Lloyd's will assess and score suppliers on responses to sustainability questions. In instances where sustainability factors have more of an impact on the products and services being procured, it may be necessary for the Corporation of Lloyd's to follow up with a supplier site visit or request further clarification at presentation stage.

7. Where appropriate, the Corporation of Lloyd's seeks to involve its key suppliers in the development of annual environment action plans. The following examples have contributed to the Corporation achieving a Platinum Award in the City of London 'Clean City Awards':

   - The 'Square Mile Challenge': In collaboration with catering and cleaning providers (Elior UK Plc and Principle Cleaning Services Ltd), the Corporation of Lloyd's has been considering options regarding recycling the paper cups used in the Corporation UK buildings and coffee cups bought in from external sources. From April 2017 a decision was made that plastic cups would no longer be used in the UK offices and that all paper cups would be recycled. This involves circular recycling, with the plastic lining treated and used to create new mouldable plastic material.

     This new policy was introduced as part of the Corporation of Lloyd's participation in the Square Mile Challenge that aimed to target the collecting and recycling of half a million cups over the month of April and 5 million by the end of 2017.

The Corporation of Lloyd's collected over 5% of the total cups collected for the Square Mile Challenge. The paper cup recycling bin unit in the One Lime Street Underwriting Room was repeatedly filled, leading to additional bins needed to be provided to meet demand. This was shared in communications activities around the challenge with the Corporation of Lloyd's providing a case study and public statement on the activities:

"Our employees have been even more enthusiastic about the Square Mile Challenge than we anticipated. We were only a few days into the challenge when we realised we needed more bins to meet demand and we now have 21 in place. We are all doing our bit to help the environment."
- Shirine Khoury-Haq, Chief Operating Officer, Lloyd's

In total 509,091 coffee cups were collected for recycling during the challenge month, and the media reach from communications by the members of the scheme resulted in 307 million impressions from 209 pieces of coverage across UK and European press. Statistics for the social media reach were totalled at 3.35 million by organisers Hubbub.

– Under-desk bins: In collaboration with Corporation of Lloyd's cleaning supplier, Principle Cleaning Services Ltd, all under-desk bins were removed from Corporation floors in an effort to encourage staff to dispose of items at central recycling points.

  In early 2017 Corporate Real Estate undertook a trial on Gallery 6 to review the recycling rates when the under desk recycling plastic bins were removed, and staff had to dispose of their waste at the centralised recycling points. Over the trial period the recycling rate on Gallery 6 was 90% (1.2 tonnes) in comparison to on Gallery 5 where it was only 39% (3/4 tonne). It was estimated that if the Corporation of Lloyd's removed all the under desk bins general waste would be reduced by up to ten tonnes per year.

  Following on from the trial the Corporation's Executive Committee approved the removal of all the remaining under desk bins in Lloyd's UK offices, as part of an aim to increase the recycling rate and reduce the carbon footprint of UK sites where we are the landlords. All the under desk bins were removed over the first May bank holiday weekend in 2017, with communications to staff and training for Principle Cleaning Services Ltd, as well as additional signage at centralised waster points implemented as part of the rollout. The project was also adopted by one of tenants in the One Lime Street building and has been supported by users of the market underwriting rooms.

  The Corporation of Lloyd's has a site in Chatham, and in August 2016 a 'clear the junk day' was held as part of the coordinated activity around some team moves. 110kg of waste was removed and recycle, saving one tree or 120kg of CO^2. Further examples of initiatives held around the Corporation of Lloyd's hub offices can be found in principle 5.

– Paper Round, BPR Group: In 2015-16 private reporting the Corporation of Lloyd's outlined to the reviewers that a new supplier had been engaged as part of the waste management processes for the One Lime Street building. Working in conjunction with Principle Cleaning Services, Paper Round track recycling and 2017 will be the first year with a full coverage of statistics. This will allow a greater depth of analysis by the Corporate Real Estate team.

  Current headline statistics from 1 January 2017 are outlined overleaf.

H1 recycling tracking

Paper Round

Recycling Report for Principle Cleaning Services - Lloyds of London (London)

Recycling performance for 01/06/17 - 30/06/17

Total recycling
21,500 kg

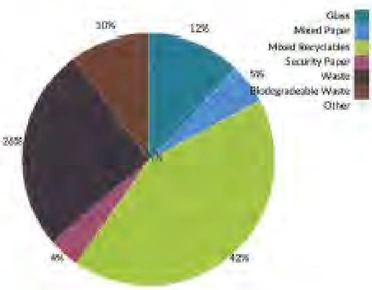
Trees saved
128

CO_2 savings
25,270 kg

Recycling per employee
0.4 kg/wk

Fare Share meals
62

Breakdown of materials



Any material collected which is less than 2% of your total recycling will be grouped in 'Other'

– Energy Reduction Targets: Each year the Corporation of Lloyd's sets an energy reduction target i.e. to reduce electricity usage or carbon emissions; these activities are completed with support from the Corporate Real Estate team and NG Bailey facilities Services the facilities management partners.

A range of examples are noted below, and a full action plan for 2017 has been distributed to the external reviewers that also includes sections on ITG, employee engagement, travel, suppliers, management and reporting:

Energy reduction examples

Initiative
1. Set an energy reduction target
2. Revision of Energy Efficient Small Plant (LED opportunities/AHU pumps, motors and drives)
3. Energy Savings Opportunity Scheme (ESOS) Regulations Reporting, and TM44 Survey (Separate spreadsheet)
4. Undertake a building sustainability assessment when opening new offices. Further information is provided in principle 5.2.

5. Meat free Fridays: In partnership with the Corporation of Lloyd’s catering vendor, Elior, “meat-free Friday” has been implemented in the London and Chatham canteens, with the aim to lower the Corporation carbon footprint.

6. To reduce the use of personal portable electrical devices in ‘Lloyd's UK’ premises: Personal portable electrical devices are no longer permitted in ‘Lloyd's UK’ premises, and are agreed on an exception needs related basis.

- Information Technology: Another way the Corporation looks to reduce the carbon footprint is through IT related functions. In the last few years IT has been an area that has reduced carbon emissions noticeably. This has included:
  - Replacing physical servers with virtual servers: Over the last few years has seen a move to virtual server use, as it is possible to run about 20 of these on a single physical server, thereby reducing power consumption.
  - The use of efficient equipment: The Corporation usually replaces physical IT equipment when it goes out of support, and modern machines use much less power than older devices. For example, a new desktop PC and monitor draw around 60W in use compared to about 110W in 2010.
  - Efficient paper usage: New printers were installed in 2009, replacing 290 ‘local’ printers with approximately 35 shared devices. These new printers facilitate the reduction of paper usage by only printing when the user collects their output. Uncollected print jobs are automatically deleted after ten hours. Additionally, improved behaviour such as double-sided printing has saved nearly 1.43 million sheets in 2016. Data analysis illustrates that during the audit period, a further 1,589,614 sheets of paper or the equivalent of 3,179.23 reams of paper or 190.24 trees annually could have been saved if all jobs had been printed double sided.
  - Equipment reuse and recycling: The Corporation donates unwanted but usable IT equipment to charities or utilises a third-party to recycle unusable equipment to reduce waste going to landfill.
  - Flexible working and video-conferencing: Corporation staff are encouraged to use video-conferencing and other collaboration tools as a replacement for business travel, and new remote-access services have been made available that can reduce physical commuting.
- SolarAid, lighting for Africa items available in the One Lime Street gift shop: Following review and consultation with Lloyd’s catering supplier, Elior UK, a decision was ratified at the Corporation Environmental Working Group to sell the lights in the Lloyd's Shop. For every light bought SolarAid helps to get another solar light to rural Africa.

SolarAid lights

Further details of the partnership can be found in principles 3 and 5.

- Fidentia House, Chatham photovoltaic cells: In April 2016 the Corporation of London's Corporate Real Estate team completed the installation of photovoltaic cells on the roof in Chatham. Since installation 20% less electricity is being procured from the Chatham office. This is greater than the original planned savings as supporting projects such as new LED lighting also installed in summer 2016, has contributed to energy reductions.
- Locations where the Corporation are tenants: Where possible, the Corporation of Lloyd's seeks to influence its landlord and tenants; below are some examples of projects completed with support from these stakeholders:

- Where possible, new Lloyd's offices are provided with recycling points aligned to the local market waste management.
- A sustainability assessment will now be completed when locating and deciding on opening new offices. This now forms part of the decision making process when evaluating new sites.

  In 2017 environmental credentials were gathered for offices in Beijing, Shanghai, Rotterdam from the Corporation's prospective landlords:

Rotterdam

- Has been rated 'BREEAM Good' with a pass of 41.43%.
- Sustainable strategies for the building focus on the following areas:
  - Health – 45%
  - Energy – 15%.
  - Vertical Transportation – 89% due to efficient lifts
  - Water – 40%. Consumption control devices are installed
  - Materials – 20%. Given this building was extensively refurbished in 1986, there is little scope for improvement here
  - Waste collection – 100%
  - Landscaping – 25%
  - Carbon Footprint – 62%

China

- China World Trade Centre Phase IIIB in Beijing Towers environmental credentials has been pre-certified as Gold LEED for core and shell.
- The building is designed to achieve LEED Gold certification.
- Key sustainable features include:
  - The exterior curtain wall is 3 degrees off vertical to make the façade self-cleaning.
  - The cant decreases glare to occupants and the reflection of light results in an 8% reduction in energy loads.
  - The exterior is clad in a close profile curtain wall of glass with self-shading vertical fins.
  - These façade features reduces glare and solar heat gain in the warm summer months, while still allowing for ample natural light in the winter and provides for the façade to have self-cleaning properties during periods of rainfall.

Shanghai

- The Shanghai Towers environmental credentials have been rated Platinum LEED for the building core and shell, and currently hold an overall LEED Gold and China Three Star rating.
- Sustainable strategies aim to reduce the buildings Carbon footprint by 34k metric tonnes per year and focus on the following:
  - Daylight
  - Just shade
  - Building Controls
  - Cogeneration Systems
  - Regional materials
  - Building envelope
  - Landscaping

    - Wind turbines

  - A 'China Three Star' certification was awarded by China's Ministry of Housing and Urban-Rural Development (MOHURD).
  - Key sustainable features include:
    - LEED Platinum certification will save significantly on costs for Shanghai Tower. For example, among all its intelligent building control systems, the lighting system alone will save more than $556,000 each year in energy.
    - The building is designed to capture rainwater for internal use, and to recycle a portion of its wastewater.
    - The design of the tower's glass façade, which completes a 120° twist as it rises, is intended to reduce wind loads on the building by 24%.This reduced the amount of construction materials needed.
    - The Shanghai Tower used 25% less structural steel than a conventional design of a similar height. As a result, the building's constructors saved an estimated US$58 million in material costs.
    - Construction practices were also optimised for sustainability. Though the majority of the tower's energy will be provided by conventional power systems, 200 vertical-axis wind turbines located near the top of the tower are capable of generating up to 350,000 kWh of supplementary electricity per year and are expected to provide 10% of the building's electrical needs.
    - The double-layered insulating glass façade was designed to reduce the need for indoor air conditioning, and is composed of an advanced reinforced glass with a high tolerance for temperature variations. In addition, the building's heating and cooling systems use geothermal energy sources.

Evidence also applies to principle(s): 3.2, 3.4, 5.2, 5.3, 5.4, 6.1

Source: The Corporation of Lloyd's

The Lloyd's market / Beazley / Evaluating impacts and taking action

- Beazley have created a responsible business strategy with a vision to use our expertise, influence and passion as a force for good in our local communities and the wider world. The aim is to embed in Beazley's decision-making environmental, social and governance issues relevant to our insurance business and work together with our clients and business partners to raise awareness of environmental, social and governance issues.
- Beazley are exploring climate-related financial disclosures, as recommended by the Financial Stability Board under Mark Carney.
- Beazley continue to ensure refurbishments and new offices are built using appropriate sustainable materials including, where feasible LED lights.
- Beazley have introduced follow-me printing and hand dryers in bathrooms to reduce paper usage in the London office. Beazley also implemented further recycling options in the New York office ahead of legislation requirements.

Evidence also applies to principle(s): 2.1, 5.2, 5.3, 5.4

Source: Beazley

The Lloyd's market / Tokio Marine Kiln / Sustainable procurement

We have engaged an external consultant (AECOM) to support and document our Environmental Reporting on an on-going basis. The support and reporting includes monitoring of key environmental impact areas associated with our principle office at 20 Fenchurch Street and our three UK IT Data Centres. We have summarised the waste results in section 5.2.

TMK also works with an external environmental consultant to calculate our corporate carbon footprint. We have also commissioned Energy Savings Opportunities Scheme (ESOS) audits of our offices at 20 Fenchurch Street and also our IT infrastructure at the Sungard data centre (Guildford).

Forward planning

We are reviewing the opportunities identified and considering the recommendations made for future activities in this area.

Evidence also applies to principle(s): 5.2, 5.3, 5.4

Source: Tokio Marine Kiln: TMK facilities management, AECOM reports are available upon request.

5.2 Measure and seek to reduce the environmental impact of the internal operations and physical assets under our control.

The Corporation of Lloyd's / Energy and environmental policy statement: BS EN ISO 14001:2004, BS EN ISO 50001:2011

Corporation of Lloyd's 2015-16 reporting covered the newly instated energy and environmental policy statement. The Corporation of Lloyd's recognises and accepts its responsibility to protect the environment and prevent pollution arising from our activities, products and services in accordance with all applicable environmental legislation and other requirements to which the Corporation subscribe.

The Corporation of Lloyd's approach to Environmental management is based on the key clauses of BS EN ISO14001:2004 whereby emphasis is placed on:

- *Environmental Policy*
- *Planning*
- *Implementation and Operation*
- *Checking*
- *Management Review*

The Corporation of Lloyd's approach to Energy management is based on the key clauses of BS EN ISO50001:2011 whereby emphasis is placed on:

- *Management Responsibility*
- *Energy Policy*
- *Energy Planning*
- *Implementation and Operation*
- *Checking*
- *Management Review*

The Corporation of Lloyd's recognises the need to focus on continual improvement its environmental and energy management and performance. The Corporation aims to encourage a positive culture which promotes sustainable business practices. To ensure this is achieved care for the environment and improved energy performance is actively promoted throughout the organisation through the provision of information, training, instruction and supervision.

The Corporation of Lloyd's also operates a 'low blame' culture whereby employees are openly encouraged to report potential environmental and energy performance concerns without fear of reprisal to ensure the root causes of environmental and energy incidents are identified thus enabling measures to be put in place to eliminate their occurrence.

Emphasis is placed on effective management ensuring a systematic approach to the identification of environmental aspects and impacts and energy usage and the allocation of financial and physical resources to control them.

Forward planning

Inga Beale DBE, Chief Executive Officer, takes overall responsibility for the environment and energy usage including the formulation, development and implementation of the Environmental and Energy policy within the Corporation and requires the co-operation and support of all managers, employees, tenants, contractors and visitors in its implementation.

Beale aims to ensure that the Policy is reviewed periodically in support with relevant staff – at least every two years – to ensure that it remains relevant and appropriate to the organisation. This will be covered in the 2017-18 reporting, and the Corporation of Lloyd's aims to ensure the Policy is communicated to all staff working under the control of the Corporation and that it is made available to the public and other interested parties on request. Further information about the Environmental and Energy Policy can be found here.

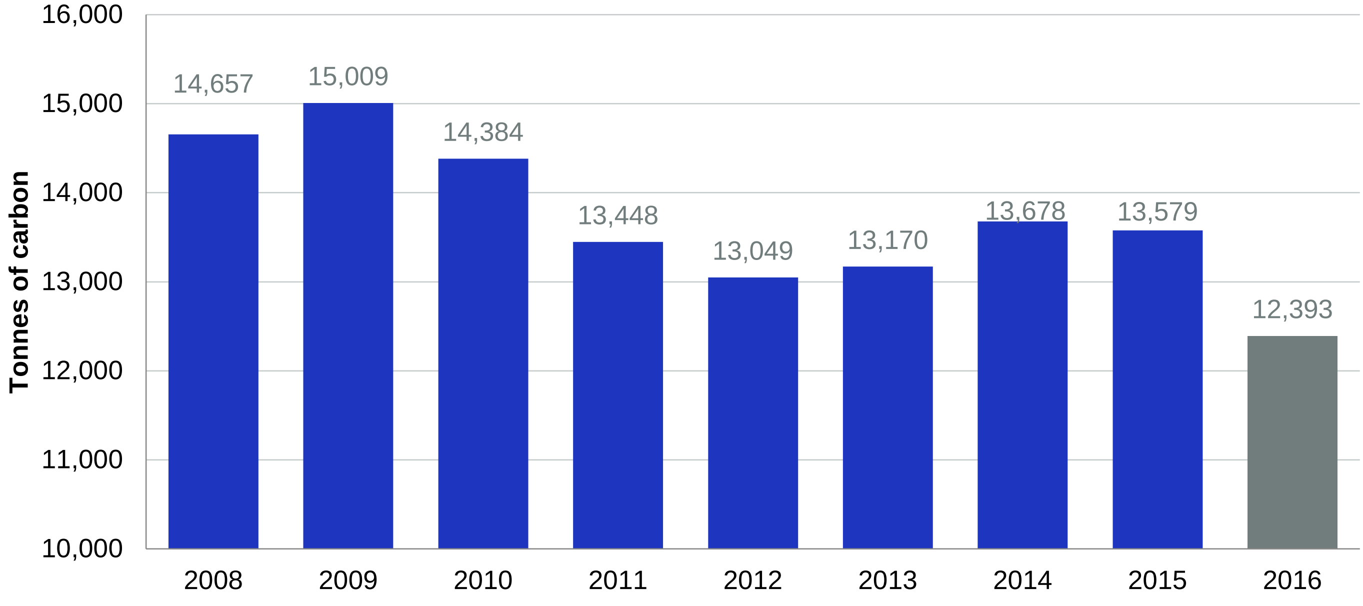
Evidence also applies to principle(s): 5.2, 5.3, 5.4, 6.1

Source: The Corporation of Lloyd's

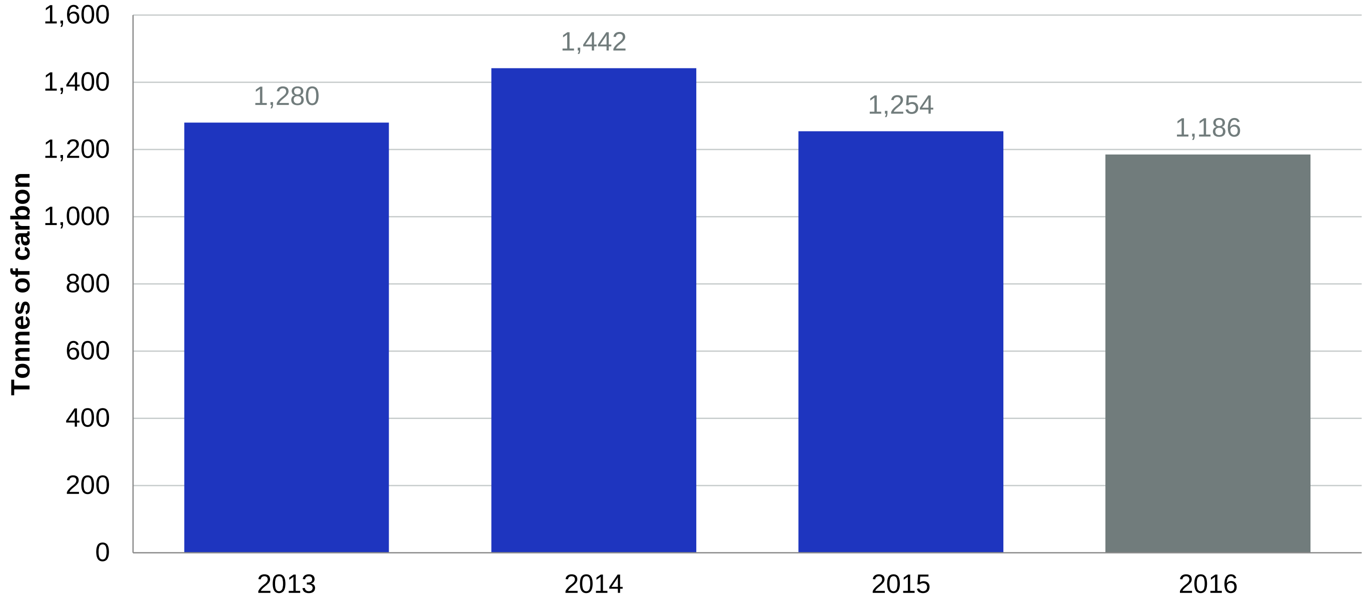
The Corporation of Lloyd's / Emissions tracking

In the Corporation 2015-16 reporting, information on emission tracking was covered in reporting illustrating results since tracking first started in 2008. 2016 marks the fourth year in which the Corporation has reporting the Green House Gas (GHG) emissions inventory of the international offices in addition to that of the UK, and sees those offices continuing to engage with their resource consumption.

Eight year UK carbon footprint trend



Four year international carbon footprint trend



Due to their small size, not all of the Corporation of Lloyd's international offices have the capability to report on GHG emissions related activities. As a result, the Corporation currently collects data from sixteen key international offices, representing 69% of the total employees based outside of the UK, up from 64% in 2015. Emissions for the remaining international employees, and their respective offices, were estimated using an average of tonnes of CO^2e per employee outside of the UK.

The Corporation of Lloyd's works in partnership with Carbon Smart – environmental consultants contracted by the Corporation – to calculate the GHG emissions Corporation global operations. These figures are disclosed publically each year in the 'Lloyd's annual report'. The environmental performance covers all Corporation of Lloyd's entities that meet the criteria of being subject to control or significant influence, and includes 100% coverage of contracted staff worldwide.

The calculations were performed using the principles set out in the World Resources Institute GHG Protocol and follows the Department for Rural Affairs (Defra) guidelines on how to report.

Methodology

The GHG accounting and reporting followed the principles of relevance, completeness, consistency, accuracy and transparency. Carbon Smart apply these principles when collecting, reviewing and performing the GHG emission calculations as part of: defining organisational and operational boundaries, verifying the integrity of data, checking the data audit trail and finally performing the calculations.

The data for 2016 was collected, verified and calculated in accordance with the requirements of the following standards:

- World Resources Institute (WRI) Greenhouse Gas (GHG) Protocol (revised version).
- Defra's Environmental Reporting Guidelines: Including mandatory greenhouse gas emissions reporting guidance, October 2013.
- The UK and international office emissions have been calculated using the Defra 2016 issue of the conversion factor repository. This work is partially based on the country-specific CO^2 emission factors developed by the International Energy Agency, © OECD/IEA 2016 but the resulting work has been prepared by Carbon Smart and the Corporation of Lloyd's and does not necessarily reflect the views of the International Energy Agency.
- Emissions associated with air travel meet the reporting requirements for carbon offsetting with Natural Capital Partners, air travel emissions include the application of an 6% uplift factor to take into account indirect routing. The reported air travel emissions do however exclude the impact of radiative forcing as there is currently scientific uncertainty over the multiplier and its appropriate factor.

For more insight into the quality and reliability of the Corporation of Lloyd's GHG emissions inventory please visit the opinion statement issued by Carbon Smart.

Results

The Corporation of Lloyd's total reported GHG emissions from business activities in 2016 was 13,578 tonnes of CO_2e, a decrease of 8% against 2015 figures. This has been driven by the range of projects outline in this report and in particular by reductions in the emissions from global electricity consumption and air travel, which accounted for 65% and 10% of global emissions respectively.

The Corporation of Lloyd's offsets air travel emissions by buying carbon credits for carbon offset projects through Natural Capital Partners. In 2016 carbon credits were purchased for the Sabah Rainforest Rehabilitation Project in Malaysia and an "improved cookstoves" project in India. The following details were provided by Natural Capital Partners:

- Sabah Rainforest Rehabilitation Project rehabilitates logged rainforest in the State of Sabah in Malaysian Borneo through improved forest management activities as well as avoiding a second round of logging. In the absence of the project, the forest would be re-logged and would only slowly recuperate due to high quantities of vines and climbing bamboos suppressing the remnant tress. The project protects a number of endangered trees species and provides an enlarged habitat for migrating species in the local conservation area. It has encouraged the return of various bird species to the area, alongside orangutans, Sun bears and Pygmy elephants. The project also employs more than 50 people.
- India Improved Cookstoves: The Corporation of Lloyd's supported this project in 2015, and has renewed support of the project. India uses the greatest amount of fuel wood globally with 88% of rural households using sold fuel for cooking. This means that over 900 million people are exposed to indoor pollution on a daily basis. The project in India has distributed 490,000 stoves since 2008. The stoves are designed to make them 60% more fuel efficient and significantly more durable than traditional stoves. The stove's widespread distribution ensures that the health and financial benefits from the reduced pollution, fuel costs and collecting time can be scaled up across India.

As in 2015, the Corporation of Lloyd's are dual reporting scope 2 emissions emanating from electricity consumption. Location-based scope 2 emissions are calculated using a conversion factor based on the average grid mix in each location (issued by Defra in the UK). Market-based scope 2 emissions are calculated using a conversion factor specific to the electricity purchased by the Corporation.

The following studies from the Corporation of Lloyd's in this principle section illustrate a range of initiatives across different departments of the organisation, and a full breakdown of the action plan has been provided to the external reviewers for reporting.

Forward planning

The Corporation of Lloyd's will review the coming year's options to expand reporting across all offices, and therefore further improve the accuracy of the Corporation's carbon footprint. This plan comes in part from the Environmental Working Group, which meets every four months to develop and monitor progress against an environmental action plan for the Corporation.

This group is composed of representatives from the following Corporation teams: Operations, Property Services, IT, Catering, Innovation, Supplier Management, and Corporate Social Responsibility, and is sponsored by Shirine Khoury-Haq, Chief Operations Officer. The primary objective for the group is to measure and seek to reduce the environmental impact of the internal operations and physical assets under the Corporation of Lloyd's control. The Environmental Action Plan focuses on energy consumption, waste, transport and procurement.

Evidence also applies to principle(s): 5.2, 5.3, 5.4, 6.1

Source: The Corporation of Lloyd's

The Lloyd's market / ArgoGlobal / Responsible global citizen

In support of its commitment to influence the potential negative impact of climate change, Argo Group has now included a climate change as a part of its review and development of its internal sustainability plan that was established during 2015-2016 and continued into 2017.

A significant investment has continued to be made since 2014 into the use of Video Conference (VC) technology with the aim of enabling meetings with less need for travel, which has been communicated to staff. Initial analysis is positive, with an increase in VC usage over this period, and a resultant reduction in air travel.

Argo Group continues to underscore its role as a responsible corporate citizen by being sensitive to the implications of climate change and is making an effort to minimize the environmental impact of its office services, facilities and technology operations. A recycling program has been established in many of our U.S. based office locations and to the greatest extent possible, Argo Group US business entities operate in a "paperless" environment. As the Argo Group US office leases expire, in accordance with the applicable provisions of our sustainability plan attempts are being made to target "green buildings" for Argo Group US office space leasing purpose and to also include energy efficient requirements in lease negotiations and agreements. This has been included as a specific due diligence checklist item for office selection purposes.

During 2017 Argo Group committed to relocating its New York offices, looking for an expanded floor area from 17,000 square feet to 45,000 square feet to support growth in its Manhattan-based digital product team, as well as other expanding business units. Rick Artessa, SVP – Operations noted that environmental sustainability as an important aspect in the real estate selection process and the move to 413 W. 14th Street in the Meatpacking District is into a Benchmarked facility.

ArgoGlobal have continued to embed the initiative started in 2016 to promote recycling of printer toner cartridges throughout the Argo Group's US offices.

Corporate sensitivity to climate change implications also extends to some of the Argo Group US significant third party vendors, who are committed to reducing the environmental impact of their business operations. Sungard is one such third party vendor that considers sustainability issues such as climate change as an important aspect of its corporate sensitivity.

Evidence also applies to principle(s): 1.4, 2.2, 5.1, 5.4, 6.1

Source: ArgoGlobal: Syndicates 1200 and 1910

The Lloyd's market / Chubb / Chubb 2016 UK energy and emissions management

One of the primary objectives of Chubb's Corporate Environmental Programme is to measure, record and reduce the GHG emissions from our own operations. As an insurance company, Chubb has a modest environmental footprint. However, we aim to reduce our mark on the environment even further. This includes efforts to reduce the direct and indirect GHG emissions generated from heating, cooling and lighting our offices and from company owned or leased vehicles, as well as the reduction, reuse or recycling of resources.

Between 2006 and 2012, a period that preceded ACE Limited's January 2016 acquisition of The Chubb Corporation and adoption of the Chubb name, GHG emissions at ACE were reduced nearly 30% per employee, far exceeding the original goal of an 8% reduction per employee. In addition, in 2014, ACE set a new companywide goal to reduce GHG emissions 10% per employee by 2020 from a 2012 base year. The new Chubb is committed to reducing its overall environmental impact and plans to announce an updated GHG reduction goal for the combined company in 2017.

Chubb continues to reduce its global environmental impact by encouraging internal operations to manage energy usage through a Corporate Energy Policy that encompasses UK facilities.

In support of the new global reduction goal, Chubb created a targeted plan to address energy consumption at the European level through the Chubb European Group Energy Policy. The Chubb European Group Energy Policy aims to increase transparency, accountability, and organisational awareness about energy reduction and reducing GHG emissions. Targeted emissions reductions and a clear outline of the company's commitments will encourage innovation and make energy management a priority for the organisation at the European level. The contents of the policy include: a corporate policy statement, short-term objectives including a reduction target, a statement of commitment regarding management issues, procurement issues, financial issues and technical issues, and a log to track performance year on year. As an appendix to this document, Chubb has also designed a checklist for evaluating all new real estate leases, as well as a section that summarises proposed energy efficiency projects.

In coordination with the energy policy, Chubb has invested in energy surveys for one of Chubb's largest buildings located in the UK.

The main long-term goal of the policy is to increase efficiency of Chubb's facilities and therefore reduce GHG emissions. Another long-term goal is to create a framework of objectives that can be used as a model for other regions of Chubb's business. Lastly, Chubb is interested in formalising tracking and reporting on progress of achieving these energy reduction goals as well as tracking how implemented energy efficiency projects have achieved their calculated energy savings and return on investment. This translates into regular status updates the include stakeholders at the company.

Another initiative that started in 2016 was the purchase of renewable energy for 100% of Chubb's offices in the U.K. In total, from July 2016 to December 2016, 4,553 tons of CO^2e was avoided due to this purchase of renewable energy.

2015 vs 2016 Emissions Report[c]

Breakdowns	2015	2016
UK Facility Emissions	5,462 tCO^2e	5206 tCO^2e
Number of UK Employees	1794 FTE	1976 FTE
Emissions per Employee	**3.04 tCO^2e/FTE**	**2.63 tCO^2e/FTE**

During the most recent status update reflecting 2016 operations, the UK reduced absolute emissions by 13% from 2015.

Evidence also applies to principle(s): 5.3, 6.1, 6.2

Source: Chubb

The Lloyd's market / Chubb / Chubb UK offices recycling programmes

Chubb have recently reviewed their cleaning contract across 8 of the UK sites. A major factor within the tender process was the importance placed around waste and how it could be further improved and streamlined. Chubb wanted to increase both; performance and awareness among staff. The chosen provider demonstrated an appetite to reenergise the management of the waste within contract and were selected on this basis rather than cost. The new company are in the process of launching a new awareness campaign within Leadenhall Street to help increase staffs awareness on food waste. Food bins have been placed strategically on each floor and within each kitchen or tea point to encourage staff to segregate waste at source which is by far the most effective method for improving recycling. No material is sent to landfill to become permanent waste; any material that cannot be recycled is converted to energy in order to reduce our dependence on fossil fuel based energy, either through anaerobic digestion or by incineration.

Waste data is reported on monthly basis and already in first month the mixed recycling within London increased from 38% to 54% (April to May). This resulted in 24 trees and 5,640 kg of CO_2 being saved just in the month of May.

The improvement continued in June whereby the recycling rate increased to 60% and through the new drive in food awareness a total of 49 fair share meals were created compared to just 3 in April. Based on the trend Chubb would expect to see their recycling rate for London increase to around 70% for the second half of the year. This would generate around 33 tonnes of recyclable waste across a 6 month period.

Chubb are also looking to target a minimum of 50 fair share meals being created each month for the second half of 2017. Furthermore, an estimated 150 trees and 35,000 kg of CO^2 will have been saved in the Q3&4 in 2017.

Chubb recycles its paper separately from other waste, and across the 9 recorded UK sites 22,218 kg's of paper have been recycled saving a further 12,993.60 kg's of CO^2 and 368 trees in Q2 2017 alone.

Evidence also applies to principle(s): 5.1, 5.4, 6.1, 6.2

Source: Chubb

[c] 2015 and 2016 emissions have been verified by a third party, a verification document can be provided by Chubb on request.

The Lloyd's market / Chubb / Chubb improves environmental ranking on Newsweek Green 2016 list

Chubb has been named one of the top green companies in the world by *Newsweek* magazine in its annual ranking of the world's largest companies on corporate sustainability and environmental impact.

Based on ACE data measuring environmental performance in areas including waste reuse and recycling, water usage and greenhouse gas emissions, the company ranked 268 among Newsweek's top green companies in the world —an improvement over its 2015 ranking of 272.

The Newsweek Green Rankings are one of the world's most recognised assessments of corporate environmental performance. The U.S. 500 study ranks the 500 largest publicly traded companies in the United States by market capitalisation, while the Global 500 study looks at the 500 largest publicly traded companies globally by market capitalisation. Companies are compared against their industry group peers and the rankings are reviewed by a panel of leading sustainability practitioners.

Evidence also applies to principle(s): 5.1, 5.3, 5.4, 6.1

Source: Chubb

The Lloyd's market / Chubb / Evaluating our activities and taking action

Implementation of Paper Free Policy Documentation

In continental Europe alone, Chubb issues 395,000 sheets of paper worth of property and casualty policy documents per year. In order to reduce its carbon footprint, Chubb has committed to the implementation of paper free policy documentation. Although it was already the case in many countries, the e-issuance project, set to be fully implemented by the end of 2017, will mean that unless prohibited by local laws policy documents will only be delivered electronically. This will save the aforementioned sheets as well as all waste associated with their delivery amounting to approximately 25 trees worth of paper and 14 tonnes of CO^2.

Canon uniFLOW Printing Solutions

Chubb has subscribed to the Canon uniFLOW printing service, which provides centralised networked printing. As well as this, uniFLOW monitors, records and reports on the companies printing requirements; from how many documents and pages are printed, to individuals with the highest printing usage. Using this service, Chubb has determined the environmental cost of printing and endeavours to reduce its paper consumption. The following table details the paper usage in terms of single or double-sided printing:

Environmental impact	**0%**	**58.21%**	**Saving**	**100%**	**Waste**
Total sheets used	1,958,902	1,385,269	573,633	1,079,903	305,366
Total reams of paper used	3,917.80	2,770.54	1,147.27	2,159.81	610.73
Total reams of paper used / year	15,888.87	11,236.07	4,652.80	8,759.21	2,476.86
Total weight of paper / year (Kg)	39,722.18	28,090.18	11,632.00	21,898.03	6,192.14
Equivalent number of trees / year[d]	953.37	674.19	279.18	525.57	148.62
Greenhouse gases / year (Kg)[e]	67,964.65	48,062.29	19,902.36	37,467.53	10,594.76

[d] Source: Conservatree.org

[e] Source: Environmental Defense Fund Paper Calculator – 100% post-consumer recycled uncoated freesheet

Waste water / year (litres)[e]	119,734.57	84,672.22	35,062.35	66,007.24	18,664.98
Solid wastes / year (Kg) [e]	23,614.84	16,699.61	6,915.23	13,018.38	3,681.23

In quarter 1 of 2017 58% of all printing was performed using double sided sheets, saving 573,633 sheets of paper. However thanks to uniFLOW, Chubb now knows that is not the full picture and a further 305,366 sheets could have been saved. Using this information Chubb can increase awareness of the need to print double-sided amongst its staff.

With uniFLOW, printing requires users to confirm documents to print at the printer itself. This has resulted in reducing the number of wasted printouts by over 11% in Q1 of 2017 (*see below*). This represents nearly 250,000 pages, or an estimated 175,000 sheets, that would have been printed being saved. If it can be assumed the rate of deletion remains constant throughout the year, this will result in just short of 1,000,000 pages being saved; representing a saving of 85 trees a year.

Deleted pages analysis

Description	Statistics
Total pages	**1,958,902 (88.79%)**
Deleted (manual)	154,720
Deleted (maintenance)	90,924
Deleted (license exceed)	0
Deleted (unknown user)	1,640
Deleted (ACL restriction)	0
Deleted (budget exceeded)	0
Deleted (produce availability restriction)	0
Deleted (unknown reason)	0
Total deleted pages	**247,284 (11.21%)**

In total Chubb will have saved 748,504 pages this quarter. But with this information provided by Canon UniFLOW, Chubb can improve quarter by quarter reducing paper usage and wastage.

Evidence also applies to principle(s): 5.1, 5.4, 6.1, 6.2

Source: Chubb

The Lloyd’s market / MS Amlin / Measuring and taking action

In 2015 MS Amlin appointed Cushman & Wakefield, a leading global private commercial property services company, to provide facilities management services to our head office in The Leadenhall Building and our hub office in Chelmsford. This decision consolidated our facilities management requirements, whilst also increasing our efficiency in assessing and reporting on the environmental impact of our operations.

Cushman & Wakefield measured MS Amlin's carbon footprint in 2016 through the Carbon Disclosure Project (CDP). MS Amlin has completed the CDP submission and is awaiting the results. We anticipate a promising result in light of consolidating our property assets to ensure that we are operating as efficiently as possible. Going forward we will aim to continue collating the information required for CDP reporting on an annual basis.

We are pleased to report that both of our offices in Chelmsford and London carry a high rating under the Building Research Establishment's Environmental Assessment Method (BREEAM) 1, which is the world's foremost environmental assessment method and rating system for buildings, setting the standard for best practice in sustainable building design, construction and operation.

BREEAM has become one of the most comprehensive and widely recognised measures of a building's environmental performance. A BREEAM assessment uses recognised measures of performance, which are set against established benchmarks, to evaluate a building's specification, design, construction and use. The BREEAM addresses wide-ranging environmental and sustainability issues and enables developers, designers and building managers to demonstrate the environmental credentials of their building.

At our head office in The Leadenhall Building, MS Amlin's London Facilities team received a Gold Award in the 2016 Clean City Awards. This is a scheme organised by the City of London Corporation to promote good waste management practices, encourage waste minimisation and promote recycling and reuse initiatives. There are three levels of award - Merit, Gold and Platinum. This is the first year that MS Amlin participated and it provides a good baseline for improving recycling initiatives and waste management together with reducing the energy consumption across the MS Amlin campus.

Forward planning

We will continue to monitor our environmental impact; working with our delivery partners to reduce waste streams, improve recycling rates and lower our overall carbon footprint. Whilst the impact of Brexit is still unknown, we will take the necessary steps to comply with the EU Non-Financial Reporting Directive, as well as compliance with Article 8 of the European Commission's Energy Efficiency Directive.

Looking forward we will also be reviewing our monitoring of the use of lighting, air and water flow rates, as well as electrical consumption, to ensure our environmental infrastructure is running and being maintained to the most efficient standards for our occupiers whilst minimising our carbon footprint across our office spaces.

Evidence also applies to principle(s): 5.1, 5.3

Source: MS Amlin

The Lloyd's market / Navigators Underwriting Agency Limited / Reducing our footprint

Navigators in London continue to derive the benefit of a move to new premises in December 2015. Features associated with this new building on a brownfield site have been reported in previous submissions (*see below*), and Navigators in London has an expectation of sustainable reduction in our carbon foot-print as a result of this move:

The move took place in December 2015, and the building is of recent construction and is located on a former brownfield site, where reuse of piles gave a 1,000te of carbon savings.

Other construction features include:

- *Façade fittings to enhance solar gain control.*
- *Optimized building fabric thermal insulation values to reduce heating loads in winter.*
- *Grey and rain water harvesting for toilet flushing.*
- *Green roofs for attenuation and thermal buffer.*
- *Measured improvement over building regulations Part L2A 2006 requirements.*
- *BREEAM 2008 'excellent' rating.*

Navigators have an expectation of a significant and continued reduction in our carbon foot-print as a result of this move.

The office was offered and used for the first roundtable for the ClimateWise Investing for Resilience work stream, held on 28 January 2016, which Navigators have contributed towards.

Evidence also applies to principle(s): 4.1, 5.4, 6.1

Source: Navigators Underwriting Agency Limited (Navigators)/NavTech

The Lloyd's market / QBE European Operations / Environmental management

QBE European Operations, Corporate Real Estate (QBE EO CRES) has primary responsibiltiy for the management and maintenance of QBE's European office infrastructure – physical assetts and internal operations.

QBE EO CRES has, since 2007 developed and implemented procedures and infrastructure for monitoring and reporting of Environmental Key Performance Indicators (EKPIs) for QBE's European offices. QBE EO monitors a range of EKPIs including resource consumption (energy, water, office paper, business travel etc.) and greenhouse gas emissions in order to identify opportunities to improve performance, support decision making and also to provide the data for internal and public disclosure of QBE EO's corporate 'carbon footprint'[f].

CRES EO, produces quartely Environmental KPI reports and Environmental Inventories that collate EKPI data for QBE's European offices to improve environmental management through an on-going 'rolling programme'. The reports identify data gaps and limitations and actions required to facilitate development and maintenance of a robust reporting system. The Inventories calculate greenhouse gas emissions associated with QBE EO's offices in accordance with the World Business Council for Sustainable Development / World Resources Institute Greenhouse Gas Protocol; and provide an 'audit trail' for environmental reporting to QBE Group Environmental, Social and Governance.

Specific QBE EO initiatives to reduce adverse environmental impacts include:

- Consolidation of QBE's office space at the Chelmsford office. The Chelmford office orginally consisted of two separate buildings, which were combined to form the QBE office. However, reduced space requirements have allowed the buldings to be reinstated to their original configuration, which the intention that one building is occuped by QBE and the other sub-let. QBE consolidated its staff to one building during 2016, allowing the other building to be refurbished. QBE then moved into the refurbished building during Q1 2017, allowing the other half to be closed and decomissioned for future sub-let. The overall impact of this will be improved office facilities for our Chelmsford staff, reduced costs for QBE and improved efficiency of resource consumption for the site with consequent reduced adverse environmental impact.
- QBE EO is also a participant in the Energy Savings Opportunity Scheme (ESOS), undertaking audits to identify opportuniteis to improve. ESOS has now entered its second compliance period and QBE isplanning the audit programme and opportunities to reduce energy consumption and / or improve energy efficiency.

Evidence also applies to principle(s): 5.1, 5.3, 5.4, 6.1

Source: QBE European Operations

[f] QBE EO Quarterly Environmetnal Reports are posted on QBE EO's intranet page 'The Environment'.

The Lloyd's market / Tokio Marine Kiln / Reduce environmental impact of the internal operations and physical assets under our control

We have engaged AECOM to support and document our environmental reporting on an ongoing basis. In 2016, waste arising out of TMK's head office in London consisted of:

Waste stream	TMKG 20 Fenchurch Street waste arisings / Kg	Waste reused or recycled / Kg
Mixed dry recyclables	46,389	46,389
Food waste (general office waste)	505	505
Residual waste (general office waste)	1,614	0
Toner cartridges	146	146
Glass waste	548	548
Confidential waste	23,779	23,779
Time served archived material	0	0
Waste Electrical and Electronic Equipment	1,262*	900*
Batteries	10	10
Total / Kg	**74,253**	**72,277**

Overall, the table shows that we have reused/recycled 97% of our waste in 2016. The waste statistics available from AECOM include:

- General office waste is segregated in to recycling bins. Dry recyclable waste in 2016 was 46,389kg.
- 2016 food waste was 505 kg
- 146kg of printer cartridges were recycled during 2016
- Glass waste in 2016 was 548 kg
- Residual waste was 1,614 kg
- Total confidential waste recycling which are securely destroy was 23,779 kg
- Redundant IT equipment was 1,262kg of which 70% was recycled
- 10kg of batteries were recycled in 2016
- No large items of furniture have been removed however any previously redundant furniture is donated to a charity "We Clear Junk"
- Of the total 3,667kg of paper used, 100% had Forestry Stewardship Council (FSC) certification

The building management group, which TMK has a representative on, continues to look at ways to improve the environmental efficiencies of the wider building.

- All drinking water used by TMK is produced (from mains supply) on-site. As such, we do not purchase bottled water, which reduces glass or plastic bottle waste and also adverse impacts associated with delivery.
- Office lighting is movement sensitive, and switches off when no one is in an area.

- TMK employs power saving devices on computers (monitors go off after 20 minutes if unused, and our virtual desktop Wyse terminals consume less than 10% of the power of a standard PC, as well as generating significantly less heat).
- Use of virtual desktops also reduces the amount of hardware required and the amount of space and power required for servers.
- TMK is supporting the change of electricity supply contract to use electricity derived from certified renewable sources.

Within our day-to-day operation, TMK has set all of the group printers to default to duplex copying and we encourage colleagues not to print unless they really need to do so. We have also introduced secure printing, meaning that no print jobs are released unless the user swipes their security pass. This has reduced regular paper consumption considerably. Since 2012, we introduced electronically and secure distribution of board papers.

Since 2013, we issued payslips on line, and experimented with reducing the number of legal disclaimers which appear when we print emails, and setting the default print range of emails to just one page. TMK has also replaced paper Christmas cards with e-cards since the last few years. We recognised that these initiatives are ongoing and we continue to review periodically at ways to reduce our paper consumption. We monitor and report our paper consumption / usage.

Evidence also applies to principle(s): 3.3, 4.3, 5.1, 5.3, 5.4

Source: Tokio Marine Kiln: TMK facilities management and BREEAM certificate and ESOS, AECOM audit reports are available upon request.

5.3 Disclose our direct emissions of greenhouse gases using a globally recognised standard.

The Corporation of Lloyd's / Greenhouse gas emissions

In the 2015-16 reporting evidence was provided regarding the continual tracking of the Corporation of Lloyd's Greenhouse Gas (GHG) emission tracking. The Corporation works with Carbon Smart – environmental consultants contracted to support the Corporation in this area – to calculate the GHG emissions from global operations following internationally recognised standards. 2015 marked the third year in which the Corporation has reported the GHG emissions inventory of our international offices in addition to that of the UK, and sees those initiatives continuing to engage with their resource consumption. The Corporation's total reported GHG emissions from business activities in 2015 were 14,831 tonnes of CO2e.

2016 marks the fourth year in which the Corporation of Lloyd's is reporting the GHG emissions inventory of international offices in addition to that of the UK, and sees those hubs continuing to engage with their resource consumption. There are direct KPIs in the Corporate Social Responsibility priority that cover these efforts. These figures are reported publically in the Corporation of Lloyd's annual report, and made available online in the environmental section of the public website.

Results

The Corporation of Lloyd's total reported GHG emissions from business activities in 2016 are 13,578 tonnes of CO_2e consisting of:

GHG emission tracking

	Scope 1 (tonnes CO^2e)	Scope2 (tonnes CO^2e)	Scope3 (tonnes CO^2e)	Out of scopes (tonnes CO^2e)	Lloyd's total 2016 GHG emissions (tonnes CO^2e)	Lloyd's total 2015 GHG emissions (tonnes CO^2e)
UK	1,574	7,990	2,828	<1	12,393	13,577
International offices	18	818	350	-	1,186	1,254
					13,578	**14,831**

The Corporation of Lloyd's total reported GHG emissions from business activities in 2016 were 13,578 tonnes of CO_2e, a decrease of 8% against 2015. This has been driven by reductions in the emissions from global electricity consumption and air travel, which account for 65% and 10% of global emissions respectively.

As in 2015, the Corporation of Lloyd's continue to dual report scope 2 emissions emanating from electricity consumption. Location-based scope 2 emissions are calculated using a conversion factor based on the average grid mix in each location (issued by Defra in the UK[g]). market-based scope 2 emissions are calculated using a conversion factor specific to the electricity purchased by the Corporation. Scope 2 location-based and market-based emissions are shown in the table below:

Scope 2 location based emissions[h]

	Scope 2 – location-based (tonnes CO^2e)	Instrument type	Scope 2 – market-based (tonnes CO^2e)	Instrument type
UK	7,990	National grid average emission factor (issued by Defra)	0	Supplier emission factor (100% renewable energy used)
International offices	818	Various national grid average emission factors (issued by Defra & International Energy Agency)	841	Various national grid average emission factors (issued by Defra & International Energy Agency)
Total	8,808		841	

The Corporation of Lloyd's total location-based scope 2 emissions are reported as 8,808 tCO_2e whilst market-based scope 2 emissions are 841 tCO_2e. 100% of the electricity consumed by the Corporation of Lloyd's in the UK, which represents 92% of electricity consumed globally, is sourced renewably, which therefore has an associated conversion factor of zero. To avoid confusion and ensure a consistent approach with previous years, the Corporation of Lloyd's has chosen to report location-based emissions, which is the methodology used to calculate historical scope 2 emissions since 2007.

A further breakdown of the Corporation of Lloyd's emission performance is detailed overleaf.

– Energy efficiency improvements in the UK led to a 2% fall in electricity consumption. Coupled with continued decarbonisation of UK grid electricity, reflected in a lower conversion factor issued by Defra, electricity emissions fell by 11%.

[g] The emissions have been calculated using the Defra 2016 conversion factors. This work is partially based on the country-specific CO2 emission factors developed by the International Energy Agency, © OECD/IEA 2016 but the resulting work has been prepared by Carbon Smart and Lloyd's and does not necessarily reflect the views of the International Energy Agency.

[h] All totals have been rounded to the nearest whole number

- Scope 1 emissions rose by 24%, caused largely by a 15% increase in natural gas used in the UK, which occurred due to a colder winter.
- Air travel emissions saw a significant decrease of 17% on 2015. This was driven by several factors. Most importantly the total distance flown by Corporation employees decreased by 10%.
- In addition, the proportion of flights flown in economy has increased whilst the Defra-issued aviation conversion factors fell by an average of 2%. The Corporation of Lloyd's offset air travel emissions by buying carbon credits for renewable energy projects through Natural Capital Partners. Details on these projects are provided in principle 5.1.
- GHG emissions from Corporation of Lloyd's international offices decreased by 2% in 2016. Data accuracy continued to improve in 2016 with more offices reporting actual data. The Frankfurt, Warsaw, Stockholm, Dublin and Hong Kong offices submitted data for the first time this year, bringing the total number of global offices reporting to sixteen.
- As a result, 69% of international Corporation employees are now captured by reporting offices; this is up from 64% in 2015.

Evidence also applies to principle(s): 5.2, 6.1, 6.2

Source: The Corporation of Lloyd's

The Lloyd's market / ArgoGlobal / Operational boundary

All figures in the table below relate to Exchequer Court, 33 St Mary's Axe, London EC3A 8AA.

ArgoGlobal rents a number of desks in the "Underwrirting room" at Lloyd's One Lime Street - these have not been included in the table below as they fall completely within the operational control of the Corporation of Lloyd's, and have been included within the UK Coporation GHG inventory found within this principle section.

ArgoGlobal emissions

Description	**2017 (t CO^2e)**	**Comment**
Emissions from refrigeration and air conditioning equipment	0	
ArgoGlobal has no other direct emissions	-	ArgoGlobal does not own or lease any vehicles
Scope 2 Indirect Emissions - purchased electricity/steam/heat		
Electricity	236.872	
Steam/heat	0	
TOTAL	236.872	
Scope 3 Indirect Emissions - purchased electricity (leased premises)		
Not applicable - all emissions from leased premises are included in Scope 2 above	-	
Scope 3 Indirect Emissions - other sources		
ArgoGlobal has chosen not to report on these emissions at this point in time.	-	

Evidence also applies to principle(s): 5.1, 5.2

Source: ArgoGlobal: Syndicates 1200 and 1910

The Lloyd's market / QBE European Operations / Quantum of emissions

QBE Group is a participant in the annual Carbon Disclosure Project.

QBE Insurance Group Limited reported global greenhouse gas emissions of 52,762 tonnes carbon dioxide equivalent (tCO_2e) for 2016, down from 53,737 tCO_2e reported in 2015.

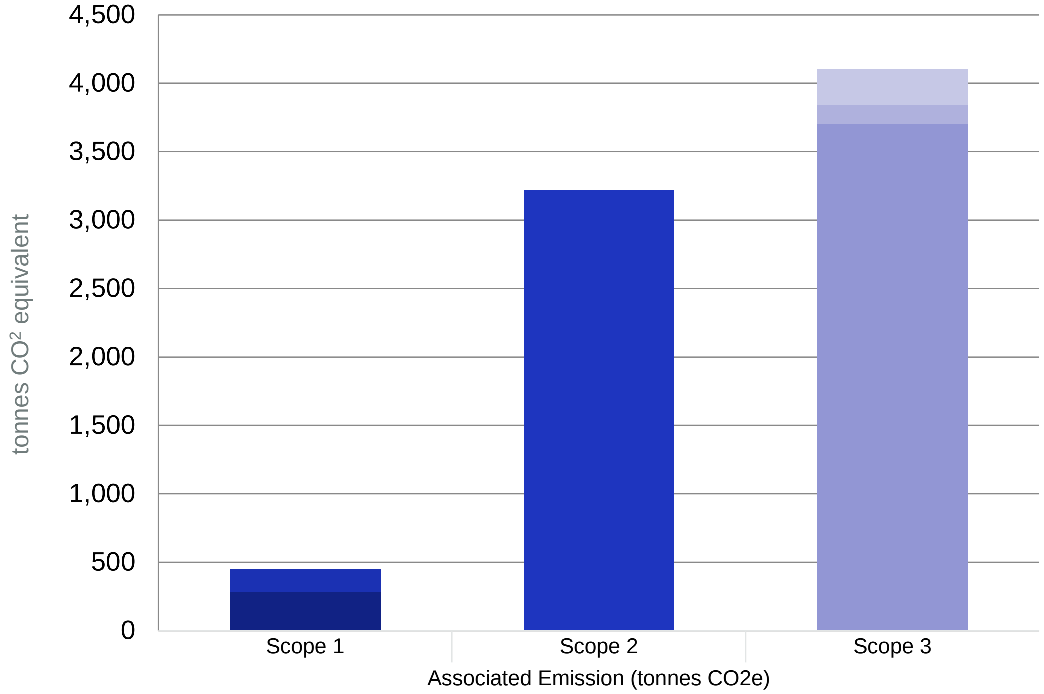
Corporate Real Estate (QBE EO CRES) has primary responsibiltiy has primary responsibility for identifying, monitoring, reducing and reporting environmental impacts from QBE European Operation's physical assets and internal activities.

CRES EO has, since 2007 developed and implemented reporting procedures and infrastructure for monitoring and reporting of Environmental Key Performance Indicator (EKPI) data for it'QBE's European offices. CRES EO collates and reviews data provided by the company's European offices on a quarterly basis. Quarterly reports summarise a range of EKPI, including greenhouse gas emissions, providing the data for internal and public disclosure of QBE EO's corporate 'carbon footprint'.

QBE European Operations report 2016 greenhouse gas emissions of 7,772 tonnes carbon dioxide equivalent (CO_2e), a decrease of 8.5% from 2015 (8,491 tCO_2e). The fall in reported emissions is due to reduced Scope 1 and 2 emissions, with Scope 3 emssion increasing slightly.

2016 GHG emissions are broken down by scope and source below:

Reported greenhouse gas emissions (CO2e) for 2016



	Scope 1	Scope 2	Scope 3
Emissions arising from T&D of Electricity	0.00	0.00	260.57
Emissions arising from rail travel			143.40
Air travel			3,700.65
imported heat and steam		0.00	
Imported electricity		3,218.86	
Car use	161.06		
Air conditioning and fire suppression equipment	3.55		
Back-up generators	0.09		
Boilers	283.41		

Scope of Reporting

The QBE EO scope of reporting covers direct environmental impacts associated with 40 QBE offices located in 17 countries, with approaching 2,000 employees.

Reporting is based on operational control. QBE's European offices are generally leased with shared tenancy; building services such as boilers, back-up generators and centralised cooling systems are generally managed and controlled by the landlord or landlord's agent under a service contract.

The scope of reporting is consistent with previous years.

Method of calculation

Greenhouse Gas emissions associated with our European offices are calculated in accordance with the World Business Council for Sustainable Development / World Resources Institute Greenhouse Gas Protocol and applicable UK Government guidance for company reporting. GHG emissions associated with the activities of QBE EO are, where possible, calculated using the 2016 UK Government conversion factors for 'Total Direct GHG' i.e. carbon dioxide, methane and nitrous oxide. However, 2016 emissions associated with electricity from non-UK locations have been calculated using 2015 emission factors as the UK Government no longer provides access to emission factors for 'overseas electricity'. QBE EO is looking at alternative sources of emission factors for non-UK grid electricity.

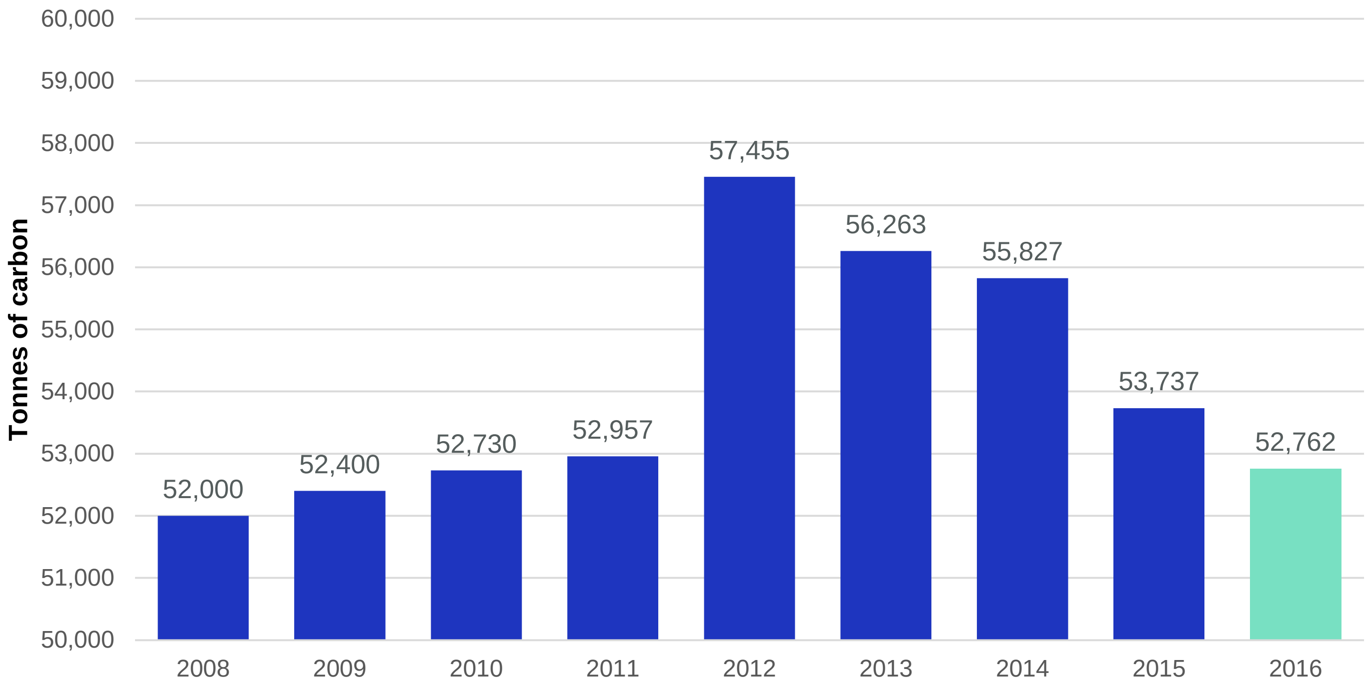
Data Assurance and forward planning

QBE works with an external consultant on an on-going basis. The consultant, Dr David Smith, FIEMA, Technical Director for Business Sustainability at AECOM, supported the design and evolution of the data management system and continues to review source data, calculations and opportunities.

During Q4 2016 QBE Group's Environmental and Social Governance (ESG) redesigned the GHG data collection process to more accurately report emissions, these changes will be implemented through QBE EO's reporting during 2017.

QBE's 2016 Corporate Governance Statement is made publically available online and provides the following summaries of annual Group carbon emissions and measures of environmental footprint.

QBE Group GHG Emissions / tCO_2e – year on year tracking



Description	2016	2015	2014	2013
Total GHG emissions (tCO2-e)	52,762	53,737	55,8727	56,263
Number of employees (FTE)	14,266	14,532	14,084	15,455
GHG emissions (tCO2-e)/FTE	3.71¢	3.70¢	3.96¢	3.64¢
Electricity usage in QBE offices (MWh)	41,813	49,402	53,981	52,851
Water consumption in QBE offices (kL)	183,906	-	-	-
Office paper (tonnes)	505	-	-	-
Recycling rates (% of waste)	46%	-	-	-

QBE acknowledges the impact that our business has on the environment. An area of focus for the ESG Committee is to deliver continual improvement in the way that we report on this impact.

During the 2016 reporting period, as part of our continual improvements in ESG reporting, QBE re-designed our greenhouse gas (GHG) data collection process to more accurately report the level of our emissions. This included gathering more granular data and expanding the array of Scope 3 emissions disclosed. Additionally, for the first time, QBE has engaged Deloitte to provide limited assurance on our 2016 reported GHG data.

Consistent with prior years, the QBE Group GHG emissions data has been prepared based on:

– QBE's ESG Reporting – Greenhouse Gas Emissions Reporting Framework and other internal policies and procedures.
– The Greenhouse Gas Protocol's Corporate Accounting and Reporting and Corporate Value Chain (Scope 3) Accounting and Reporting Standards.

The Group's GHG emission reporting is driven by our global insurance operations across the world. The GHG emissions are calculated using the energy content and emission factors that were relevant to each region in which we operate and sourced from the following departments:

– Australian National Greenhouse Accounts (NGA)
– UK Government's Department of Environmental Food and Rural Affairs (DEFRA) and Department of Energy & Climate Change (DECC) Greenhouse Gas Conversion Factors for Company Reporting 2016
– US Environmental Protection Agency (EPA)
– International Energy Agency (IEA)'s CO2 Emissions from Fuel Combustion 2016 Edition

The Group's GHG emissions inventory comprises of:

– Scope 1 – Direct emissions: direct greenhouse gas emissions from fuel consumption and mileage from company cars, as well as natural gas consumed for office building heating
– Scope 2 – Indirect emissions from electricity consumption
– Scope 3 – Other indirect emissions related to business travel (air, rail and land), waste disposal including recycling and water consumption

Greenhouse Gas Emissions by Scope (tonnes per carbon dioxide equivalent – tCO^2-e)

Description	December 2016	December 2015	December 2014	December 2013	December 2012
Scope 1 - Direct emissions [2]	8,686	12,400	11,144	10,777	1,160
Scope 2 - Electricity consumption[1]	22,324	30,639	33,517	33,639	36,396
Scope 3 - Other indirect emissions [1, 2, 3, 4]	21,752	10,698	11,166	11,847	19,899
Total	**52,762**	**53,737**	**55,827**	**56,263**	**57,455**

1 Estimations were required in certain office locations and activity data streams where actual activity data was not available. Estimations were made based on comparable offices in the same region. QBE aims to increase the availability of actual activity data in future reporting periods.

2 Prior years Scope 1 and Scope 3 emissions were restated to report GHG emissions from fuel consumptions as part of Scope 1 direct emissions. These were previously reported as Scope 3 other indirect emissions.

3 As part of continual improvement on GHG emissions reporting, we reported GHG emissions from waste disposal and water consumptions in Scope 3 other indirect emissions for the first time in 2016.

4 Scope 3 emissions from business air travel in 2016 includes DEFRA's required distance uplift and excludes radiative forcing. Greenhouse gas emissions from air business travels 2015 and prior exclude both distance uplift and radiative forcing.

Further information on how these activities relate to the group sustainability strategy can be found in the QBE 2016 Sustainability report.

Evidence also applies to principle(s): 5.2, 6.1

Source: QBE European Operations

The Lloyd's market / Tokio Marine Kiln / Disclose our direct emissions of greenhouse gases using a globally recognised standard

The 2016 greenhouse gas emissions for TMKG's activities at 20 Fenchurch Street and electricity consumption associated with TMKG's infrastructure at three UK data centres are reported as 3,790.46 tCO^2e.

Reported GHG emissions are primarily derived from electricity consumption (Scope 2 emissions) and business travel (Scope 3 emissions) as follows:

- Scope 1 Emissions: 2.16 tCO^2e
- Scope 2 Emissions: 693.96 tCO^2e
- Scope 3 Emissions: 3,094.35 tCO^2e

The scope of reporting encompasses TMKG's head office at 20 Fenchurch Street and electricity consumption at three UK data centres where TMKG has infrastructure. The scope excludes emissions from the company's smaller offices for which no activity data is currently available.

Evidence also applies to principle(s): 4.3, 5.1, 5.2, 5.4

Source: Tokio Marine Kiln: ESOS, AECOM audit reports are available upon request.

5.4 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.

The Corporation of Lloyd's / Engaging our employees

In 2015-16 reporting, information was presented on the programme of work centred around engaging Corporation of Lloyd's and market staff around the eight strategic priorities that make up Lloyd's Strategy, with examples of year round actions towards supporting Vision 2025.

The Corporation of Lloyd's global sustainability programme supports staff champions across the world to make their local office environments more sustainable as well as encouraging personal action outside of work. To support this Corporation of Lloyd's employees are entitled to three days voluntary leave over a calendar year to take part in volunteer activities.

Employee engagement highlights over the past reporting year include:

1. In 2016 Lloyd's offices in 20 countries participated in employee engagement sustainability initiatives.
2. This has contributed to a reduction of the global carbon footprint by 13% since 2014.
3. In 2016, this reduction was facilitated by 27 separate sustainability projects that were initiated on topics from lighting upgrades to waste audits.
4. To complement this a series of workshops were delivered to Corporation of Lloyd's champions on a range of topics, from how to perform a waste audit to how to incorporate sustainability into procurement.
5. In 2016, 20 Lloyd's offices took part in the United Nation's World Environment Day campaign initiating 153 individual activities. This was an increase of 319% in comparison to the 2015 campaign.

   An example of a blog article from Lloyd's Australia has been made available on the public website to illustrate a sample of activities.

In addition to these examples, Corporation of Lloyd's staff are engaged through a number of avenues in addition to those listed throughout this report. These include:

6. The induction process: New employees are introduced to the strategic priorities from the very beginning as part of their e-learning induction process, which sets out the roadmap to Vision 2025. Within the Corporation Social Responsibility section of the new e-learning module the content describes the Corporation's history with ClimateWise, and provides links to the pages on Lloyd's.com for staff to find out more. These pages have been updated over the 2016-17 reporting year to reflect the 2017 strategy objectives.
7. Lloyd's Community Programme: Corporation and market staff are able to volunteer their time to support a range of programmes in London. This includes assisting community organisations with the up-keep and maintenance of these public spaces with opportunities ranging from giving a hall a deep clean or fresh coat of paint to creating a new community space.

   Corporation of Lloyd's employees are able to take three days separate to their annual leave for volunteer projects, and the number of volunteers for this scheme across the Corporation and market has continued to grow year-on-year.

Number of volunteers from across the Lloyd's market supporting programmes in London

Year	Number of volunteers
2010	1,464
2011	1,514
2012	1,883
2013	1,716
2014	2,087
2015	2,666
2016	2,798

8. Lloyd's Graduate scheme: Climate change awareness is also referenced throughout the 2016-17 Lloyd's Graduate scheme brochure to demonstrate the Corporation aims and strategy in the Corporate Social Responsibility area:

At Lloyd's we develop the complex insurance needed to Empower human progress everywhere. Exploring space. Launching new robotic technology. Protecting against climate change and natural disasters. None of this would be possible without the insurance cover we provide at Lloyd's. As a graduate here, you can help to safeguard enterprise around the world, building resilience for businesses and local communities and strengthening economic growth.

02

Insurance helps to advance social progress

Without it, new technologies wouldn't get off the ground. Business would grind to a halt. And communities across the world would be left vulnerable to risks such as civil unrest and natural catastrophes.

Lloyd's is the global leader in specialist insurance. We do business in more than 200 countries and territories and although we're synonymous with the City of London, 80% of our business comes from outside the UK.

With expertise earned over centuries, we have been able to retain our pre-eminent position due to a combination of our reputation, scale, unique working culture and commitment to innovation. We are known for our integrity, doing the right thing and paying valid claims no matter their scale or complexity. Both the Titanic and, more recently, the Costa Concordia were insured at Lloyd's. And in the wake of the attacks on the Twin Towers on 9/11, Lloyd's syndicates paid out billions of dollars, settling scores of multimillion-pound claims from affected businesses.

Our business lies in responding to new risks from cyber crime to terrorism, driverless cars to digital developments. And that's why we're always looking for new thinkers, so we can stay one step ahead.

03

Our functional programmes

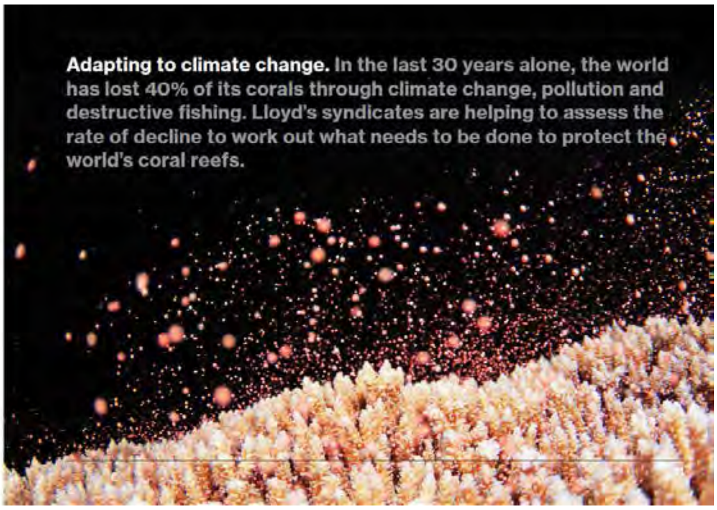
Lloyd's is the world's specialist insurance market. To ensure it runs smoothly we need the most talented professionals, working in a wide range of disciplines. From marketing our services across the globe, to evolving some of the most sophisticated IT systems in the City, these graduate schemes will offer you exciting challenges in your chosen field – and a fascinating insight into the world of specialist insurance.

Schemes are available in a number of functional areas such as **Finance, IT, HR** or **Marketing.** They all operate on a rotational basis, so you'll enjoy great variety during the 24 months you're with us, as you build your skills and experience within your professional discipline.

You'll emerge from the programme as a confident and marketable professional.

With our support, you'll have developed your communication and leadership skills, as well as having acquired a key rofessional qualification. Not only will you have stretched and surprised yourself, you'll have made a real contribution to an organisation that's ensuring human progress – both social and economic.

10



We take our corporate responsibilities very seriously, be they social, ethical or environmental.

Helping communities thrive

Lloyd's Corporate Social Responsibility supports local communities around the world through our programmes.

In London last year over 2,600 people working in the Lloyd's market volunteered their time as part of Lloyd's Community Programme. These volunteers provide everything from literacy support for primary school students to employability skills training. It helps us to build a pipeline of young diverse talent who can access careers with us.

Through Lloyd's Charities Trust, we're supporting RedR, the international disaster relief charity, to help build the capacity of humanitarians to respond to disasters. Helping people who've been affected by a disaster being a cause very close to our hearts. A few figures: over the last three years we have trained 1,780 aid workers from 160 organisations in 104 countries and over the next three years we'll be helping to increase the ability of a further 2,000 individuals and organisations to prepare for and respond to emergencies, especially in urban centres.

We also have a Lloyd's Code of Conduct, which everyone who joins us signs. From our Living Wage Employer Accreditation to our Speaking Up policy, which allows people across the business to voice any concerns, we make sure this code is upheld across Lloyd's.

19

9. MyLloyd's: Is the Corporation-wide intranet that consists of resources and updates for all employees. Over the last reporting year this was used to communicate activities including but not limited to the below:
   - World Environment Day
   - The Investment Forum event
   - 15th annual Corporate Responsibility (CR) Index with Business in the Community
   - Lloyd's Together programme blogs from the international offices
   - World Food Programme, El Niño appeal for Southern Africa
   - 'Be responsible, get involved' drop in session for Corporation employees to find out more about Global Corporate Social Responsibility initiatives
   - The annual travel survey
   - Square Mile challenge
   - Under desk bin removal initiative
   - SolarAid partnership renewal
   - Business in the Community's Responsible Business Week

   There are a number of features available such as the ability to comment on blog pieces or LiveWire that allow employees to submit questions or make views known.

Forward planning

The Corporation aims to continue to grow the number of global sustainability champions and the Corporate Social Responsibility team are actively engaged with Corporation colleagues around the world to help them implement sustainability initiatives in their offices.

Employee engagement also forms part of the Environmental Working Group action plan, and a copy of the 2016 and 2017 reports have been provided to the external reviewers to demonstrate the range of initiatives, and the year on year planning that takes place.

Evidence also applies to principle(s): 1.1, 1.3, 1.4, 3.1, 5.1, 5.2, 5.3, 6.1

Source: The Corporation of Lloyd's

The Lloyd’s market / ArgoGlobal / Sustainability plan

In support of its commitment to influence the potential negative impact of climate change, Argo Group has now included a climate change as a part of its review and development of its internal sustainability plan that was established during 2015-2016 and continued into 2017.

The Argo Group sustainability plan contemplates that regular internal communication will occur regarding the issue of climate change for the purpose of raising employee awareness of this issue and the actions that they can take in response to it. The amount of Argo Group internal communication on climate change and sustainability issues has been increased through 2017, with training and communication meetings occurring in certain offices and the posting of newsletters and information on Argo Group’s internal internet, which is accessed by its 1,300 employees.

Evidence also applies to principle(s): 5.1

Source: ArgoGlobal: Syndicates 1200 and 1910

The Lloyd’s market / MS Amlin / Engaging employees

As referenced in Principle 2.1 MS Amlin’s CR policy is available on the company intranet system and is applicable to all employees globally. This policy defines our approach to corporate responsibility, enabling MS Amlin to take decisions and actions that create responsible outcomes, while also achieving our organisational goals.

We actively encourage paper reduction and recycling in our offices and operate a clear desk policy. Employees are encouraged to reduce business travel where possible.

Our employees are also actively engaged with our sponsorship of MS Amlin Andretti. We regularly communicate updates from the team, including providing insight into the impact that our sponsorship has and how it actively promotes the sustainability of consumer transport and the future of motorsport. Our underwriting modelling team are also involved with the MS Amlin Andretti team directly, providing data analysis and sophisticated software tool development to help the team manage the energy usage of the cars, and help them to go faster around the track.

Evidence also applies to principle(s): 3.1, 5.1, 5.2, 5.3

Source: MS Amlin

The Lloyd’s market / Tokio Marine Kiln / Employees engagement

Tokio Marine Kiln (TMK) aspires to be a global “Good Company”, consistent with the Group business strategy. We have embedded the key pillars of the Good Company culture within the annual performance reviews of our employees. This encourages and rewards the employees in their positive engagement on these values. The recognition is also supported by the Tokio Marine Group where each subsidiary will nominate an employee to receive the Good Company Award in Tokyo each year. The winner from TMK this year comes from our claims department, particularly in recognition of their efforts in the Canadian wildfires.

In addition, the Tokio Marine Group including TMK, has implemented a wide range of charitable activities where the company and our employees can get involved at several different levels: company donations, personal donations and also volunteering. For example, since 1999, Tokio Marine Group employees have mangroves in 9 countries in Southeast Asia in partnership with tree-planting NGOs. The CO2 absorption and fixation efforts through mangrove planting amounted to 100,000 tonnes and the entire Tokio Marine Group became carbon neutral.

Another example is Tokio Marine Kiln’s employees’ involvement in the Street Child, Sierra Leone marathon. Every year, the employees volunteer to run in raising funding for orphans in the country to rebuild their lives after the civil war. In 2017, total funding raised £25,000 for this charity.

In 2017, TMK began a new global charity partnership with Water Aid. This includes a significant donation to their charitable endeavours around the world. TMK is also paying for an employee to visit numerous pieces of work that

Water Aid have carried out in Madagascar and will have the opportunity to assist in their efforts to alleviate poverty and provide clean sanitation to those in developing countries.

The CSR activities of the Tokio Marine Group companies are communicated globally to all of our 33,000 employees through the Tokio Marine Group journals, which are circulated monthly on the intranet. In addition, the Tokio Marine Group produces a CSR report on an annual basis, and is available publicly.

Further information can be found in the Tokio Marine 2016 Annual report and 2016 Corporate Social Responsibility report.

Evidence also applies to principle(s): 3.3, 4.3

Source: Tokio Marine Kiln: List of charity donations and Tokio Marine journals available upon request.

6 Report and be accountable

6.1 Ensure that the organisation is working to incorporate the Principles into business strategy and planning by encouraging the inclusion of the social and economic impacts of climate risk as part of the Board agenda.

Board level commitment

Climate change is recognised as an issue at Board level at the Corporation and each market participant has a ClimateWise sponsor at Board level:

Company	**Designated Board Member**	**Title**
The Corporation of Lloyd's	John Parry	Chief Financial Officer
Argo	Philip Grant	Director, Argo Managing Agency
Beazley	Clive Washbourn	Head of Marine[i]
CHUBB	Andrew Kendrick	SVP, Chubb and President, Europe
Hiscox	Michael Schenstrom	Director of Group and Finance Operations
MS Amlin	James Illingworth	Chief Risk Officer
Navigators	Stephen Richard Coward	Director, NUAL and President, Navigators Technical Risk.
QBE	Joe Gordon	Chief Operations Officer
Renaissance Re	Ian Branagan	SVP Group Chief Risk Officer
Tokio Marine Kiln	Charles Franks	Chief Executive Officer

Evidence also applies to principle(s): All.

Source: Lloyd's ClimateWise members

[i] Clive Washbourn also heads up the Responsible Business Committee.

The Corporation of Lloyd's / Global Corporate Social Responsibility: Strategic oversight, progress in 2016, and 2017 KPIs

In 2015-2016 reporting, the Corporation of Lloyd's outlined how the social, ethical and environmental issues are encompassed within the Corporation strategy. As a major player in the global economy, it is important that the Corporation of Lloyd's acts responsibly. This is covered explicitly by corporate social responsibility (CSR) activities undertaken in a number of areas, and also applies to business practices.

The Corporation of Lloyd's is committed to effecting positive change by being seen as a leader in its responsible business approach. Global Corporate Social Responsibility is one of the strategic objectives, and the Corporation takes action to address the environmental impact of Corporation operations.

In addition, the Chief Financial Officer[j], Chief Operating Officer[k], and Performance Management Director[l], have responsibilities under their 'management functions' to:

"promote the Corporate and Social Responsibility (CSR) agenda and specifically to progress Lloyd's CSR objective of using its position and voice to inform and encourage appropriate action on global social and environmental issues of relevance to insurance, such as climate change, whilst ensuring its internal practices support its external messages."

These terms of reference implement the governance arrangements by which the Lloyd's Council operates. They also set out the terms of the delegation of authority to the Franchise Board and other committees, panels, boards and persons and permit for sub-delegation including to the Lloyd's executive.

The Corporation of Lloyd's also has a part to play globally in supporting the communities in which it operates and in taking a lead on wider social and environmental issues. This is reflected in its commitment to Global Corporate Social Responsibility as part of Vision 2025. The Corporation of Lloyd's continues to be an active member of the ClimateWise initiative, and has attended all managing committee meetings held during the reporting year.

This is reflected in the Corporation of Lloyd's business practices as well as work with community and charity partners:

"We continue to promote our approach to responsible business through our membership of ClimateWise, ensuring our people and customers are treated fairly, and supporting the communities we work in around the world"

- John Parry, Chief Financial Officer

The Lloyd's market aims to ensure its customers are fairly treated at all times and should aspire to the highest standards in business conduct generally. The Corporation of Lloyd's aims to use its experience and expertise to help communities around the world build resilience against disasters, including the effects of climate change and extreme weather events. All of these activities help to complement the 'Lloyd's brand' and attract new and diverse talent.

The Corporation of Lloyd's global corporate social responsibility programme has continued to make year on year improvements, and achieved the Key Performance Indicators set for 2016 covered in 2015-16 ClimateWise reporting.

These achievements were illustrated in the Corporation of Lloyd's 2016 annual report:

1. A week-long series of global events for the UN World Environment Day
2. Lloyd's Community Programme won a CII Public Interest Award and a Lord Mayor's Dragon Award

[j] Terms of Reference: 4.1.1, 1.2: t *p79*

[k] Terms of Reference: 4.1.2, 1.2: s *p84*

[l] Terms of Reference: 4.1.2, 1.2:hh *p98*

3. Lloyd's Charities Trust launched new three-year partnerships with international disaster relief charity RedR, Build Change and Whizz-Kidz
4. Over 25 of Lloyd's global offices took part in the 'Lloyd's Together' CSR programme supporting a wide range of causes in their local communities
5. In 2016 the Corporation of Lloyd's achieved Gold in the City of London Clean City awards, recognising the Corporation's waste management and recycling efforts in 2015. In 2017 the Corporation received a Platinum Award for 2016 activities. This award is given to a selection of 'top performing companies' – a target the Corporation has been working towards over the past reporting years.
6. Conduct reviews and associated market education was continued throughout the year, and designed to protect the interests of customers. Complaints oversight was rolled also out internationally in order to enhance policyholder protection globally
7. A slavery and human trafficking statement has been published and an anti-slavery policy agreed.

Progress against the 2016 KPIs

- Achieved: Receive recognition by external stakeholders for Lloyd's responsible business approach
- Achieved: Maintain positive rating by employees for Lloyd's responsible business approach (85%+ positivity in employee survey)

Forward planning

In 2017 the Corporation of Lloyd's will aim to publish a Responsible Business policy for the Corporation and market, and increase involvement in charity and community programmes across the Lloyd's market.

2017 plans

- Develop a Responsible Business Policy
- Use 100% green electricity in Lloyd's UK offices
- Encourage volunteering through 'Lloyd's Community Programme' and promote the work of 'Lloyd's Charities'

What success looks like:

2017 KPIs

- Published a Responsible Business Policy for the Lloyd's market and Corporation
- Reduced the Corporation of Lloyd's total reported Greenhouse Gas Emissions
- Interim milestones (to end 2018)
- Lloyd's is a responsible global corporate citizen through its ethical principles and practices, sharing of knowledge and expertise, and positive contribution to social and environmental issues

Vision 2025

- Lloyd's will be known around the world for its integrity
- Lloyd's will be a place where talented, diverse and socially responsible employees feel proud to work

Evidence also applies to principle(s): All.

Source: The Corporation of Lloyd's

The Lloyd's market / Chubb / Chubb Limited Annual Report, Environmental Statement

As an insurance company, Chubb's "environmental footprint" is relatively modest, but through our Corporate Greenhouse Gas Inventory Program and Corporate Environmental Strategy, we work to reduce it even further. Some of the primary objectives of our environmental strategy are to measure, record and reduce Chubb's corporate GHG emissions.

In 2007, Chubb joined the voluntary U.S. Environmental Protection Agency (EPA)-sponsored Climate Leaders program, through which the company was able to develop long-term, comprehensive climate change strategies, inventory its emissions and set a six-year GHG reduction goal of 8% per employee. While the EPA program was discontinued in September 2011, Chubb's Corporate GHG Inventory Program remains active using its methodology, which is based on the World Resources Institute and the World Business Council for Sustainable Development (WRI/WBCSD) GHG Protocol for data collection and analysis. In 2012, Chubb successfully met its first generation GHG reduction goal with a 27% reduction in emissions per employee since 2006.

In order to continue Chubb's global commitment to reducing its environmental footprint, a new GHG reduction target was announced in September of 2014. The reduction goal promised to reduce emissions 10% per employee by 2020 from a 2012 base year. In January 2016 ACE Limited acquired The Chubb Corporation and adopted the Chubb name. A new GHG reduction goal is currently being evaluated based on the emissions from the combined companies.

Chubb 2016 GHG inventory data

Description	**2016 Total**
Total emissions (CO^2-eq. (metric tons))	115.998
Normalisation factor (FTE employees)	28,507
Normalised emissions ($COCO^2$-eq./NF units)	4.07

The data above represent 26,146 metric tons of COCO^2-eq. of Scope 1 emissions from fossil fuel combustion, 70,878 metric tons of CO^2-eq. of location-based Scope 2 emissions and 68,350 metric tons of CO^2-eq. of market-based Scope 2 emissions from purchased electricity, all from the company globally, and 18,974 metric tons of CO^2-eq. of Scope 3 emissions primarily from United States employee business travel. Chubb's GHG emissions data are reviewed by a third-party on an annual basis. The company's most recent 2016 GHG inventory was reviewed by Bureau Veritas and the verification statement can be found on the following page.

In addition to tracking GHG emissions versus its goals, Chubb reports its GHG emissions data to the Carbon Disclosure Project (CDP), an organization that scores carbon emissions information from thousands of corporations on behalf of the global investment community. In 2016, Chubb's response to the questionnaire resulted in a score of A-.

Chubb's Global GHG Management Plan concentrates primarily on reducing energy consumption at the facility level – specifically, in owned buildings and larger, long-term leased spaces. Projects have been implemented at a number of major offices including: Philadelphia, Pa.; Wilmington, Del.; Hamilton, Bermuda; Sydney, Australia; the Chubb Conference Center, Lafayette Hill, Pa.; London, U.K.; and Monterrey, Mexico. The projects include installation of new HVAC equipment, lighting upgrades and installation of a central building automation system (BAS) in order to improve operations within the building and reduce energy consumption. Energy efficiency projects implemented by the corporate environmental program in 2016 represent an estimated savings of approximately 350 metric tons of CO^{2}e per year.

In Chubb's office building in Philadelphia, the company has reduced energy consumption by over 20% since 2006 through the installation of new boilers and LED lighting, the use of variable speed drive HVAC equipment and installation of an exhaust energy recovery ventilator. Through these steps, the company earned LEED Silver certification in 2009 and was awarded LEED Gold certification in 2014. It was also awarded Energy Star Certification by the U.S. EPA in 2016.

In July 2011, the company's Bermuda office building was awarded LEED Gold certification – the first building in Bermuda to be awarded the designation – due in large part to a re-lamping of office lights, applying a floating temperature set point and installing motion sensors and timers on office equipment. These actions reduced electrical needs by approximately 500,000 kWh (358 metric tons CO^{2}e) per year. In 2014, the company engaged with the U.S.

Green Building Council (USGBC) and the Bermuda facility became one of the first buildings using LEED Dynamic Plaque, a tool that continuously monitors and encourages improvement of overall building performance.

Information about Chubb's full range of environmental efforts, including insurance solutions to help customers manage their environmental and climate change risks, corporate initiatives to control our own ecological impact and philanthropic actions in support of environmental causes, can be found in the company's annual Environmental Report, which is available at www.chubb.com.

Evidence also applies to principle(s): All.

Source: Chubb

The Lloyd’s market / MS Amlin / MS Amlin’s commitment: James Illingworth, Chief Risk Officer

The MS Amlin Board is responsible for setting and overseeing the implementation of MS Amlin’s strategy, alongside setting the “tone from the top” in respect of the company’s governance, culture and values. It holds management to account for reinforcing MS Amlin’s values throughout the company and is also responsible for MS Amlin’s risk management and internal control systems.

At MS Amlin we have a continuous process for identifying, evaluating and managing the significant risks facing the company. This process has been in place for several years and includes risks arising from social, environmental and ethical matters, in accordance with the Financial Reporting Council Risk Guidance.

Our risks are managed through a number of processes, including: defined tolerances or risk limits; risk assessment on an enterprise-wide basis; an emerging risks process; underwriting analysis and pricing; exposure collation and monitoring; and portfolio modelling and stress testing.

Operational risks and opportunities are identified and acted upon either as part of our general risks management framework or on an ad hoc project basis. There are relatively few climate change risks arising directly from MS Amlin's operations as an insurance company, but within our monitoring list of current emerging risks, climate change and technical innovation feature, both of which have, and will continue to have, a material impact on the (re)insurance sector and the sustainability of our society.

As part of the MS&AD Group, MS Amlin is committed to supporting and aligning to our parent organisation’s CSR and environmental policies and standards. The overarching mission of our parent, the MS&AD Group, is: *"To contribute to the development of a vibrant society and help secure a sound future for the earth, by bringing security and safety through the global insurance services business."*

To help us contribute to this mission, our Corporate Responsibility (CR) policy is embedded across the company. CR is a way of recognising our responsibilities to wider communities, societies and economies, ensuring that our decisions and actions create positive and responsible outcomes while also achieving our organisational goals. It also helps us to think to the future and develop a culture of continuous improvement in this field.

As a responsible member of the insurance sector we recognise that ensuring sustainability and continuity for our clients is central to our business. We believe that acting responsibly enables us to work in the best interests of all our stakeholders, and contribute to a sustainable business and the delivery of long-term value to the societies and economies of which we are part.

This document includes examples from across MS Amlin where we have aligned behind the ClimateWise Principles and are looking to the future to provide continuity to our customers, clients and stakeholders.

These include:

- Our innovative thought leadership programme with Oxford University on understanding systemic risk within the (re)insurance industry
- Our sponsorship of the MS Amlin Andretti Formula E team, within the Formula E Championship, which is accelerating innovation within electric motorsport and increasing the impact of renewable energy within consumer transport

- Our flood risk forecasting research collaboration with Imperial College, London to develop a localised flood response model and our Flood Toolkit, which is enabling our clients to be better informed and able to assess and address the potential impact of flooding on their businesses
- Our responsible investment practices
- Our internal initiatives to embed sustainable thinking into our everyday business strategies and actions through our CR policy and participation in panel memberships such as The Geneva Association.

MS Amlin is proud to be a member of ClimateWise, striving to deliver actions - individually and collectively - against the ClimateWise Principles.

James Illingworth
Chief Risk Officer, MS Amlin plc

Evidence also applies to principle(s): All.

Source: MS Amlin

The Lloyd's market / Navigators Underwriting Agency Limited / Stephen Richard Coward, Director, NUAL and President, Navigators Technical Risk

Further to prior years' reporting for ClimateWise, below is the 2017 Report with regard to Navigators latest position, as part of the Lloyd's community, with the six core principles (and their sub-principles) of ClimateWise in mind:

1. Lead in risk analysis
2. Inform public policy making
3. Support climate awareness amongst customers
4. Incorporate climate change into investment strategies
5. Reduce environmental impact of our business
6. Report and be accountable

As part of the Lloyd's community the report is in the form of activities primarily relating to the July 2016 to June 2017 year (reporting period), demonstrating how we contribute to a low carbon resilient economy, although where applicable continuing initiatives and activities have been retained from prior annual submissions.

The challenging market conditions for ourselves have continued in the reporting period, with sustained downward pressure on insurance rates, and likewise ongoing challenges for our clients in the Oil and Gas sector. Whilst we have seen some stability in commodity oil and gas prices, business confidence is slow to return. Focus therefore, in regard to ClimateWise in this reporting period has been on sustaining existing initiatives and activities, rather than actively pursuing new areas, which is reflected in the nature of our 2017 update.

As in the past, we report primarily against our main activity relating to Principle 3. We have also for this reporting period been able to show further progress in our submission against Principle 1, and maintained activity in regard to Principle 5.

Notwithstanding the challenging market conditions, both our NavTech speciality Energy Insurance division and the wider Navigators group returned underwriting profits for the reporting period, although there was a timely reminder of the negative contribution of climate change, with our International Property book showing an underwriting loss for the period, arising out property natural catastrophe losses in North America.

Navigators continues to monitor with interest developments associated with climate risk and climate-related financial disclosure as being considered by the G20 Financial Stability Board.

The content of our 2015/16 ClimateWise report was shared with the Board of Directors of NUAL on 3rd August 2016 and by coincidence all members of Board of Directors of the holding company, Navigators Group Inc., were also in attendance and noted the extent of our involvement through Lloyd's.

Report prepared by John Munnings-Tomes, Chief Risk Engineer, Navigator Technical Risk.

Stephen Richard Coward, 7th July 2017
Director, NUAL and President, Navigators Technical Risk

Evidence also applies to principle(s): All.

Source: Navigators Underwriting Agency Limited (Navigators)/NavTech

The Lloyd's market / QBE European Operations / Communicating our strategy and taking action

As a global insurer with operations in 37 countries, QBE follows environmental, social and governance (ESG) standards across a range of jurisdictions. In last year's inaugural consolidated Sustainability Review we stated that QBE's focus extends beyond compliance as we actively focus on the sustainability of all aspects of our business and on making a positive contribution to the communities in which we operate.

In 2016 we took steps to strengthen the governance of our ESG activities and ensure a more co-ordinated approach. Central to these efforts was the formation of an ESG Committee, formalised as an executive committee reporting to the Group Board Risk and Capital Committee (BRCC). This committee provides oversight and guidance to QBE's ESG-related projects, activities and initiatives other than those of the QBE Foundation, which has separate governance arrangements.

The ESG Committee is chaired by the Group Head of Communication and Marketing and includes representatives from Group departments including Risk, Finance, Investments, Investor Relations, People, Communications, Legal, Company Secretariat and Compliance.

Each area of focus is led by a senior executive and is supported by a range of committees and forums that drive implementation of ESG initiatives in day-to-day business activities and decision-making across all levels of the organisation. These committees and forums include members with relevant technical skills and experience and some have independent members who provide a broader business and community perspective.

Further examples include:

- QBE EO quarterly Environmental Reports are posted on our intranet for our employees, the reports are also submitted to QBE Group, Environmental and Social Governance, where it is aggregated and consolidated with comparable data from other regions for reporting via the Company's online Annual Report.
- An annual Global Staff Survey to provide insights into areas such as engagement, understanding QBE's strategy and values.
- The annual Sustainability Review provides a detailed overview of each of the ESG Committee's areas of focus, together with a discussion of QBE's commitment to our community. See section five of the QBE 2016 Sustainability report for more details.

Evidence also applies to principle(s): 1.1, 1.3, 5.4, 6.1

Source: QBE European Operations

The Lloyd's market / Tokio Marine Kiln / Our commitment to Climate Change

The recent furore over President Trump pulling out of the Paris Climate Accord was met with near universal disdain. Few will have a detailed knowledge of what the agreement entails, or what contributors sign up to, but what angered many was the perceived lack of care for the environment and failing to support such care with appropriate actions. It appeared rather than supporting the environment, there was an active push against it from the world's largest economy. Yet few will disagree, that mankind can cause irreparable damage to the planet which we inhabit.

In our own world of insurance this manifests itself with initiatives such as ClimateWise. In a similar vein, this is designed to show that we care, we are acting upon that care, and we're on the side of bettering the planet through actions and words. Yet it would be easy to dismiss insurance's need to even consider this. After all, an insurance product in its purest form is a legal contract - often not even on paper nowadays.

And whilst insurance can appear relatively environmentally friendly, the consequences of insurance done badly can be cataclysmic.

If money is the first concern when natural or manmade disasters strike, then the response is often slower and of lesser quality than if the cost is dealt with afterwards. I've seen this many times in my career, most recently last year with the Canadian wildfires. In this case, we immediately sent claims personnel to the affected area to ensure that the time and quality of response took precedent; settling the bill could come later. As an industry and society, we've become very good at taking this attitude where human life and property are at stake, but we need to continue to act like this where the environment is concerned. The consequences of not doing this can be seen in insurable events, man-made or otherwise, such as the Deepwater Horizon accident.

This is where ClimateWise makes a difference. It focuses insurers on the importance of environmentalism and green practice in day-to-day operations. It ensures that we think about the environment not only when printing or turning on the air conditioning, but also when we are underwriting or paying a claim.

We have to continue to show that we care about the environment and demonstrate this in our actions as insurers. By doing this, the insurance response to profound environmental events will be better.

Charles Franks
Chief Executive Officer, Tokio Marine Kiln

Evidence also applies to principle(s): 4.3, 5.4, 6.1
Source: Tokio Marine Kiln

6.2 Publish a statement as part of our annual reporting detailing the actions that have been taken on these principles.

The Corporation of Lloyd's / Publish a statement detailing actions

In previous reporting the Corporation of Lloyd's has outlined activities taken against the ClimateWise principles and published them online and where relevant in the annual report for the relevant calendar year.

This document constitutes 'Lloyd's' response to the ClimateWise principle for the period covering 1 July 2016 – 30 June 2017. The Corporation of Lloyd's collates and submits this document on behalf of the Corporation of Lloyd's and the Lloyd's market members outlined in the front matter of the document, to provide an overview of activities undertaken by 'Lloyd's'.

As with previous years – although this has not previously been reported publically – there have been no requests to exclude 'Lloyd's' from responding to any sub-principles, and this response will be publically available on Lloyds.com/ClimateWise with previous year's responses when the independent report is released in Q3/4. In 2015 and 2016 the Corporation of Lloyd's publically released the score received from the independent reviewers as part of the commitment to communicating climate change action. The Corporation of Lloyd's aims to continue this in 2017.

Evidence also applies to principle(s): All.
Source: The Corporation of Lloyd's

The Lloyd's market / MS Amlin / MS Amlin's commitment: reporting

MS Amlin's CR activities form part of the annual CSR reporting for the MS&AD Group and a summary report is made available each year on the MS&AD website.

Evidence also applies to principle(s): All.

Source: MS Amlin

The Lloyd's market / QBE European Operations / Communicating our strategy and taking action

QBE recognises that economic, environmental and social issues are critical to the sustainability of all businesses over the longer term, and that the insurance industry has an important role in ensuring these issues are appropriately prioritised across society. In order to provide a focus for QBE's activities in this area, in late 2015 QBE became a signatory to the United Nations Environment Programme Finance Initiative: Principles for Sustainable Insurance (UNEP:PSI).

The Principles are a framework for the global insurance industry to address environmental, social and governance risks and opportunities. The United Nations hopes that insurers that embed sustainability in their business operations can catalyse the kinds of financial and investment flows and long-term perspectives needed for sustainable development.

QBE has a track record of developing products and services which encourage better risk management and that improve community understanding in relation to risk, insurance and sustainability issues. In particular, QBE recognises the impact climate change can have upon a business in terms of potential claim patterns and also the potential for extending and adapting its product lines and services to take account of the changing world.

The Lloyd's submission represents the annual statement of ClimateWise activities. Further information about how QBE approaches sustainability and environmental, social and governance issues more broadly can be found in the 2016 Sustainability Report, which is made publically available to communicate the group strategy and focus.

Joe Gordon
Chief Operations Officer, QBE European Operations

Evidence also applies to principle(s): 1.1, 1.3, 6.1

Source: QBE European Operations

The Lloyd's market / RenaissanceRe Syndicate Management Ltd / Renaissance Re Holdings Ltd. reference to climate change in 2016 Annual Report

Within the RenaissanceRe Holdings Ltd. 2016 Annual Report (*see p28 2016 Annual Report*) is a section on environmental and climate change matters. This exhibits specific commitment to ClimateWise principle 6.2 as the statement is included in an annual report that is publicly available and distributed to all shareholders communicating recognition of these issues.

"ENVIRONMENTAL AND CLIMATE CHANGE MATTERS

Our principal economic exposures arise from our coverages for natural disasters and catastrophes. We believe, and believe the consensus view of current scientific studies substantiates, that changes in climate conditions, primarily global temperatures and expected sea levels, are likely to increase the severity, and possibly the frequency, of weather related natural disasters and catastrophes relative to the historical experience over the past 100 years.

We believe that this expected increase in severe weather, coupled with currently projected demographic trends in catastrophe-exposed regions, contributes to factors that will increase the average economic value of expected losses, increase the number of people exposed per year to natural disasters and in general exacerbate disaster risk, including risks to infrastructure, global supply chains and agricultural production.

Accordingly, we expect an increase in claims, especially from properties located in coastal areas. We have taken measures to mitigate losses related to climate change through our underwriting process and by continuously monitoring and adjusting our risk management models.

In addition to the impacts that environmental incidents have on our business, there has been a proliferation of governmental and regulatory scrutiny related to climate change and greenhouse gases, which will also affect our business. Although most regulations related to climate change and greenhouse gases do not directly apply to our business, these regulations could indirectly impact our business".

Evidence also applies to principle(s): 3.1, 4.3, 6.1.

Source: RenaissanceRe Syndicate Management Limited