LLOYD'S

Our progress against the ClimateWise principles

Contents

ClimateWise reporting

Lloyd's is the world's leading insurance and reinsurance marketplace. Through the collective intelligence and risk-sharing expertise of the market's underwriters and brokers, Lloyd's helps to create a braver world.

The Lloyd's market provides the leadership and insight to anticipate and understand risk, and the knowledge to develop relevant, new and innovative forms of insurance for customers globally.

It offers the efficiencies of shared resources and services in a marketplace that covers and shares risks from more than 200 territories, in any industry, at any scale. And it promises a trusted, enduring partnership built on the confidence that Lloyd's protects what matters most: helping people, businesses and communities to recover in times of need.

Lloyd's began with a few courageous entrepreneurs in a coffeeshop. Three centuries later, the Lloyd's market continues that proud tradition, sharing risk in order to protect, build resilience and inspire courage everywhere.

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.

More than 50 insurance companies, over 300 registered Lloyd's brokers and a global network of nearly 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 through syndicates.

- A Lloyd's syndicate is formed by one or more members joining together to provide capital and accept insurance risks. Most syndicates write a range of business lines across multiple areas of expertise. Each syndicate sets its own appetite for risk, develops a business plan, arranges its reinsurance protection and manages its exposures and claims.
- A managing agent is a company set up to run one or more syndicates on behalf of the members. They have responsibility for employing underwriters, overseeing their underwriting and managing the infrastructure and day to day operations.
- Lloyd's is a broker market in which strong business relationships, backed by deep expertise, play a crucial part. Brokers facilitate the risk transfer process between policyholders and underwriters. Much of this business involves face to face negotiation.
- Syndicates can also authorise third parties, known as coverholders to underwrite business on their behalf locally around the world. Service companies are wholly owned by a managing agent or a related group company and are authorised to enter into contracts of insurance for members of the associated syndicate.

Business flow | **The market** | **Capital flow**

Customers – transferring risk
- Global commercial organisations, such as FTSE 250 and Fortune 500 companies
- Small and medium-sized enterprises
- Individuals
- Other insurance groups

Distribution channels
- 303 brokers: distributing business
- 378 service company locations
- 3,936 coverholder locations: offering local access to Lloyd's

The market

55 managing agents – managing syndicates

84 syndicates – writing insurance and reinsurance directly

15 special purpose arrangements set up solely to write a quota share of another syndicate

Gross written premiums:		Capital and reserves:	
2018	£35.5bn	2018	£28.2bn
2017	£33.6bn	2017	£27.6bn
2016	£29.9bn	2016	£28.6bn

Members (the capital providers)
- Trade capital: insurance companies from around the world
- Institutional capital: such as pension funds and private equity
- Private capital (via members' agents): such as small companies and individuals

The Corporation – supporting the market

Last year saw several large natural catastrophes, including hurricanes Florence and Michael, Typhoon Jebi in Japan, as well as the Californian wildfires. These disasters led to major claims costing the Lloyd's market £2.9bn, significantly higher than the long-term average (£1.9bn), which contributed to a combined ratio of 104.5% in 2018.

Despite these substantial claims, Lloyd's strengthened its financial position. Total assets grew by 9% to £118.0bn, and Lloyd's net resources increased by 2% to £28.2bn. Meanwhile, Lloyd's central assets also saw growth of 8% to £3.2bn. This financial security underpins every Lloyd's policy and gives customers confidence in the market's ability to provide financial support when it is needed most.

Against a backdrop of global uncertainty and challenging market conditions, Lloyd's 2018 aggregated results showed green shoots of improvement. After several years of rate softening, the pricing environment saw strengthening by 3.2% on renewal business and the beginning of improvement in the attritional loss ratio which reduced 1.3% on the previous year.

Meanwhile, the Lloyd's market continued to focus on driving improved performance. A rigorous business planning process for 2019 removed almost £3.0bn of poorly performing business from the market and remediation plans were implemented across all review classes of business.

Lloyd's is also ready for Brexit through its new Brussels subsidiary, which is fully operational and writing risks. This provides certainty for our customers in the European Economic Area (EEA) that they can continue to access Lloyd's insurance products, services and expertise. The market also made good progress on modernisation in 2018, evidenced by a substantial increase in adoption of technology solutions, including electronic placement.

The Lloyd's market has met these substantial commitments without any significant impact on total resources which remain strong at £28.2bn. Lloyd's capital position remains robust and our ratings with the leading ratings agencies are A+ rating from Standard & Poor's, AA- from Fitch and A from A.M. Best.

Understanding Lloyd's 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. For example:

- Lloyd's / The Corporation of Lloyd's

  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.

- Lloyd's / The Lloyd's market / [market member name]

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

Reporting is made publicly available online each year by the Corporation on behalf of the Lloyd's members, with members also carrying out their own activities throughout the year. This also includes examples of Lloyd's reporting in the annual review by PwC, where examples of best-practice activity are often highlighted. For example, in the 2018 Independent Review, the Corporation of Lloyd's customer support during hurricane season was chosen as an example for Principle 3.

This year the Corporation has also been involved in revising the principles to align fully with the recommendations set out by the Taskforce for Climate-related Financial Disclosures (TCFD). Headings throughout the report will differ from previous years.

Scoring year-on-year

In last year's reporting, Lloyd's achieved joint second ranking in the ClimateWise members table and communicated this publicly as part of our commitment to the principles.

2014-15	2015-16	2016-17	2017-18
72%	77%	74%	78%

The Corporation of Lloyd's

As a founder member of ClimateWise, the Corporation of Lloyd's continues to publicly recognise effects of climate change and the direct impact on the business community and is in regular dialogue with insurers, businesses and policy makers to address the challenges of climate change, both for our industry and for society.

Sustainability

As recognised in the environment section of the risk updating in Lloyd's 2018 annual report (*see Annual report 2018, p12*), there is growing recognition that businesses must do more to promote a sustainable future. The threats posed by climate change, unclean air, water scarcity and related food insecurity are already well documented. For example, disruptions to the production and delivery of goods and services due to environmental disasters are up by 29% since 2012.

Business leaders have a responsibility to align their commercial interests with these challenges. Evidence suggests that more than two-thirds of economic losses from natural disasters remain uninsured. More needs to be done to close this protection gap and mitigate the wider damage caused by climate-related disasters.

The Corporation is proud to take a lead role in addressing wider social and environmental issues and has signed up to the United Nations Global Compact. In so doing, the Corporation agrees to align strategy, culture and day to day operations with universal principles on human rights, labour, the environment and anti-corruption, and to take actions that advance societal goals.

The Lloyd's membership continues to be an active member of the ClimateWise initiative, a collaborative endeavour by insurers to drive action on climate change.

The Lloyd's market

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

Case studies evidencing their compliance with the principles and actions against them are included to provide an overarching submission from Lloyd's and provides a public account of progress year-on-year.

Each case study is written by the named market member, and reflects the group views, policies and practices of that entity only.

ClimateWise members in the market

AXA

ARGO GROUP
Get there together

beazley

CHUBB

HISCOX

MS Amlin

Navigators

QBE

RenaissanceRe SYNDICATE 1458

TOKIO MARINE KILN

AXA XL and Hiscox also report independently as an individual member. Navigators will report against the 'Hartford Group' in future reporting.

1 Be accountable

1.1 Ensure that the organisation's Board is working to incorporate the Principles into business strategy and has oversight of climate risks and opportunities.

Board level commitment

Climate change is recognised as an issue at Board, Council, and ExCo level at the Corporation, and each market participant has a ClimateWise sponsor at equivalent senior level:

Company	Designated Board Member	Title
The Corporation of Lloyd's	John Parry[a]	Chief Financial Officer
AXA XL	TBC	TBC
Argo	Philip Grant	Non-Executive Director
Beazley	Adrian Cox	Chief Underwriting Officer
Chubb	David Furby	CEO, Chubb European Group
Hiscox	Michael Schenstrom	Director of Group and Finance Operations
MS Amlin	James Few	Global Managing Director, Reinsurance
Navigators	Carl Bach III	Chief Executive Officer, NUAL, Navigators, Syndicate 1221 at Lloyds
QBE	Nigel Terry	Chief Risk 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

[aa] 1 July 2018 – April 2019

Lloyd's / The Corporation

At the Corporation of Lloyd's, we want to be known as a responsible business leader, operating in a way that makes those who work for us feel proud of their contribution. Our responsible business approach underpins our goals to support global economic growth and help nations, businesses and communities improve resilience to, and recover faster from, disasters.

As a major player in the global economy, it is important that Lloyd's acts responsibly. Lloyd's is already highly regarded for the responsible business activities undertaken in its local communities. As the market grows and diversifies, so does our community support.

This responsibility also applies to business practices. The Lloyd's market should aspire to the highest standards in business conduct and ensure its customers are fairly treated at all times. Lloyd's also wants 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.

Lloyd's is considered as the world's leading insurance and reinsurance marketplace, with nearly 60% of its business being written in reinsurance and property classes of business; as such it is exposed to both physical and transitional risks arsing through climate change.

Overall responsibility for the Corporation of Lloyd's strategy, and risks, sits with the Chief Executive Officer, the Council of Lloyd's, and Lloyd's Board. Further responsibilities around climate related risks are being discussed and we anticipate covering them in future reporting.

Governance structure

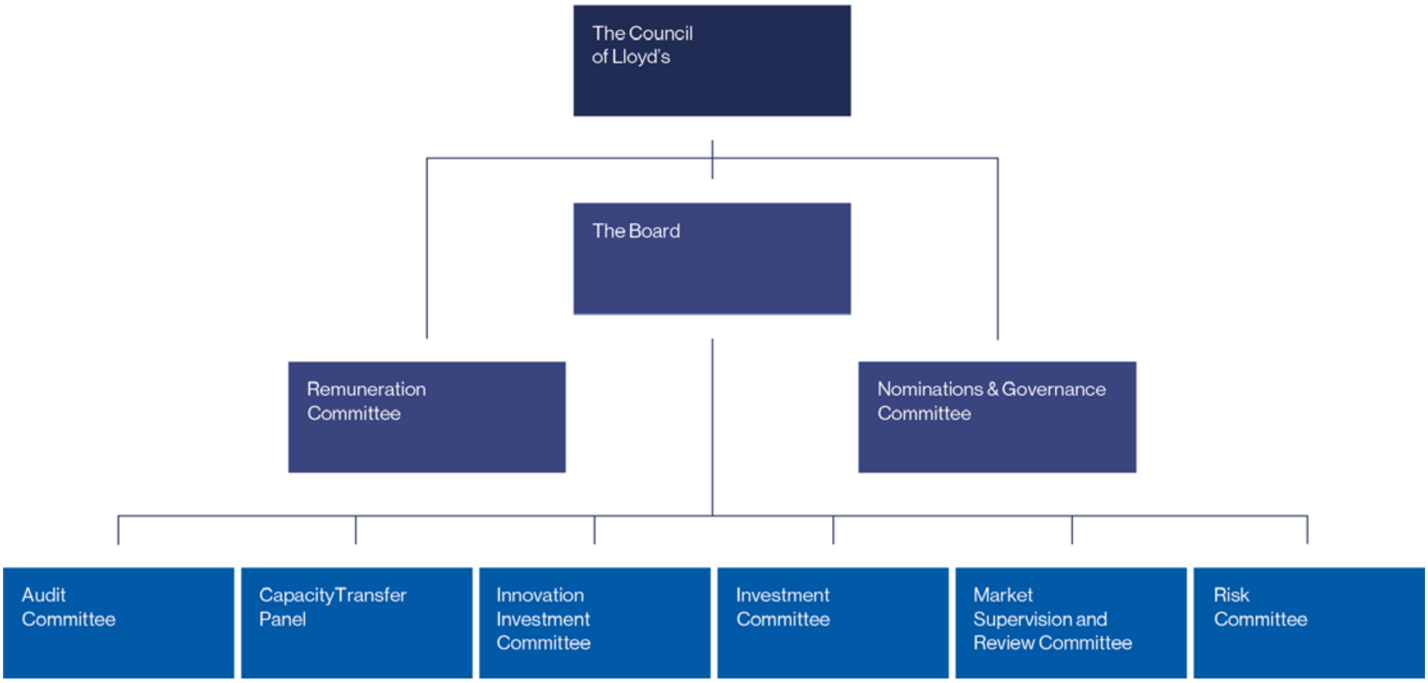
An Act of Parliament, the Lloyd's Act 1982, defines the governance structure and rules under which Lloyd's operates. Under the Act, the Council is responsible for the management and supervision of the market. Lloyd's is regulated by the Prudential Regulation Authority (PRA) and Financial Conduct Authority (FCA) under the Financial Services and Markets Act 2000.

The Council normally has six working, six external and six nominated members. The working and external members are elected by Lloyd's members. The Chairman and Deputy Chairmen are elected annually by the Council from among its members. All members are approved by the PRA.

The Council can discharge some of its functions directly by making decisions and issuing resolutions, requirements, rules and byelaws. Other decisions are delegated to the Board and associated committees.

The Board is responsible for the day to day management of the Lloyd's market. It lays down guidelines for all syndicates and operates a business planning and monitoring process to safeguard high standards of underwriting and risk management, thereby improving sustainable profitability and enhancing the financial strength of the market.

The principal committees of the Council are the Nominations and Governance Committee and the Remuneration Committee. The principal committees of the Board are the Audit Committee, the Risk Committee, the Market Supervision and Review Committee, the Capacity Transfer Panel and the Investment Committee.



Risk Committee

At Board level, the Board Risk Committee (BRC) assists in the oversight of the identification and control of materials risks to the objectives of Lloyd's. On average the BRC meets 6 times a year, and details of Board attendance are tracked and reported against in the Annual report.

Evidence also applies to principle(s): All

Source: The Corporation of Lloyd's

Lloyd's / The Market / ArgoGlobal / Board oversight and involvement

Conscious that the ClimateWise Principles were extensively reviewed in 2018 to bring them into line with the Task-force for Climate-related Financial Disclosures (TCFD) requirements, ArgoGlobal conducted its own internal stakeholder engagement and has as a result strengthened its board governance within ArgoGlobal to ensure that Climate-related risk reporting is brought to the ArgoGlobal Risk & Capital Committee on a quarterly basis.

The Risk & Capital Committee of the Argo Group International Holdings, Ltd. Board of Directors receives periodic updates on material risks, including sustainability related threats and opportunities, as a result of these risk governance arrangements. ESG indices has been raised up to this 'top risk' register during 2018-2019 as a material trend in terms of growing stakeholder interest in these topics.

Tangible measures	Evidence
– Formal presentation made to Argo Managing Agency Board in February 2019 regarding changes in ClimateWise principles and accountabilities of Board.	– Company Secretary has Board paper and extract from minutes
– Board Risk & Capital Committee has started receiving formal update papers from Group Sustainability Working Group starting April 2019.	– Company Secretary has extracts of Board Risk & Capital Committee papers
– Studies of climate change risk are commissioned periodically and reported. Latest Emerging risk report was completed in May 2019 and has been reported through to the Emerging Risk Review Group.	– Chief Risk Officer has a copy of the report.

Source: ArgoGlobal

Lloyd's / The Market / Beazley

Our Chief Underwriting Officer, Adrian Cox, is the board member responsible for climate change risks. He is overseeing the process of reporting against the ClimateWise Principles this year, and for submissions for the Prudential Regulatory Authority's climate change stress tests due later in the year. In addition to his direct involvement, the board receives an annual report from the Responsible Business Committee outlining actions taken in the prior year and objectives for the coming year.

The Head of Commercial Management, who sits on our US board, is responsible for our physical environmental impact across all our offices.

Lloyd's / The Market / Chubb / Climate Risk and Oppurtunities Governance

Chubb's Nominating and Governance Committee has responsibility at the board level for reviewing environmental, social and governance (ESG) issues, including climate change. Under the Chief Risk Officer, risks are evaluated at least annually at three governance levels, with the company's senior management actively engaged in each. The company's Risk and Underwriting Committee, product boards, and risk-related committees meet monthly to evaluate specific risks and risk accumulations in Chubb's business activities and investments, while the Board of Directors' Risk and Finance Committee meets regularly with company management. Various risk-related reports are provided at least quarterly to business division management, product boards and other risk-related committees, senior management, the Risk and Underwriting Committee, the Risk and Finance Committee as well as the full Board.

Chubb's General Counsel has management oversight of the company's environmental, social and governance initiatives, including climate.

Under the auspices of the Global Head of Operation, GHG measurement and reduction activities are managed in Chubb's network of more than 600 offices.

Climate-related opportunities in Chubb's global insurance operations are led by the company's senior business unit managers including Chubb's environmental risk insurance practice.

Chubb has a comprehensive, coordinated global environmental program that touches all areas of the organization. The company's Chief Communications Officer (CCO) is the senior executive responsible for overseeing this program. The CCO is responsible for the company's corporate communications, investor relations and corporate environmental functions, reports to the Chief Executive

Officer (CEO) of Chubb and is a member of the company's senior management team. The goals and objectives of the environmental program are approved by the CEO and the CCO provides regular updates to the CEO and modifies the program as necessary.

Lloyd's / The Market / MS Amlin / Board Responsibility

A significant change to MS Amlin's senior leadership occurred during this reporting period. Simon Beale was appointed MS Amlin's new CEO on 1 April 2018. He replaced Charles Philipps, who previously represented MS Amlin on the ClimateWise Insurance Advisory Council. Simon attended a meeting of the ClimateWise Insurance Advisory Council in November 2019 and has committed climate change risk to feature as an item on the board agenda at least twice a year. Board papers and minutes serve as the evidence of MS Amlin's Board level oversight.

James Few, MS Amlin's Global Managing Director, Reinsurance, has become executive level sponsor for climate and sustainability matters, with accountability and governance reporting to MS Amlin's Board. James is responsible for MS Amlin's $2bn global reinsurance business that offers catastrophe and reinsurance schemes to worldwide regions vulnerable to the adverse effects of Climate change.

Evidence also applies to principle(s): 1.2

Source: MS Amlin

Lloyd's / The Market / NUAL

In light of the proposed Climate Change requirements by the PRA, we will be looking to allocate the Senior Management Function (SMF) in relation to Climate Change, who will be accountable to Board for driving forward the Climate Change initiative.

Evidence also applies to principle(s):

Source: NUAL

QBE / Board led incorporation of Principles into business strategy

In 2018, QBE group reviewed and strengthened its governance around climate risk management by assigning specific responsibilities to the Group Board and Management. Responsibilities for climate-related issues have been assigned to the Group Board due to the long-term strategic importance of this topic for QBE's investment and insurance businesses, and operations. Climate-related issues are a scheduled agenda item, with formal quarterly updates to the Group Board. In addition, divisional Board Risk & Capital Committees regularly receive and review reports on climate-related risks and opportunities affecting each division.

In early 2018, QBE became a signatory to the public Statement of Support for the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD). Following this, in August 2018, we detailed a plan to implement the recommendations of the TCFD and enhance our disclosure of climate-related risks and opportunities for our business over a three-year period.

The Group Board oversees the work of all Board sub-committees. The Group Board sub-committees oversee the disclosure, risk management, investment and operational aspects of climate change, as shown in the graphic below.

Group Board			
Risk and capital	Audti	Investment	Operations and technology
Climate-related risk management	Climate-related financial reporting	Climate-related investment risks and opportunities	Climate-related operational risks and opportunities

The Risk and Capital Committee is responsible for climate-related risk management according to our stated risk appetite, strategy and business plans, the Audit Committee is responsible for climate-related financial reporting (including half-year and full-year reporting on ESG and climate-related information), the Investment Committee is responsible for climate-related investment risks and opportunities and the Operations and Technology Committee is responsible for climate-related operational risks and opportunities.

QBE is fully committed to applying a disciplined approach to risk management and ensuring that our practices and systems are robust, independent and aligned with global best practice. QBE's ERM framework is outlined in QBE's Risk Management Strategy and is supported by frameworks for each risk class, including strategic, insurance, operational, credit, market and liquidity risks. Climate-related risks are assessed and managed through this integrated framework.

The Group Board plays a significant role in the ERM framework and is responsible for ensuring that an effective risk management strategy is implemented and for defining the risk appetite boundaries within which risk must be managed. All risk categories are managed through Board governance, an approved risk appetite set by the Group Board, scenario analysis and stress testing and robust capital management.

The Group Board incorporation of climate change considerations into strategy and planning is evidenced through the 'Operating sustainably' priority included in the 2019 strategy to drive performance. This initiative will continue our focus on sustainability and making positive contributions where we operate by working with our customers, partners and communities to address key economic, social and environmental issues.

Evidence also applies to principle(s): All

Source: QBE Sustainability Report 2018 (p.14); QBE Annual Report 2018 (p.9, 36-37).

Lloyd's / The Market / Tokio Marine Kiln / Accountability

TMK is an active participant of the ClimateWise Managing Committee and the ClimateWise Insurance Advisory Council. TMK CEO, Charles Franks, is a key member of the Managing Committee and Insurance Advisory Council in 2018 and contributes to the discussions and funding of research on climate related matters.

Within TMK, the CEO of Tokio Marine Kiln is the main sponsor for the CSR related activities. This includes the Charity Committee which typically is allocated an annual budget for employees to participate in a broad range of CSR related activities. Furthermore, the TMK facilities team, which also reports to the CEO, has been focused on taking on environmentally friendly initiatives within the firm, as well as generating efficiencies.

Evidence also applies to principle(s): All

Source: Tokio Marine Kiln

1.2 Describe management's (below board-level responsibility) role in assessing and managing climate-related issues.

Lloyd's / The Corporation of Lloyd's

The Corporation oversees the Lloyd's market. It provides the market's infrastructure, including services to support its efficient running, and protects and maintains its reputation. The Corporation's role includes:

- Managing and protecting Lloyd's network of international licences;
- Agreeing syndicates' business plans and evaluating performance against those plans. Syndicates are required to underwrite only in accordance with their agreed business plans. If they fail to do so, Lloyd's can take a range of actions including, as a last resort, stopping a syndicate underwriting;
- Monitoring syndicates' compliance with Lloyd's minimum standards; and
- Continuing to raise standards and improve performance across two main areas:
    - Overall risk and performance management of the market; and
    - Maintaining and developing the market's attractiveness to capital providers, distributors and clients, while preserving its diversity.

Addressing climate change has been incorporated in different streams of work within the Corporation. Examples include: Innovation, Risk, Policy, Investments, Responsible Business, Environmental Working Group, Procurement, Regulatory Affairs.

While other teams address Lloyd's carbon footprint in a much more practical way. For example, by taking steps to reduce the energy consumption of Lloyd's buildings. We are also responsible for a number of market members who rent office space from us, as well as engaging employees with practical steps they can take at work and at home. Examples are listed throughout the report under Corporation of Lloyd's activities.

Risk Management processes

Each year the Corporation identifies the key risks which could have a significant impact on Lloyd's business, and the mitigating actions required to reduce or eliminate the risk.

At Lloyd's, the risk profile originates from both syndicates and at central level. Syndicates are the source of the majority of risks. They source all the insurance business; manage the bulk of the asset portfolios; hold the majority of the counterparty exposures; and conduct most of the day-to-day operational activity. The syndicate risks include: insurance risk (underwriting, reserving and catastrophe risk); market risk on syndicate assets (including credit risk on Premiums Trust Funds (PTF)); reinsurance and other credit risk; and syndicate operational risk. At the central level, additional risks arise from central operational risk, pension fund risk; market risk on central assets; and the risk of member default.

The Corporation of Lloyd's is currently developing its risk management approach to climate-related risks with a key objective for Lloyd's to minimise duplication with work undertaken by the PRA and the FCA, and for the regulators to take comfort from the oversight undertaken by Lloyd's itself (see principle 2.1 for further information on this). This includes having an initial plan in place to address the expectations outlined in SS3/19, further embedding climate change into risk reporting within the Corporation and to submit an updated Senior Management Function (SMF) form by Tuesday 15 October 2019.

The Corporation of Lloyd's supports the establishment of the Climate Financial Risk Forum by the PRA and the FCA, which can act to ensure a co-ordinated approach in the UK to financial risks arising from climate change. David Samson, Interim Chief Risk Officer[b], and Michaele Hawkins, Head of Responsible Business, are currently involved in working groups on risk appetite and disclosure. This activity is also relevant to principle 2.1.

At a management level, the Executive Risk Committee (ERC) is responsible for overseeing the identification and control by management of key risks to the objectives of Lloyd's. The Chief Risk Officer (CRO) Report, presented at the monthly ERC meeting, documents key changes in the risk profile based on qualitative and quantitative risk information: this report is subsequently provided to the BRC and to the Board for information.

Climate change is currently categorised as an emerging risk by the Corporation of Lloyd's. Emerging risks are formally identified on an annual basis and reported within the annual ORSA to both the Executive & Board Risk Committees. Emerging risk activities are also supported by teams across the Corporation, including the Innovation team who are responsible for producing thought leadership activities. Horizon scanning is performed on an ongoing basis: any changes to the risk landscape are reported to the Risk

[b] With effect from 15 October 2018 David Sansom has been acting as Interim Chief Risk Officer

Committee via the quarterly CRO report. Further details can be found in principle 3, including forward planning activities.

Responding to regulatory consultations/regulatory liaison on topics such as climate change, was a mitigation action under the "Significant regulatory and tax changes" key risk (principle 5.1 and 5.2):

Key risk: Significant regulatory and tax changes

Lloyd's sees its competitive position weaken, suffers regulatory penalties or disadvantageous capital position in an era of heightened geopolitical risk and uncertainty.

Mitigation actions:

- Continue to lobby to influence the evolution of UK, European and global regulatory and tax frameworks to maintain the competitive position of the market
- Monitoring Solvency II compliance at Lloyd's
- Responding to regulatory consultations/regulatory liaison on topics such as climate change

Responsible business strategy

At Lloyd's we see responsible business as encompassing an organisation's social, ethical and environmental issues. The Corporation of Lloyd's responsible business approach underpins our core mission, which is to support global economic growth, enable human progress, and help nations, businesses and communities recover post disaster by paying claims.

Lloyd's wants to be known as a responsible business leader, operating in a way that makes those who work for us feel proud of their contribution to what we do and how we do it.

Our programmes focus on four key themes which are integral to Lloyd's and the wider insurance sector. These are:

- Innovation: See principle 2 and 3 for further details.
- Managing risk: See principle 2 for further details.
- Building resilient communities: See principle 3 for further details.
- Empowering individuals to reach their potential: See principle 4 for further details.

As part of the revision of the ClimateWise principles, Michaele Hawkins, Head of Responsible Business, championed a gap analysis across key stakeholders in the organisation who are involved in the Corporation of Lloyd's climate-related activities. This included members of the strategy, investments, procurement, risk, innovation, and government policy and affairs team. These teams also represent collaboration points into other groups across the business, such as the Environmental Working Group, and the Future At Lloyd's consultation.

Responsible investment strategy

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 (principle 2.1, which also includes 2.2 and 2.3 activity).

The Corporation of Lloyd's Treasury & Investment Management (LTIM), led by Nicola Hartley, Head of LTIM, provides specialist fixed income investment management services to the Lloyd's market, on a discretionary basis to Managing Agents and acts as the manager of Lloyd's centralised trust fund assets and the Central Fund. LTIM manages approximately £9bn of assets; for some of the Central Fund investments the role of the investment manager has been outsourced to external firms. Further details of activities can be found in principle 2.

The Corporation has a responsible investment strategy that has been communicated publicly (principle 6.1). Details are available as part of the annual report, Responsible Business webpages, and in outputs throughout the year, such as regulatory responses and media requests.

The Corporation's investment philosophy focuses on generating long term, sustainable capital growth for Central Fund assets. The approach to responsible investment is built upon three core pillars;

- Protecting the Central Fund assets by considering environmental, social and governance risks;
- Promoting responsible business practices in companies through activities such as corporate engagement and shareholder action; and
- Providing capital to support a sustainable future, through investments in green and social impact bonds and by excluding investments in coal focused companies.

Oversight

The Class of Business (COB) team, led by Caroline Dunn, Head of Class of Business, continually monitors press activity and discusses with MAs all issues related to underwriting, including climate-related issues. This allows COB to feed in expert judgment to business planning decisions and the Lloyd's Internal Model (LIM) (principle 3.1 and 3.2).

A future looking view of climate-related risks are also monitored by the Risk Aggregation team, led by Dr Kirsten Mitchell-Wallace, who manages Lloyd's catastrophe risk at syndicate and market levels. Through the Risk Aggregation team, the Corporation of Lloyd's contributed to the PRA "Framework for assessing physical climate change risk". Produced with contributions from a cross-industry working group, the report outlines a framework for practitioners in the general insurance sector to use to assess the financial impacts of physical climate change. This activity also contributes to principles 2 and 3.

Within the Solvency Capital Requirement (SCR) Review Process; managed by Market Reserving and Capital Finance team, managing agents are expected to recognise any potential impacts on peril frequency and severity in their risk models. Whilst the impact is slow year on year, the possibility of an overall worsening of risk levels compared to historic experience is taken into consideration. The review looks for evidence that climate change has been considered and included in the managing agent's internal model where appropriate[c] (principle 3.1 and 3.2).

The Minimum Standards contain requirements which represent the minimum level of performance required of any organisation within the Lloyd's market to meet the Minimum Standards. These are updated on an annual basis, and Minimum Standard 4, Section 8 which deals with Governance is being refreshed around being a responsible business, but there are a number of standards around areas that include underwriting, governance, risk management. See principle 2.1 for further details.

Policy

The Corporation of Lloyd's Government Policy team, led by Alastair Evans, Head of Government Policy & Affairs, engages directly with UK and EU regulators to discuss regulatory policy to facilitate adaptation and mitigation of climate change. For example, in January 2019 we provided a detailed response to the FCA's discussion paper on Climate Change and Green Finance. Further examples can be found in principle 5.1 and 5.2, featuring Corporation employees (principle 4.4 activities).

The Corporation plays an active role in ongoing discussions about climate change within insurance trade associations such as Insurance Europe and GFIA.

It is also a key objective for Lloyd's to minimise duplication with work undertaken by the PRA and the FCA, and for the regulators to take comfort from the oversight undertaken by Lloyd's itself. In support of this, the Corporation of Lloyd's submitted non-confidential responses to the Prudential Regulation Authority "CP23/18: Enhancing banks' and insurers' approaches to managing the financial risks from climate change" and "DP18/08: Climate Change and Green Finance" from the Financial Conduct Authority.

The Corporation of Lloyd's submitted responses to ensure that we understand and act in accordance with regulatory expectations of our role in relation to the market, so that we act in a co-ordinated manner in relation to Lloyd's managing agents. This may include ensuring that syndicates comply with new requirements as they come into effect. See principle 5.1 for further examples.

Innovation

The Innovation team provide materials and frameworks that help the market and policy holders think about their risks. Examples of past work includes City Risk Index, Harvesting Opportunity, Stranded Assets, Climate Change and Opportunity, Food System Shock. Innovation team also engage with the market and external stakeholders through work around disaster risk financing and responding to the protection gap.

Climate related risks are covered in all Innovation team presentations, regulator and government programmes, and public speaking slots from the London team and slide decks, speaking notes, and briefing packs provided to our country managers on request. Last year the Innovation team gave over 80 presentations, the majority of which mentioned the work commissioned in this space, as well as details on our ClimateWise membership and why the Corporation supports disclosure (principle 5.1).

The Innovation team holds positions on the Geneva Association "extreme events and climate risks" group, London Climate Change Partnership, Insurance Development Forum, and ClimateWise's managing committee (principle 5.1 and 5.2).

Evidence also applies to principle(s): 2.1, 3.1, 3.2, 4.4, 5.1, 5.2

Source: The Corporation of Lloyd's

Lloyd's / The Market / ArgoGlobal / Senior Management oversight and involvement

During 2018-2019, Argo Group maintained the operation of its regular Sustainability Working Group (SWG). This group is charged with overseeing the organization's internal sustainability policy, which 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

[c] See Bulletin Y5189, p4

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.

The Group Chief Risk Officer (CRO) is responsible for coordinating sustainability initiatives, including periodic internal reporting. The Sustainability Working Group (SWG), which meets quarterly, supports the CRO by discussing climate change issues and coordinating the corporate activities associated with the Argo Group's sustainability plan. This contributes to principle 2.1 activities.

The SWG met four times during 2018 and has received reports on a range of internal and external developments related to Environmental, Social and Governance (ESG) matters including climate change. The SWG noted the UK regulatory Consultation launched by the Prudential Regulatory Authority (PRA) for a Supervisory Statement indicating an expectation that UK entity board establish clear responsibilities for the financial impact of climate change and setting a risk appetite.

The SWG has expanded its membership to 13 staff during 2018 and established an internal Yammer communication site and 'Degreed' e-learning information exchange to enhance communication on ESG matters within the Group and broaden understanding of developing issues which Argo Group may in future be impacted by. This contributes to principle 4.4 activities, engaging our employees.

Argo Group operates 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 ERM Steering Committee. The ERM Steering Committee receives a quarterly report from the CRO summarizing the activities of the SWG and outlining progress made with the sustainability action plan, including external trends that may become meaningful. This contributes to principle 2.1 activities.

During 2018 the SWG oversaw the development of an external Corporate Responsibility site which seeks to communicate the efforts Argo Group are coordinating on ESG to external stakeholders in a more coordinated matter. This contributes to principle 6.1 activities.

The Research and Development team was created in order to invest dedicated resources into capturing current risk from natural hazards, which is the main pillar of the business. The team of industry scientists and engineers have expertise in seismology, meteorology, hydrology and building design. See principle 3 for further details.

Tangible measures	Evidence
– Board approved formal delegation of ClimateWise responsibility to Board Risk & Capital Committee. Terms of reference of Board Risk & Capital Committee have been updated accordingly. – Risk Working Group received regular papers prior to submission to Board Risk & Capital Committee. – Reports are prepared each quarter based on discussion at Group Sustainability Working Group. Sustainability Working Group has a formal terms of reference in place. Chief Risk Officer responsible for reporting to Committee.	– Company Secretary has extracts of Board Risk & Capital Committee papers and copies of committee terms of reference. – Chief Risk Officer has copies of Sustainability Working Group papers.
– Evidence of papers presented to Risk Working Group and Board Risk & Capital Committee. Process established starting April 2019. – Group Sustainability Working Group meets on quarterly basis and reports into Argo Managing Agency committees.	– Company Secretary has extracts of Board Risk & Capital Committee papers and copies of committee terms of reference. – Chief Risk Officer has copies of Sustainability Working Group papers.
– Management discuss and monitor issues through Risk Working Group (management committee) reporting to Board Risk & Capital Committee.	– Chief Risk Officer has copies of papers and minutes.
– Quarterly reporting cycle in place with Sustainability Working Group reporting through to Risk Working Group and onto Board Risk & Capital Committee. – Annual Own Risk & Solvency Assessment (ORSA) reports for Syndicates 1200 and 1910 refer to key outcomes from a risk impact perspective.	– Reporting evidence noted above.

Evidence also applies to principle(s): 2.1, 3, 6.1

Source: ArgoGlobal

Lloyd's / The Market / Beazley

Our Chief Risk Officer, Andrew Pryde, has executive committee level responsibility for assessing and managing climate change risks, including overseeing public disclosures. Climate change is incorporated into the risk management framework (detailed below in 2.1).

Our Responsible Business Committee oversees initiatives to reduce our physical impact on the environment, and our ability to influence and improve environmental and social outcomes through our underwriting and investment business, through our Marketplace workstream. The RBC is sponsored by an executive committee member, who provides regular updates, and reports directly into the executive committee on an annual basis.

Evidence also applies to principle(s): 1, 2

Source: Beazley

Lloyd's / The Market / MS Amlin / Roles and Responsibilities

MS Amlin is in the process of establishing a Climate Change and Resilience panel that will consider what impact the effects of climate change may have on the risk profile of the Group specifically.

- The impact on insurance risk
- The potential reputational risks associated with Group business activities
- Potential longer term strategic implications.

Consideration will be given to what areas of research could be supported to enhance knowledge of the risks posed by climate change. The panel will also consider under the requirements for Corporate and Social Responsibility what other initiatives in relation to Climate Change might be followed up.

The proposed membership will include representation from key business units and functions including:

- Reinsurance, Property & Casualty and Marine and Aviation strategic business units
- Underwriting modelling
- Risk management
- Marketing
- Property Management
- HR

Evidence also applies to principle(s): 1.1, 2.1, 4.4

Source: MS Amlin

Lloyd's / The Market / NUAL

Going forward Climate Change will be incorporated into our risk management framework and we will look to develop an approach, which will be monitored and reported to Board, via our Risk and Compliance Committee.

Within the framework we will consider whether a risk appetite statement is required and scenario analysis in relation to this risk.

Evidence also applies to principle(s): 1, 2

Source: NUAL

Lloyd's / The Market / QBE / Management's role in assessing and manging climate related issues

In 2018, we established a Group Environmental, Social and Governance (ESG) Risk function and the ESG Business Policy Committee. The ESG Risk function is responsible for coordinating the identification, analysis and management of ESG risks and integration into our risk management practices and systems across the business, reporting to the Group Chief Risk Officer (CRO). The ESG Business Policy Committee is responsible for managing and overseeing activities to identify and review ESG risks and developing appropriate policy and decision-making frameworks. In addition, the Committee considers and recommends policy positions on ESG risks that impact underwriting, investment and/or operations across the Group to the Executive Risk & Capital Committee.

QBE's Group CEO and Group Executive Committee (GEC) are responsible for implementing QBE's climate change strategy. The GEC receives regular updates on the approach and performance in managing climate-related risks and opportunities and reviews progress in achieving the Climate Change Action Plan (CCAP), which was produced in response to recommendations from the Task Force on Climate-related Financial Disclosures (TCFD). The Board Risk and Capital Committee (BRCC), which met six times in 2018, receives regular updates on climate change and serves as an escalation point based on analysis and deliberations within the Group Executive Committee (GEC).

The graphic below demonstrates how the GEC is supported by the Group Chief Risk Officer, the Group Chief Financial Officer, the Group Chief Underwriting Officer, the Group Chief Investment Officer, the Climate Change Working Group (CCWG), the ESG Business Policy Committee, the Head of ESG Risk and the Group Head of Sustainability.

Group Executive Committee

Accountable for implementation of climate change strategy

Receive and review progress reports

Group CRO

Accountable for embedding climate-related risk into the Group's risk management framework

Group CFO

Accountable for reviewing climate-related disclosures including TCFD

Group CUO

Accountable for embedding climate-related risks and opportunities within underwriting decisions

Group Executive, Corporate Affairs and Sustainability

Accountable for embedding climate strategy into company brand, narrative and engagement

Head of ESG Risk

Integration of climate-related risks and opportunities into business processes

Delivery and reporting on the climate change action plan

Group Chief Investment Officer

Integrating climate-related risks and opportunities into investments

Group Head of Sustainability

Alignment of climate-related strategy with overall sustainability strategy

External reporting and stakeholder engagement

ESG Business Policy Committee

A new committee to review ESG business policies and strategies, including climate-related policy positions, and provide recommendations to the Group Executive Risk & Capital Committee for approval

Climate Change Working Group

Cross-functional working group on climate change, including senior representatives from sustainability, underwriting, investments, finance, risk, regulatory and operations

QBE management are informed about and manage climate-related issues through a number of processes which are integrated into our business strategy and guide our decision-making, including but not limited to:

- Our Group Environmental Policy, which sets out our commitment to minimising our impact on the environment (including our climate-related impact) as this relates to our operations and supply chain, investment and underwriting activities, as well as employee engagement, governance and reporting.
- Our Group Energy Policy, which sets out our intention to phase out all direct insurance services for thermal coal customers by 2030, at the latest. We also commit to targeting zero direct investments in the thermal coal industry by 1 July this year, while maintaining a margin of up to 0.5% of total funds under management.
- QBE's Environmental Sustainability Plan sets out our program of work to reduce our direct climate-related impact, including through application of best practice property and technology design standards, energy efficiency and onsite solar generation activities, and transitioning to 100% renewable electricity for our operations.
- Investments and Insurance: QBE has also integrated climate-related issues into our business strategy by performing analysis to understand portfolio exposure to climate risks and opportunities, including in 2018, coal exposure analysis and transition risk portfolio analysis. Transition risk may arise in our investments where companies within our portfolio are not aligned to the Paris Agreement targets, and so expose QBE to sudden drops in asset values or increased credit risk. Predominantly, transition risk is associated with carbon intensive industries. We assessed our credit portfolio by applying the 2 Degrees Investing Initiative (2Di) Paris Agreement Capital Transition Assessment Tool (PACTA) to confirm that our credit portfolio, which represents 80-90% of the portfolio, is aligned to the Paris Agreement, both now and in five years' time. We performed an internal analysis to assess coal-specific transition risks in the total investment portfolio and coal-related assets. The analysis confirmed that we have less than 1% of our investment portfolio in coal related assets. The analysis affirms our investment philosophy and our focus on contributing to a low-carbon economy.

Evidence also applies to principle(s): All

Source: QBE Sustainability Report 2018 (p.14); QBE Annual Report 2018 (p.36-37); Group Environmental Policy; Group Energy Policy (policies available here: https://www.qbe.com/about-qbe/sustainability/climate-change*).*

Lloyd's / The Market / RenaissanceRe Syndicate Management Ltd / Senior Management

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.

Stephen is also a Trustee for the Bermuda Institute of Ocean Sciences, which is a non-profit organisation which has contributed to 'seminal advances in the field of climate research'[1].

Evidence also applies to principle(s): All

Source: RenaissanceRe Syndicate Management Ltd

Lloyd's / The Market / Tokio Marine Kiln/Accountability

The Charity Committee is accountable for the funding and selection of charitable activities in which the employees are engaged in. In 2018, employees and company efforts led to over £160,000 being donated to a range of charities in the UK and globally. For example, TMK has been sponsoring the Sierra Leone marathon for the 8th year running where the total funds raised this year (£10,300) continue to benefit the StreetChild charity's mission. TMK also recently completed a three-year partnership with WaterAid where, in 2017, more than £10,000 was raised and a TMK employee visited numerous pieces of work that Water Aid have carried out in Madagascar and had the opportunity to assist in their efforts to alleviate poverty and provide clean sanitation to those in developing countries.

The TMK facilities team has been focused on environmentally friendly initiatives within the firm. Some of these include active recycling and monitoring of waste and energy consumption. They engaged external environment consultants who help to quantify improvement each year and provide recommendations for areas of improvement.

Evidence also applies to principle(s): All

Source: Tokio Marine Kiln

2. Incorporate climate-related issues into our strategies and investments

2.1 Evaluate the implications of climate change for business performance (including investments) and key stakeholders.

Lloyd's / The Corporation of Lloyd's

Corporation facing

The Corporation of Lloyd's will develop a responsible business strategy which provides a framework that allows us to monitor, measure and report on our performance. The strategy will be based on the United Nations Global Compact and Sustainable Development Goals and will be approved by the Board. Michaele Hawkins is the Head of Department responsible for the strategy and leading the implementation across directorates.

The strategy will be published in 2020 and only applies to the Corporation of Lloyd's activities, and will not apply to any Lloyd's market activities or any market oversight activities the Corporation carries out with the market.

Areas of focus include community involvement, diversity and inclusion, and the environment. Details of these activities are shared publicly in the Annual report, and through a dedicated website area to communicate information to our market and all other stakeholders.

Goals within the environment component, include seven areas of commitment:

1. Our commitment to reducing greenhouse gases
2. Our commitment to climate change
3. Our commitment to supporting communities
4. Our commitment to renewable energy in the UK
5. Our commitment to waste management
6. Our commitment to sustainable buildings
7. Our colleagues are also committed

1. Our commitment to reducing greenhouse gases
The Corporation of Lloyd's has been working with Carbon Smart, our environmental consultants, to track greenhouse gas emissions (GHG) from our global operations. These are published each year in our annual report.

A full inventory, including Carbon Smart's public opinion statement, can be found in our Carbon Smart public statement and Greenhouse Gases report 2018. See principle 4.2 and 4.3 for further details.

Metrics and targets

Reduce energy consumption by 1% based on previous year's figures.

2. Our commitment to climate change
The Corporation Lloyd's is a committed member of ClimateWise; a community of leaders supporting the insurance industry respond to the risks and opportunities of climate change. During the reporting period, Michaele Hawkins, Head of Responsible Business and Lucy Stanbrough, Innovation team, held positions on the ClimateWise Managing Committee (principle 2.1).

3. Our commitment to supporting communities
The Corporation of Lloyd's offsets air travel emissions by buying carbon credits for carbon offset projects through Natural Capital Partners (principle 4.3).

We are currently supporting an improved cook stoves project in India. Due to traditional stove cooking practices, over 900 million people are exposed to indoor pollution on a daily basis. The new cook stoves we are supporting are designed to be 60% more fuel efficient and durable. This project has distributed 490,000 stoves since 2008, ensuring that the health and financial benefits from the reduced pollution and fuel costs can be seen across India.

4. Our commitment to renewable energy in the UK

The Corporation of Lloyd's purchases 100% renewable electricity for our offices in London and Kent. There is also an action in the Environmental Working Group 2019 action plan to continue sourcing renewable energy for the UK offices over the next reporting cycle. See principle 4 for further details.

5. Our commitment to waste management

The Corporation of Lloyd's is supportive of the landfill tax (£82.6/tonne of waste disposal to landfill) and we are proud to have a "zero to landfill" policy. 82% of the waste from UK offices is recycled and the remaining general waste is used as fuel for power generation. See principle 4.3 for further details.

The Corporation's catering team in the UK is working hard to reduce our carbon foodprint with the aim of eliminating single use plastics from our restaurants by changing our disposable products. See principle 4.1 for further details.

We are proud that the Corporation of Lloyd's commitment to waste management was recognised in 2018 when we were given a Platinum Award in the City of London's annual Clean City Awards.

Metrics and targets

In the UK, the Corporation aims to reduce the amount of waste we generate to 25kg per person per year by the end of 2019.

6. Our commitment to sustainable buildings

The Corporation of Lloyd's puts the environment at the centre of its office planning. LEED (Leadership in Energy and Environmental Design) is the most widely used green building rating system in the world, providing a framework to create healthy, highly efficient and cost-saving green buildings. LEED certification is a globally recognised symbol of sustainability achievement.

Four of Lloyd's offices have been given LEED status and two more have local accreditation. See principle 4 for further details.

7. Our colleagues are also committed

The Corporation of Lloyd's has a cross-directorate Environmental Working Group that drives forward our environmental agenda through an annual action plan. Further details can be found in the Environmental and Energy Policy[d]. This policy is due to be updated.

The Lloyd's Responsible Business team also work with global sustainability champions to encourage them to take practical action to make their offices more sustainable as well as encouraging personal action outside of work. This culminates with World Environment Week in June each year. See principle 4.4 for further details.

The Corporation's policies

- Environmental and Energy policy requires the co-operation and support of all managers, employees, tenants, contractors and visitors in its implementation. The Chief Executive Officer, takes overall responsibility for environment and energy usage including the formulation, development and implementation of the policy.
- Lloyd's puts the environment at the centre of its office planning. LEED (Leadership in Energy and Environmental Design) is the most widely used green building rating system in the world, providing a framework to create healthy, highly efficient and cost-saving green buildings. LEED certification is a globally recognised symbol of sustainability achievement. Four of Lloyd's offices have been given LEED status and two more have local accreditation.
- Lloyd's mission is to deliver an effective and sustainable approach to all third-party sourcing and supplier management, with a clear purpose to support our Protect, Promote and Provide principles while achieving maximum value, minimising risk and driving efficiencies to invest in the future.

  Please see our vision and our expectations from our suppliers in our Sustainable Procurement Statement and our Supplier Code of Conduct. Further information can be found in principle 4. 1.

Investment

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 (principle 2.2).

The Corporation of Lloyd's Treasury & Investment Management (LTIM) provide specialist fixed income investment management services to the Lloyd's market, on a discretionary basis to Managing Agents and acts as the manager of Lloyd's centralised trust fund assets and the Central Fund. LTIM manages approximately £9bn of assets; for some of the Central Fund investments the role of the investment manager has been outsourced to external firms.

[d] Lloyd's Environmental and Energy Policy

Capital structure

Lloyd's capital structure, often referred to as the Chain of Security, provides excellent financial security to policyholders and capital efficiency for members. The capital structure provides the financial strength that ultimately backs all insurance policies written at Lloyd's and the common security that underpins the market's strong ratings and global licence network.

Lloyd's capital structure has three elements:

- Syndicate level assets: All premiums received by syndicates are held in trust by the managing agents as the first resource for paying policyholders' claims and to fund regulatory deposits. Until all liabilities have been provided for, no profits can be released. Every year, each syndicate's reserves for future liabilities are independently audited and receive an actuarial review.
- Members' funds at Lloyd's: Each member, whether corporate or individual, must provide sufficient capital to support their underwriting at Lloyd's. Managing agents are required to assess the Solvency Capital Requirement (SCR) for each syndicate that they manage. This sets out how much capital the syndicate requires to cover its underlying business risks at a 99.5% confidence level. In light of Lloyd's mix of business, it is important that this assessment goes beyond the 12-month horizon required by Solvency II and must cover the risk of such extreme losses until all liabilities are paid and extend to an ultimate basis.

  The Corporation reviews each syndicate's SCR to assess the adequacy of the proposed capital level. When agreed, each SCR is then 'uplifted' to ensure there is sufficient capital to support Lloyd's ratings and financial strength. The uplift applied for 2017 is 35%. This uplifted SCR is known as the syndicate's Economic Capital Assessment and drives members' capital levels across all of the syndicates in which they participate in proportion to their share of those syndicates. Each member's capital is held in trust by the Corporation for the benefit of policyholders but is not available for the liabilities of other members.
- Central assets: The central assets, which include the Central Fund, are available, at the discretion of the Council of Lloyd's, to meet any valid claim that cannot be met from the resources of any member. Should syndicates need additional assets to meet their liabilities, the funds at Lloyd's ensure that members have additional resources available. In the rare event that a member's capital is insufficient, and that member is not able to provide further assets to the relevant syndicates, Lloyd's central capital provides further financial support to ensure valid claims are paid.

  The Corporation calculates the central Solvency Capital Requirement, which is independently validated and overseen by the PRA. The Franchise Board sets the level of economic capital needed above the regulatory minimum to meet its risk appetite and support the market's ratings and global licence network.

This distinction is important to remember for the Corporation's Responsible investment strategy.

Responsible Investment Strategy

The Corporation's investment philosophy focuses on generating long term, sustainable capital growth for Central Fund assets. The approach to responsible investment is built upon three core pillars (principle 3.1);

- Protecting the Central Fund assets by considering environmental, social and governance risks;
- Promoting responsible business practices in companies through activities such as corporate engagement and shareholder action; and
- Providing capital to support a sustainable future, through investments in green and social impact bonds and by excluding investments in coal focused companies.
- Further information on the Corporation of Lloyd's Responsible Investment strategy can be found in principle 1.1.

Voting and Engagement

LTIM continues to employ the services of an overlay manager, BMO Global Asset Management (BMOGAM), to engage with companies in which Lloyd's Central Fund invests as a shareholder and to exercise the Central Fund's voting rights in pursuit of Environmental, Social and Governance (ESG) goals.

In the past year, LTIM (Lloyd's Treasury & Management) has extended engagement activities to cover companies where Lloyd's is a debtholder not just an equity holder (principle 3.1). In 2018, BMO voted at 186 company shareholder meetings in respect of the Central Fund's equity investments. BMOGAM engaged with 91 companies in which the Central Fund is invested, leading to 46 instances where the approach to ESG issues was changed, as a result of the engagement. Further examples have been provided to PwC for review.

Risk Management

Last year, the Corporation reported on a risk framework developed by LTIM to better capture and illustrate the ongoing assessment of individual external investment managers. This oversight framework considers a manager's current commitment and approach to Responsible Investment as one of six key areas of risk.

Another key area is Thematic Risk which includes a measure of the exposure to stranded assets of those Central Fund assets the manager is responsible for, according to the methodology set out in last year's ClimateWise submission. Each manager's profile across the six key risk areas is considered on a quarterly basis to produce an overall RAG (Red/Amber/Green) rating for the manager. If the rating is not green, then a more in-depth review of the manager will be scheduled. In-depth reviews can result in a manager being retained or replaced (principle 3.1).

Market facing

The Corporation of Lloyd's has a market oversight role with regards to climate related risks. It does this in a number of ways, examples are outlined in this section.

Market oversight

The overall purpose of the Corporation of Lloyd's is to create and maintain a competitive and secure market place where insurance and reinsurance business can be transacted. The Lloyd's Market Oversight Plan is a key component to achieving just that and enables us to share our priorities for the coming year with the Lloyd's market.

Market oversight remains a strategic priority for the Corporation, and for 2019 our significant areas of focus are; sustainable performance of the market, including consideration of Lloyd's' solvency; operational risk; brand and reputation. In addition to supervisory activities, which aim to ensure that oversight is appropriately balanced and is proportionate to the risks faced, it is important that Lloyd's market oversight is supportive of sustainable, profitable business and is valued by all stakeholders. See principle 1.2 for futher details.

Minimum standards

The Minimum Standards contain requirements which represent the minimum level of performance required of any organisation within the Lloyd's market to meet the Minimum Standards. These are updated on an annual basis, and Minimum Standard 4, Section 8 which deals with Governance is being refreshed around being a responsible business, but there are a number of standards around areas that include underwriting, governance, risk management.

Within these documents the standards and supporting requirements are set out in the blue box at the beginning of each section:

GOV 8.1 Responsible Business

The managing agent recognises the impacts of their business on wider society and acts in a way that is responsible.

Managing agents shall demonstrate that:

- The Board and senior leaders establish and oversee the responsible business culture and ethos of their organisation, which includes guidance on ethical values and behaviours
- There is guidance and a process in place for employees to raise concerns and report misconduct
- Their governance and management structures acknowledge the importance of, and have processes in place, to address the social, environmental and ethical impacts of their operations
- They comply with all relevant legislation

The remainder of each section consists of guidance notes that explains the standards and requirements in more detail and gives examples of approaches that managing agents may adopt to meet them. For example, ClimateWise is included as an external framework that businesses can sign up to in order to benchmark their business practices, and we will be looking to include the Taskforce for Climate Financial Disclosure (TCFD) as a further example of how managing agents might achieve this.

The guidance notes are intended to provide reassurance to managing agents as to approaches which would certainly meet the Minimum Standards and comply with the requirements. However, it is appreciated that there are other options which could deliver performance at or above the minimum level and it is acceptable for managing agents to adopt alternative procedures provided they can demonstrate the requirements to meet the Minimum Standards. In an area like climate related risks this is especially important as there are no set frameworks or processes available, and every managing agents risk appetite and exposure will be different.

Solvency Capital Requirement (SCR) process

In order to meet Lloyd's requirements, each syndicate is required to calculate its Solvency Capital Requirement (SCR) for the prospective underwriting year. This amount must be sufficient to cover a 1 in 200-year loss, reflecting uncertainty in the ultimate run-off of underwriting liabilities (SCR "to ultimate"). The SCRs of each syndicate are subject to review by the Corporation and approval by the Lloyd's Capital and Planning Group.

Whilst the impact of climate change is slow year on year, the possibility of an overall worsening of risk levels compared to historic experience should be taken into consideration; managing agents are expected to recognise any potential impacts on peril frequency and severity in their risk models. The 2019 Syndicate SCR Review Process will look for evidence that climate change has been considered and included in the managing agent's internal model where appropriate (principle 1.2 and 3.1).

Evidence also applies to principle(s): 1.1, 1.2, 2.1, 2.2, 3.1, 4.2, 4.3,

Source: The Corporation of Lloyd's

Lloyd's / The Market / ArgoGlobal / Analysis of business impact

The Research and Development team was created to invest dedicated resources into capturing current risk from natural hazards, which is the main pillar of the business. The team of industry scientists and engineers have expertise in seismology, meteorology, hydrology and building design. This contributes to principle 3.2 activities,

Argo Group recognizes the impact of climate change on the global community, and that is why we consider climate change in both our modeling of risk exposure and our underwriting decisions. The Research and Development team was created to invest dedicated resources into capturing current risk from natural hazards, which is the main pillar of the business. The team of industry scientists and engineers have expertise in seismology, meteorology, hydrology and building design. We have developed our own view of risk, which is used to make underwriting and management decisions. It is based on a combination of third-party vendor models, plus our proprietary adjustments. In cases where a model does not exist or is not appropriate, we have developed proprietary models: for example, for North American Wildfires, Marine, Political Violence, Clean Energy, and others.

Quantification of the effects of shifts in the climate is embedded in the pricing model validation process. Internal processes require that each component of every meteorological catastrophe models is validated for appropriate use and subsequently adjusted to incorporate available data points and the latest science into the current state of the climate. Stochastic event frequency has been calibrated to the company's internal view of risk, which is reassessed annually to consider any emerging developments in the understanding of the changing risk from these perils. The team has developed bespoke solutions to account for emerging climate risks including US Wildfire and flooding from tropical cyclone precipitation. These adjustments are reviewed by underwriters and approved by an internal committee before submitting to external regulators and implementing into the view of risk across business units.

The company is considered to be a leader in this field. The Research and Development team has initiated discussions across the market by presenting model comparisons at industry events for UK Flood, US Hurricane, and Climate Change Risk, among others. The team is involved in original climate research in peer reviewed journals and has close ties with academic institutions at the forefront of climate science. This also contributes to principle 3.2 activities.

Argo Group has 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 the total Atlantic basin hurricane event frequency decreases with increasing global temperature, but that the frequency of the strongest events increases. Hence, there is a likelihood 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 integral to climate variability and model calibration frequency adjustments, we are unable to explicitly isolate the effect of climate change to quantify its effect on losses.

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. This also contributes to principle 2.3 activities. The risk management function concluded its discussions with a number of investment managers during 2018 with respect to the implications of the growth in ESG (Environmental-Social-Government) indices and their impact on investor decision making. This led to the creation and launch of an external Corporate Responsibility site which seeks to communicate the efforts Argo Group are coordinating on ESG to external stakeholders in a more coordinated matter. This also contributes to principle 5.1 activities.

Argo Group operates its investment management function through a series of outsourced arrangements using a variety of investment managers. To the extent that Argo Group's external investment management firms consider the impact of climate change on those parts of the Argo Group portfolio under their management, Argo Group by extension, is considering the impact of climate change on its investment portfolio and its investment management guidelines and strategy.

The nature of carbon-based extractive industries such as coal, and the potential impact of their operations on climate change have been recognized by Argo Group. Investment in coal extractive industries currently remains at less than 0.1% of the Argo Group investment portfolio, a level that is not anticipated to significantly increase in the future. The holding in Westmoreland Coal was exited during Q1 2019. Opportunities to invest in clean energy technology are being evaluated. A waste-to-heat power plan and a wind turbine manufacturer have been evaluated but not progressed due to contractual or competitive concerns.

Argo Group has identified 'Stranded Assets' as a strategic risk factor with potential material impacts over the longer-term horizon. Argo Group has reviewed its investment strategy as a part of its sustainability plan to identify high-carbon industry holdings. Utilizing the Lloyd's of London report entitled "Stranded Assets: the transition to a low carbon economy - Overview for the insurance industry', Argo Group has performed stress test scenarios that consider the potential impact of high-carbon assets within its investment portfolio on its capital adequacy. This also contributes to principle 3.1 acitivities. These stress test scenarios results were combined with other scenarios within the Stress & Scenario Testing Framework (SSTF) and the outcomes have been reported to the ERM Steering Committee and Risk & Capital Committee of the Argo Group Board, as a part of the Own Risk & Solvency (ORSA) Assessment process. These activities contribute to evidence for principles 1.1 and 1.2.

Tangible measures	Evidence
– The Sustainability Working Group (SWG) maintains a specific ESG/Sustainability threat and opportunity register. This document was established in 2016 and is refreshed at least every 6 months. This tracks current and future threats and opportunities, plots them on a heat map and establishes priorities. The risk register captures current mitigation/ realisation plans and recommended actions with due dates, priorities and action owners. The risk assessment is reviewed by the SWG and a summary provided to the Enterprise Risk Management steering committee for discussion. A headline report is provided to the Group Board Risk & Capital Committee and the AMA Risk & Capital Committee. – A market and product disruption matrix is completed annually in conjunction with Group Underwriting. This looks at a number of disruption and change drivers and their potential impacts on products and lines of business across Argo including AMA. Climate Change risk is one of the change drivers included. This is reported to the Emerging Risk Review Group and to each Line of Business (LOB) Underwriting Committee.	– Risk Assessment templates – Risk Assessment summary findings Papers to SWG – Papers to ERM steering committee – Papers to Board risk committees
– Evidence includes the use of the product disruption matrix as an input to business planning processes and underlying considerations.	– Product disruption matrix inputs from underwriters and outcomes
– Evidence includes the develop of clean energy related product offering (Syndicate 1910) with specific financial performance guarantee products which underwrite the performance of solar panel arrays, biomass plants and fuel cells, with policies written for typically 10-15-year period so covering long-term performance.	– Information available on external website to demonstrate.
– Sustainability Working Group (SWG) includes Head of R&D who is focused on climate risk modelling and research and is a member of the ClimateWise management committee.	– Members can be evidenced

Evidence also applies to principle(s):
Source: ArgoGlobal

Lloyd's / The Market / Beazley

During 2018 Beazley's risk management department completed a risk profile covering the potential risks posed to our group of climate change. The relevant risks and mitigation activities we have in place are disclosed in our 2018 annual report.

The warming of the global climate is recognised as an important emerging risk due to its widespread potential impact on the global population, environment and economy. A key aspect of Beazley's business model is to support our clients who have been affected by natural catastrophes, helping them return to pre-catastrophe conditions as soon as possible.

As a specialist insurer, various classes of business we underwrite are subject to the effect climate change presents to the risk environment. As part of the underwriting process, we work with our insureds to understand the risks facing their organisation, including applicable climate related risks, to tailor insurance coverages to mitigate the associated financial risks.

We acknowledge and accept that over time climate change could impact the risks facing our insureds and we aim to manage the resulting risk to Beazley as described below:

- Pricing risk: This is the risk that current pricing levels do not adequately consider the prospective impact of climate change resulting in systemic underpricing of climate exposed risks. The group's business planning process establishes how much exposure in certain classes of business or geographic area we wish to accept. We benefit from a feedback loop between our claims and underwriting teams to ensure that emerging claims trends and themes can be contemplated in the business planning process, the rating tools and the underwriter's risk by risk transactional level considerations. Our underwriters are empowered to think about climate risk during their underwriting process in order to determine the implication on each risk.
- Catastrophe risk: This is the risk that current models do not adequately capture the impact of climate change on the frequency, severity or nature of natural catastrophes or other extreme weather events that could drive higher-than-expected insured losses. The group utilises commercial catastrophe models to facilitate the estimation of aggregate exposures based on the group's underwriting portfolio. These catastrophe models are updated to reflect the latest scientific perspectives. Catastrophe models are evolving to include new or secondary perils which may be related to climate change. In addition, the group runs a series of Natural Catastrophe Realistic Disaster Scenarios (RDS's) on a monthly basis which monitors the group's exposure to certain scenarios that could occur. These RDS's include hurricanes in the US, typhoons in Japan, European windstorms and floods in the UK.
- Reserve risk: This is the risk that established reserves are not sufficient to reflect the ultimate impact climate change may have on paid losses. This includes liability risk, such as unanticipated losses arising from our clients facing litigation if they are held to be responsible for contributing to climate change, or for failing to act properly to respond to the various impacts of climate change. With support from our group actuarial team, claims teams and other members of management the group establishes financial provisions for our ultimate claims liabilities. The group maintains a consistent approach to reserving to help mitigate the uncertainty within the reserves estimation process.
- Asset risk: This is the risk that climate change has a significant impact across a number of industries which may negatively impact the value of investments in those companies. The group considers the impact of climate change on its asset portfolio by seeking to incorporate an assessment of environmental risks in the investment process. We subscribe to the research services of a specialist company in the field of environmental, social and governance research and have integrated their proprietary ratings into the internal credit process applied to investments in corporate debt securities. A minimum standard for the economic scenario generator performance is defined and companies not meeting the required standard will be excluded from the approved list of issuers. The analysis also includes a consideration of the sustainability of each company with regard to the potential decline in demand in specific sectors.
- External event risk: This is the risk that the physical impact of climate related events has a material impact on our own people, processes and systems leading to increased operating costs or the inability to deliver uninterrupted client service. The group has business continuity plans in place to minimise the risk of an interrupted client service in the event of a disaster.
- Commercial management risk: The group aims to minimise where possible the environmental impact of our business activities and those that arise from the occupation of our office spaces. As we operate in leased office spaces our ability to direct environmental impacts is limited. However, we do choose office space and engage with our employees, vendors and customers in an effort to reduce overall waste and our environmental footprint.
- Credit risk: As a result of material natural catastrophe events, there is a risk that our reinsurance counterparties are unable to pay reinsurance balances due to Beazley. If the frequency or severity of these events is increased due to climate change this could have a corresponding increase on credit risk. An important consideration when placing our reinsurance programme is evaluation of our

counterparty risk. Every potential reinsurer is evaluated through a detailed benchmarking which considers: financial strength ratings, capital metrics, performance metrics as well as other considerations.

- Regulatory and legal risk: Regulators, investors and other stakeholders are becoming increasingly interested in companies' response to climate change. Failure to appropriately engage with these stakeholders and provide transparent information may result in the risk of reputational damage or increased scrutiny. The group regularly monitors the regulatory landscape to ensure that we can adhere to any changes in relevant laws and regulations. This includes making any necessary regulatory or statutory filings with regard to climate risk.
- Liquidity risk: Linked to the underwriting and credit risks noted above, there is a risk that losses resulting from unprecedented natural disasters or extreme weather could erode our ability to pay claims and remain solvent. The group establishes capital at a 1:200 level based on the prevailing business plan.
- Strategic risk: This is the risk that our strategy fails to effectively consider climate change resulting in our business planning not adapting fast enough to respond to changes in wider claims trends. This creates a transition risk that our underwriting portfolio might not keep pace with the changes, being heavily exposed to declining industries and failing to capitalise on the opportunities. Our Emerging Risks analysis and business planning process seeks to mitigate this risk through horizon scanning for our longer-tail book, while we are able to be more flexible in responding to events impacting our short tail exposures.

Evidence also applies to principle(s): 3.1

Lloyd's / The Market / MS Amlin / Investments perspective

As a result of MS Amlin's insurance and reinsurance core business, MS Amlin has an investment asset portfolio in excess of £6billion, consisting of Fixed Income (Bonds Duration and Bonds Zero Duration/Absolute Return Funds), Equity, Property and Cash. MS Amlin manages investments on a multi-asset, multi-manager basis, appointing sub-advisors to implement stock selection.

As long term investors, we are aware of the importance of stewardship and sustainability, which have been gaining support globally, alongside ESG integration in investing, which involves the inclusion of Environmental, Social and Governance factors into investment analysis.

The majority of our sub-advisors are signatories to the UN Principles of Responsible Investment (PRI) which encourages managers to incorporate ESG issues into their decision making process. Our sub-advisors believe that sustainable investing is synonymous with good fund management and in order to deliver strong and sustainable returns, their strategies incorporate changes in consumer views, investors' expectations and economic trends which all tend to a more sustainable world, for example renewable energy, the zero-carbon economy etc..

Most of our Equity sub-advisors have an approach that aims to identify companies that are able to produce consistent and sustainable returns in the long run and recognize the importance of identifying and managing ESG risks and opportunities as a component of investment analysis, in line with the ESG investment risk policies implemented in the wider internal framework.

Whilst we have a holistic approach to investing, we actively engage with our Sub-Advisors (Fund managers) and encourage disclosure detailing their ESG activities and assessments of the climate risks when choosing their investment strategy, which we monitor on a regular basis via annual reports and investment stewardship reports. There has been increasingly more information provided by our sub-advisors, compared to previous years, on the extent to which ESG factors are integrated in their investment strategies, which is a step in the right direction.

There is an increased level of awareness across our sub-advisors of the impact of climate change when considering investing in securities, particular in the energy sector. Some of our sub-advisors divested from the coal sector as this commodity as well as the companies that produce it, are at risk of being replaced by renewables in the long term.

MS Amlin Investment Management are currently collecting more ESG information related to our holdings and are working with our custodian to better understand how to embed sustainable investing further within the MS Amlin portfolio.

Evidence also applies to principle(s): 2.2

Source: MS Amlin

Lloyd's / The Market / QBE / Implications of climate change for business performance

In 2018, we worked with Deloitte to undertake a high-level impact assessment of QBE's climate-related risks and opportunities in the short, medium and long-term. We considered the physical, transition and liability risks that may impact QBE's key products and services, customer groups, geographic locations and business operations including a review of changing stakeholder needs and expectations. The high-level impact assessment informed our ongoing discussions with the Group Board and GEC and formed the basis for the development of our CCAP. As part of this plan, the analysis of our Energy portfolio (both underwriting and investments), as discussed in section 1.1, illustrates the impact climate-related risks and opportunities are having on QBE's business, strategy and financial planning. The resulting development of our Group Environmental Policy and Group Energy Policy demonstrate how QBE is developing a business strategy considering longer time-frames, for example phasing out all direct insurance services for thermal coal customers by 2030, as well as our Environmental Sustainability Plan.

The Head of ESG Risk is responsible for the delivery and reporting on the CCAP, and therefore encourages better disclosure of climate information.

In 2018, we updated our Investment approach to reflect our stronger commitment to considering ESG factors when assessing risk and integrating them into key investment decisions. We also refreshed our Responsible Investments (RI) Guidelines, including requiring a minimum of 75% of our external managers to be Principles of Responsible Investments (PRI) signatories, and currently 85% are signatories, to reflect our sharper focus on ESG factors across our investment portfolio. These criteria are evolving to include both minimum standards as well as an ambition to manage the overall portfolio carbon metrics to an environmentally responsible level over time. During 2018 we initiated dialogue with the largest greenhouse gas emitters in our credit portfolio in relation to their commitment to implementing the TCFD recommendations.

To understand the ESG and sustainability performance of the real estate fund managers, in 2018 QBE joined Global Real Estate Sustainability Benchmark (GRESB) as an investor member in 2018 and reviewed the ESG and sustainability performance of the real estate portfolio managers. Based on the GRESB real estate sustainability benchmarks, the weighted average for the property portfolio is GRESB 4 Star and is in the top quartile GRESB.

Launched at Lloyd's of London in March 2015, Premiums4Good is a unique initiative that enables targeted customers to invest a portion of their premium in securities with an additional environmental or social objective, such as green bonds and investments in infrastructure projects with environmental benefits. The initiative is free and there are no risks involved for the customer. This initiative has stimulated the development of new investment products that offer risk-adjusted returns, as well as supporting beneficial social outcomes. As a result of the initiative, QBE has made impact investments across the globe.

Our Premiums4Good offering continued to grow in 2018, with the number of investments increasing from 26 to 32, representing an investment of $440 million in qualifying securities. Investments range across asset classes and geographies, including green bonds, social bonds, infrastructure and SIBs. We have an ambition to grow our impact investing allocation to $1 billion by 2021.

Evidence also applies to principle(s): 1.1, 1.2, 2.1, 2.2, 3.1, 4.2, 4.3,

Source: QBE Sustainability Report 2018; QBE Annual Report 2018 (p.38); Group Environmental Policy; Group Energy Policy (policies available here: qbe.com/about-qbe/sustainability/climate-change*).*

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

Tokio Marine Group aims to contribute to the realization of the United Nations' Sustainable Development Goals (SDGs) and the goals set by the United Nations Framework Convention on Climate Change. Tokio Marine Group has considered the implementation of SDG-oriented social issue-revolving approaches in our business strategies to further attract and be trusted by customers and society.

Furthermore, for Tokio Marine Group, as an investee, it is crucial to enhance ESG performance and disclose ESG information and receive high ESG ratings to be trusted by all stakeholders. In fiscal year 2017, for five consecutive years, Tokio Marine Group achieved carbon neutral in the Group's overall business activities (domestic and international subsidiaries). Its success in value creation in climate change is also evidenced by its stock becoming a component of the FTSE4Good Series Index Series and the 'DJSI World' and 'DJSI Asia Pacific' in 2018 Dow Jones Sustainability Indices.

Source: tokiomarinehd.com/en/csr/news/2018/

2.2 Measure and disclose the implications of climate-related issues for business performance (including investments) and key stakeholders

Lloyd's / The Market / ArgoGlobal / Disclosure of climate related implications on business performance

There is no external disclosure of climate-related metrics currently.

Evidence also applies to principle(s):

Source: ArgoGlobal

Lloyd's / The Market / Beazley

The board sets an annual risk appetite for natural catastrophe risk, which takes into account a number of factors including the current rating environment, the expected profitability of the group, the amount of capital and the amount of risk from natural disasters. Realistic Disaster Scenarios are also used to calculate losses from natural disasters with the current suite of scenarios including a wide range of perils and regions including windstorms in the Gulf of Mexico, Florida, Europe, Earthquakes in the USA and Japan and Flood in the UK.

The annual business planning process and the Innovation and Product Development team help identify opportunities, new products and potential gaps in the market. Metrics are maintained to measure the number of new products and new ideas developed over the course of the year.

Monitoring of the natural catastrophe risk appetite is performed on a monthly basis by the Exposure Management Group (EMG) and reported to the Underwriting Committee and Executive Committee monthly and to the Board quarterly. Reporting is performed at an overall group level as well as by division and by peril to enable trends and performance to be identified and monitored.

Natural catastrophe models are used to facilitate the estimation of losses from natural disasters, such as hurricanes and earthquakes. The models produce losses by calculating the hazard (by using factors such as wind speeds, the forward moving speed of the hurricane and storm surge), the assets insured (building type and use, the value of the assets), calculating the damage to buildings, contents and business interruption and estimating losses to insurers by applying the financial terms of the insurance contracts.

The group considers the impact of climate change on its asset portfolio by seeking to incorporate an assessment of environmental risks in the investment process. Beazley subscribes to the research services of a specialist company in the field of environmental, social and governance research and has integrated their proprietary ratings into the credit process applied to investments in corporate debt securities. A minimum standard for ESG performance is defined and companies not meeting the required standard will be excluded from the approved list of issuers. The analysis also includes a consideration of the sustainability of each company with regard to the potential decline in demand in specific sectors.

Lloyd's / The Market / MS Amlin / Exposure Management

MS Amlin has a well-established exposure management framework, used to measure and manage catastrophe loss probability, which contributes the single largest item of underwriting risk to the company's capital requirement under the Solvency II regulatory regime. This framework includes a rigorous process of exposure data capture and governance related to insurance policies issued by MS Amlin, including controls for any missing data and data quality. The portfolio of exposed policies is then modelled by country and peril, to estimate loss probabilities from events such as earthquakes, floods, cyclones, and other hazards. The contribution of individual policies in key exposure classes is modelled prior to underwriter acceptance of risk. The whole portfolio is reassessed on a quarterly basis.

The climate-related risks monitored in this way are windstorm, severe convective storm, flood, storm surge, tropical cyclone and related hazards. The modelling assesses historic events, and models probabilistically extremes of events across relevant geographic regions. Climate signals are intrinsic to the parameterisation of the models used.

The models are tested for sensitivity, and stress tested against MS Amlin's historic claims experience. The models are licenced commercial from firms staffed by scientific experts, and represent the sum of hundreds of years of research and development on the climate-related hazards.

The key metric used is the 1 in 200 annual exceedance probability tail value at risk, along with 11 other stochastic and deterministic metrics. These are tracked quarterly by class, business unit, and at group level, and monitored against capital tolerances used to manage the level of risk authorised by the company's board.

This framework is also used to support business planning, an annual exercise to look at income growth for the next calendar year and assess likely loss impact from the growth plan.

Evidence also applies to principle(s): 2.3

Source: MS Amlin

Lloyd's / The Market / QBE / Implications of climate change issues for business performance and key stakeholders

QBE monitors each Division's cost of operations from a carbon emissions standpoint. The cost of carbon offsets purchased to maintain our carbon neutral position is internalised and an internal fee is charged to each Division (contributing to the operational expenditure of each Division and providing an incentive to reduce Divisional carbon emissions). This internal carbon price is intended to have an impact on the behaviours and management of carbon emissions across all QBE divisions. In future, we intend to attempt to quantify the impact this measure has on behaviours and provide trend analysis for divisions' internal carbon pricing results.

In terms of our investment performance, achievements to date include:

- Applying the 2° Investing Initiative (2°ii) Paris Agreement Capital Transition Assessment Tool (PACTA) to confirm our credit portfolio is aligned to the Paris Agreement, both now and in five years' time;
- Analysing our investment portfolio to assess coal-specific transition risks which confirmed that we have 0.5% of our total investment portfolio in the thermal coal industry;
- Strengthened our external fund manager reviews and extended the annual ESG review for all existing managers – 85% of our external managers are signatories to the Principles for Responsible Investment (PRI);
- Joining the Global Real Estate Sustainability Benchmark (GRESB) as an investor member in 2018. Analysis indicated that the weighted average for our property portfolio is GRESB 4 Star, which is in the top quartile; and
- As at 31 December 2018, we had over US$350 million in green finance, including sustainable energy, in both our wider portfolio and through our impact investment program Premiums4Good.

To further our work on our investments, future planned activities include:

- Increasing our environmental impact investments in line with our ambition to grow our overall impact investments to US$1 billion by 2021;
- Target zero direct investment in the thermal coal industry by 1 July 2019 as per our Group Energy Policy (being confirmed at the time of writing);
- Ongoing engagement with our external fund managers and industry on material sustainability issues, including climate-related risks and opportunities;
- Participate in the Principles for Responsible Investment (PRI) 2°C Scenario Analysis Pilot alongside peers to review and compare risk in portfolios; and
- Continue to identify opportunities to support SDG 13 – Climate Action through our thematic investment activities.

35% of our corporate executive team's (members of the GEC) Short-term Incentive Plan outcome is determined with reference to strategic performance objectives aligned to QBE's strategic priorities (75% for the Group Chief Risk Officer).

Operating Sustainably and Managing Risk are strategic priorities for QBE and therefore climate-related issues are directly linked to executive remuneration. The GEC is accountable for implementing our climate change strategy and receives and reviews progress reports on our CCAP. Key aspects of this include:

1. Managing risk: Building a stronger and more resilient QBE by continuing to invest in managing our risks in an increasingly dynamic environment including strengthening our approach to managing ESG risks across our business. This includes implementing our CCAP.
2. Operating Sustainably: Continuing our focus on sustainability and making positive contributions where we operate by working with our customers, partners and communities to address key economic, social and environmental issues. This includes the effective management of climate-related risks and opportunities.

In addition, QBE's Head of Environment's performance scorecard includes KPIs relating to achievement of our climate-related operational performance targets, including to reduce energy use by 15% (from 2018 to 2021), achieve a science-based emission reduction target for 2025 and transition to 100% renewable energy by 2025.

QBE's Head of ESG Risk is responsible for integrating climate-related risks into business processes and delivering and reporting on our CCAP and has associated KPIs included in their scorecard.

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

Source: 'Our approach to climate change' presentation (available here: qbe.com/about-qbe/sustainability/climate-change); QBE Annual Report 2018; Group Energy Policy (available at above web address)

Lloyd's / The Market / Tokio Marine Kiln /Implications

Tokio Marine Group publishes an annual 'Sustainability Report' for all its stakeholders – covering the Company's CSR activities that are working towards a safe, secure and sustainable future. In 2018, its 'Sustainability Report 2018' won the Excellent Report Award in the Environmental Reporting section of the 22nd Environmental Communication Awards.

This award is hosted by the Ministry of Environment and the Global Environmental Forum every year, which recognises outstanding environmental reports and relevant activity reports with the aim of promoting business entities' initiatives for environment management and environmental information disclosure. There is also a dedicated CSR webpage on the Tokio Marine Group website which provides information, news and reports related to the Group's CSR activities to the various stakeholders.

At TMK, all CSR related activities are also shared on the company's intranet to ensure employees are fully engaged. Furthermore, an external environmental consultant is brought in annually to measure the GHG emissions, water usage, energy usage of the company in the various operating locations and to provide recommendation on areas of improvement.

Source: tokiomarinehd.com/en/csr/news/2018/ and TMK intranet

2.3 Incorporate the material outcomes of climate risk scenarios into business (and investment) decision making

Lloyd's / The Market / ArgoGlobal / Incorporation into decision making

Argo Group considers the impact of climate risk in its modelling of risks and exposures for the relevant product lines and insurance coverages that it offers. Argo Group also considers the influence of climate change risk in its relevant underwriting decisions.

The Research and Development team have reviewed the available commercially available models for the US Flood peril for several years and the Perils Committee selected 'KatRisk' as the US Flood model to help inform the Group on the risk to this peril and increase its understanding of the associated exposures. Several features of the Katrisk model resonate well with us including the ability to quantify climate change and its impact to hurricane frequency, wind severity and precipitation and sea level rise.

The KatRisk model has now been adopted and implemented by Argo Group for risk selection, pricing and aggregation purposes. There is a recognition of the impact of increased ambient temperature and ArgoGlobal continues to review its risk appetite for flood risk in certain US zones. Dr. Federico Waisman, SVP-Head of R&D analytics for Argo Group presented a webinar in November 2017, at Lloyd's of London, highlighting different flood models and the challenges associated with model selection and use. Two hundred people attended this event in person and a worldwide audience of circa 500 logins followed this event.

Argo Group undertakes stress and scenario testing against the most material climate risks via its catastrophe and economic capital modeling processes. Material exposure is frequently assessed in respect to both catastrophe model and Non-Modeled Risk (NMR) climate-related perils.

While US hurricane risk drives the portfolio, other atmospheric hazard risk is examined for climate change signals in the historical record. Past US wildfire occurrence rates have been tested for non-stationarity during the proprietary model design process. Trends and forecasted climate change and natural climate variability were included in modelling solar irradiance and photovoltaic cell performance in our proprietary Clean Energy models, for example.

Tangible measures	Evidence
Scenario analysis is completed at Argo Managing Agency for each Syndicate 1200/1910 as part of the Own Risk & Solvency Assessment (ORSA) process as well as part of internal capital model validation. This means that a range of what if scenarios are completed considering deviations from expected outcomes by varying the catastrophe model assumptions and looking at the impact on business plans and capital requirements. The R&D function advises on appropriate scenario deviations based on science and surface temperature assumptions and the scenarios are run through model to undestand financial implications. Scenario analysis has been done against remaining high-carbon related invested assets and the impact of a range of stranded asset scenarios considered using information provided by ClimateWise	– Scenario analysis outcomes – ORSA Annual reports for S1200/S1910 – Model validation reports for S1200/S1910
The scenarios within the ORSA process are used to test the impact on capital and solvency under a range of stress test assumptions and different return periods up to and including reverse stress test (RST) events that test business viability.	– Scenario analysis outcomes ORSA Annual reports for S1200/S1910 – Model validation reports for S1200/S1910
The scenarios are considered by AMA management and board as part of the overall process of approving and revising business plans and assigning capital to the Syndicates to support the business plans.	– Board and management review of ORSA and model validation reports and sign-off of business plans.

Evidence also applies to principle(s):

Source: ArgoGlobal

Lloyd's / The Market / Beazley

Catastrophe model vendors have incorporated different versions of their models to reflect natural climate variabilities, such as near term hurricane frequency rates. These different views of risk are analysed to understand the impact on our underwriting portfolio and risk appetite.

Stress tests are performed to understand the impact of an increase in the number and the financial impact of natural disasters on our overall portfolio, the performance and adequacy of Reinsurance purchased and solvency of the business. In 2017 Beazley, along with other insurers and regulators, participated in a "dry run" to test the London Market's ability to withstand major catastrophes. In addition Beazley participated in the 2017 General Insurance Stress Tests (GIST) issued by the PRA, and we will be providing a submission later in the year for their GIST 2019, including their climate change scenarios.

Output from the scenario testing is used to inform the amount of natural catastrophe risk the group takes on, the perils and regions of the world business is written.

Source: Beazley

Lloyd's / The Market / Chubb / Coal Underwriting and Investment Policy

Chubb announced in July 2019 that it is has adopted a new policy concerning coal-related underwriting and investment. With the new policy, the company will no longer underwrite the construction and operation of new coal-fired plants or new risks for companies that generate more than 30% of their revenues from coal mining or energy production from coal. Insurance coverage for existing coal-plant risks that exceed this threshold will be phased out by 2022, and for utilities beginning in 2022. In addition, Chubb will not make new debt or equity investments in companies that generate more than 30% of revenues from thermal coal mining or energy production from coal.

“Chubb recognizes the reality of climate change and the substantial impact of human activity on our planet,” said Evan G. Greenberg, Chairman and CEO of Chubb. “Making the transition to a low-carbon economy involves planning and action by policymakers, investors, businesses and citizens alike. The policy we are implementing today reflects Chubb's commitment to do our part as a steward of the Earth.”

For more information, see the full press release here.

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

Source: Chubb

Lloyd's / The Market / MS Amlin / Climate change scenarios

The potential financial impacts of climate change are well-documented and the recent draft Supervisory Statement published by the PRA are stepping stones for MS Amlin to seek out the importance of using scenario analysis to assess climate-related issues and their impact on the business, as well as a tool for implementing a climate change awareness thinking across the industry, driven by both regulation and stakeholders' increasing pressures.

MS Amlin is currently developing a series of climate change scenarios in-line with the 2019 PRA General Insurance Stress Tests. These scenarios will be used to quantify the potential impacts of climate change on our P&C portfolios for US hurricane and UK flood, as well as the impacts on our investment portfolio. The scenarios will represent conditions in 2050 and 2100.

This analysis will help MS Amlin better understand the physical and transition risks and will help us think through plausible futures and how it could impact our business strategy in the medium to long term.

Evidence also applies to principle(s): 2.2

Source: MS Amlin

Lloyd's / The Market / QBE / Climate risk scenario analysis

QBE's Scenario Testing Working Group supports management and the Board in assessing the impact of unexpected, low-frequency, high-severity events, which supports QBE Group's ERM Framework. The output of the scenario analysis process is used as an input to QBE's Stress and Scenario Testing Framework. QBE assesses both Division-specific and enterprise-wide scenarios that impact at a Group-level or impact more than one Division.

This function is supported by sophisticated computer simulations of catastrophes to estimate financial and economic losses, manage catastrophe exposure and assist in making decisions regarding catastrophe risk management and coverage. QBE employs a global team of catastrophe risk analysts that form the Catastrophe Modelling Team (CMT). This team helps to measure the climate-related physical risks to the property portfolio informing policy pricing and supports QBE manage the underlying risks to our business e.g. property becoming uninsurable and/or increased claims.

The QBE Group Scenario Coverage Map includes a climate change scenario which aims to consider the potential extreme impacts related to climate change that may occur over the next 12 months period, impacting our customers, products and/or markets. This scenario informed our decision to reduce our underwriting exposure to thermal coal projects, from 1 July 2019. The medium to longer term impact of climate change is being assessed within the QBE CCAP.

In managing transition risks from climate change in our investment portfolio, we have applied the 2° Investing Initiative (2°ii) Paris Agreement Capital Transition Assessment Tool (PACTA) to confirm our credit portfolio is aligned to the Paris Agreement, both now and in five years' time.

We further performed an internal analysis to assess coal-specific transition risks in the total investment portfolio, finding that we had 0.5% of our total investment portfolio in the thermal coal industry, affirming our investment philosophy and our focus on contributing to a low-carbon economy. This model assessed QBE's portfolio using the SDS scenario (sustainable development scenario, a 2 degrees scenario) which provides a forward-looking projection with a time horizon of 5 years (up to 2023). This analysis informed our target to have zero direct investment in the thermal coal industry by 1 July 2019.

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

Source: 'Our approach to climate change' presentation (available here: qbe.com/about-qbe/sustainability/climate-change*).*

Lloyd's / The Market / TMK

In November 2018, Tokio Marine group announced that it will participate in the newly-established 'TCFD Insurer Pilot Group' by the United Nations Environment Programme Finance Initiative (UNEP FI) to enter into discussions so as to develop the insurance industry's climate-related disclosure methodologies and analytical tools. Tokio Marine Group has been striving to create a sustainable society as a signatory to UNEP FI and its Principles for Sustainable Insurance (PSA). Through these efforts, the Group aims to resolve climate change and disaster issues and provide safety and security in collaboration with UNEP FI and insurers around the world.

Evidence also applies to principle(s):

Source: tokiomarinehd.com/en/csr/news/2018/

3. Lead in the identification, understanding and management of climate risk

3.1 Ensure processes for identifying, assessing and managing climate-related risks and opportunities are integrated within the organisation (including investments).

Lloyd's / The Corporation of Lloyd's

At Lloyd's, the risk profile originates from both syndicates and at central level.

Syndicates are the source of the majority of risks. They source all the insurance business; manage the bulk of the asset portfolios; hold the majority of the counterparty exposures; and conduct most of the day-to-day operational activity. The syndicate risks include: insurance risk (underwriting, reserving and catastrophe risk); market risk on syndicate assets (including credit risk on Premiums Trust Funds (PTF)); reinsurance and other credit risk; and syndicate operational risk.

At the central level, additional risks arise from central operational risk, pension fund risk; market risk on central assets; and the risk of member default.

Risk Management processes

Each year the Corporation identifies the key risks which could have a significant impact on Lloyd's business, and the mitigating actions required to reduce or eliminate the risk. See principle 1.1 and 1.2 for further information on Corporation risk management activities.

Investment

The Corporation of Lloyd's believes that environmental, social and corporate governance (ESG) factors can have a material impact on long-term investment returns. We are therefore actively engaging with our existing external investment managers to understand how they assess these risk factors and to encourage better integration of these factors within their investment process where there is room for improvement.

We consider various metrics relating to Responsible Investment as part of our framework for assessing the overall risk of existing managers on an ongoing basis. Likewise, when selecting a new investment manager, we consider any potential manager's approach to Responsible Investment and this feeds into our final selection decision (principle 2.1).

We track overall Central Fund exposure to sectors that we perceive as high risk, for example those most at risk from assets becoming stranded. We monitor individual holdings within high risk sectors and ensure we understand managers' rationales for investing in these areas.

Risk integration for in-house investments

The Corporation of Lloyd's Treasury and Investment Management (LTIM) has been working to better integrate Environmental, Social and Governance (ESG) risk factors into the investment process for the fixed interest assets managed in-house. ESG risk integration continues to be implemented for the fixed interest assets managed in-house by LTIM (principle 2.2).

As well as reviewing the ESG scores and controversies of new potential holdings, LTIM also monitors the stability of ESG scores on existing holdings and the overall ESG score of portfolios versus their respective benchmarks.

Prior to any purchase of a corporate bond, the ESG score of the issuer and other qualitative ESG information is considered together with the CDS spread and the spread of the bond itself, and also relative to other issuers in the peer group and this informs the decision over whether to buy at the prevailing price (principle 2.2).

Green Bonds

LTIM directly manages the Central Fund's investment grade fixed income portfolio and took the initiative to invest in Green Bonds for the Central Fund at the end of 2015. LTIM has since added Social Bonds to the portfolio and recorded a total exposure to Green and Social Impact Bonds of approximately £90m (principle 2.1).

Exclusion policy

Coal combustion is believed to be the largest single cause of global greenhouse gas emissions[e]. We implemented a coal exclusion policy in April 2018 as part of its Responsible Investment Strategy for the Central Fund. Lloyd's investment philosophy focuses on generating long-term, sustainable capital growth for Central Fund assets. Our approach to responsible investment is detailed in our strategy for the Lloyd's Central Fund and is built upon three core pillars; Protecting, Providing and Promoting (principle 2.1 and 2.2).

The policy applies to Central Fund assets held in segregated portfolios and commits to excluding any companies that meet at least one of the following criteria:

- Generate more than 30% of their revenue from producing coal.
- Produce more than 20 million tons of coal per year.
- Generate more than 30% of their electricity from burning coal.
- Operate at least 10GW of coal-fired power stations.

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

Source: The Corporation of Lloyd's

Lloyd's / The Market / ArgoGlobal / Processes for identifying, assessing and managing climate-related risks

The Argo Group risk management function is consulted if it is expected that an environmental issue may have a potential impact upon Argo's 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 twice per annum and principal findings shared with the ERM Steering Committee.

If a potential climate change (environmental) issue is identified by Argo Group, as an adjunct to the Argo Group risk management function, a cross-functional working group of Argo Group subject matter experts is convened by the risk management function for the purpose of discussing, assessing and determining if the potential climate change (environmental) risk could present a material threat to Argo Group and what actions may be taken by Argo Group in response to such a threat.

Argo Group's Exposure Management Committee has also been tasked with the responsibility for the consideration of the influence of any climate change-related modeling on its property insurance portfolio on an ongoing basis. The Perils Committee, chaired by the head of the Research & Development team, is charged with periodically reviewing the models used and making recommendations for changes, adjustments and parameterisation to ensure these represent the most up to date view of risk from Argo Group's perspective.

The evolution of insurance demand in response to climate change remains a major area of debate across the industry, including the Lloyd's market. Argo Group continues to consider opportunities for introducing new climate risk products as they are developed, in line with its strategic plans and appetite. As 'ClimateWise' members, Argo Global is supportive of Lloyd's initiatives such as *Target Two Degrees*, which was established in order to raise awareness of climate change and to support resilience building in response to climate risk.

Climate risk is implicitly included in Argo Group's catastrophe reinsurance considerations using catastrophe modeling as outlined above. Allowance for uncertainty in climate change risk is provided for using Argo Group's Stress & Scenario Testing Framework (SSTF) and economic capital modeling processes. These stress tests together with our approach to non-modeled 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 change -related risks.

The Argo Group emerging risk monitoring process includes scanning available resources for information regarding climate change related current events, litigation, regulation, legislation, the political environment and industry groups' actions that may have an impact on the Argo Group Climate Change Policy and/or strategy. 'Stranded assets' have been specifically identified as a potential material risk factor. Utilizing the Lloyd's of London report entitled "Stranded Assets: the transition to a low carbon economy - Overview for the insurance industry", Argo Group has maintained stress test scenarios that consider 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 wider Stress & Scenario Testing Framework (SSTF).

Argo Group has identified the current or anticipated implications for Argo Group's business operations, strategies

[e] Ecofys press release

and/or insurance products that may result from climate change risk. The potential impact of climate change risks is assessed by Argo Group based on product line and geography.

A strategic risk assessment is applied 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 of each issue to become significant, as well as mitigation or realization plans and their status. The assessment is reviewed twice per annum, presented to the SWG and its principal findings are shared with the ERM Steering Committee.

As Argo Group provides insurance and reinsurance coverage in geographically dispersed territories throughout the world, particular underwriting attention is paid to locations that could be more severely impacted by climate change. For example, climate change may be one of the primary causes of increases in the frequency and severity of extreme weather events, such as droughts in the southwest region of the US and hurricanes in Central America. These types of anticipated outcomes could result in a shift of Argo Group's underwriting strategy as regards its insurance products and geographic representation.

The Research and Development team built a North American stochastic wildfire model which is applicable to its US and Canada property re-insurance business. This model was constructed as a reaction to the observed increased frequency of wildfire events that have been experienced over the last few years, with a view to assess the materiality of and price for the peril. This model which was first released in December 2014 has been calibrated with observed experiences and has considered possible climate change related variables within its calibration.

The model has also been updated on an annual basis with review and sign off from the Perils Committee and in particular following the active loss years of 2016 (Fort McMurray, Canada), 2017 (Tubbs, Thomas, Nunn, Atlas fires) and 2018 (Carr, Camp and Woosley fires). The ARPS model is in use by all divisions within he Argo Group and has been used to price property insurance, reinsurance as well as casualty exposures of utility companies.

Tangible measures	Evidence
The R&D team is charged with analysing and evaluating climate risk related trends and identifying material issues. This is managed and reported though the Perils Committee that then determined what needs to be done to manage the changing exposures.	– Perils Committee charter, papers and minutes ARPS system
The Perils Committee oversees the managing and modelling of catastrophe risk in terms of developments of new and modified models. The key tool is the ARPS platform which incorporates proprietary catastrophe models such as RMS (currently v 18) and then overlays Argo's view of risk, in terms of model setting and adjustments to frequency and severity. In addition, ARPS incorporates bespoke models such as in-house developed North American wildfire models. Other stand-alone models are evaluated and purchased as needed such as US Flood Models (KatRisk)	– Perils Committee charter, papers and minutes ARPS system
The approved catastrophe risk models are fundamental to the implementation of the risk management framework. ARPS is used to report on the net aggregate risk exposures against tolerance to the Group Board Risk & Capital Committee, the Group Exposure Management Committee and also (via the internal capital model) to the AMA Risk & Capital Committee. Risk tolerance metrics are set and monitored against on a quarterly basis based on acceptable levels of exposure to company capital.	– Exposure Management Committee papers Risk & Capital Committee papers ORSA (Group and AMA, both annual and quarterly)

Source: ArgoGlobal

Lloyd's / The Market / Beazley

During 2018 Beazley's risk management department completed a risk profile covering the potential risks posed to our group by climate change (see 2.1 above).

We have also conducted an exercise in mapping climate change-related risks across all business lines, to ascertain areas of greatest exposure and guide further analysis.

Source: Beazley

Lloyd's / The 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 society depends on a healthy environment and that a proper ethic strives for a sustainable balance between development and preservation.

As a global insurance company, assessing risk is a core competency for Chubb. Standard & Poor's rating of Chubb's enterprise risk management process as "Strong" in its April 2018 ERM rating report places the company among the top 20% of North American and Bermuda insurers.

Our approach to risk management is to identify all known and emerging risks that could have an impact on overall capital levels and financial results. Regarding the potential effects of catastrophe losses, we closely monitor our 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. In addition, Chubb continually assesses the potential business impact of the changing climate and, if appropriate, develops new procedures, products and/or services. New offerings could be in the form of products, entry into industry segments, risk engineering services or claims services.

Modeling

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.

Modeling is a valuable tool in identifying possible market opportunities. At Chubb, risk management modeling and underwriting practices have been adapted to the developing risk exposures attributed to climate change. Since the earth's climate appears to be changing in ways inconsistent with the historical record upon which catastrophe models draw data, Chubb has adopted a shorter-term view of event frequency that is higher than the long-term historical frequency.

Chubb invests continually to upgrade and refine its risk management tools for catastrophes such as floods and hurricanes. Through the use of catastrophe models, Chubb manages severe weather risk to indirect client exposures throughout the world. 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 windstorms — is deemed to be high, such as the coastal United States, Southeast Asia and U.K./Europe.

To aid in prioritizing management focus on extreme weather events, each peril region is classified as either Tier 1, 2 or 3 according to the exposures and risk combination present. Tier 1 regions are the highest priority areas for the company as they present the greatest risk profile and are the most carefully managed. Tier 2 and 3 regions are also closely managed at the regional and business unit level.

In addition to modeled peril regions, we focus on non-modeled perils, such as flood and wildfire, which present a risk in many of the developing areas of the Chubb insurance portfolio. Several major natural catastrophes in recent years, such as Hurricane Harvey in Texas, the Kumamoto earthquake in Japan, flooding in Europe and wildfires in California, were non-modeled events or involved difficult-to-model coverages (e.g., business interruption). These types of losses have 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.

In his 2018 letter to shareholders, Evan Greenberg, Chubb Chairman and CEO, wrote, "climate change is a reality and its effects can be seen by an increased frequency and severity of natural catastrophers. Climate change is contributing to high sea surface temperatures, rising sea levels and an increasing trend in extreme weather events, including floods, droughts, winter storms, heat waves, wildfires and hurricane intensity." In 2017, natural catastrophe losses exceeded $135 billion and were again elevated in 2018. According to a Swiss Re study, global insured losses for catastrophes in 2018 were $85 billion, the fourth highest on record and higher than the annual average of the previous 10 years. Examples of devastating natural catastrophe events in 2018 include hurricanes Michael and Florence in the U.S.; typhoons Jebi and Trami in Japan; typhoon Mangkhut that struck Guam, the Philippines and South China; heat waves, droughts and wildfires in Europe and California; floods in Japan and India; earthquakes in Japan, Indonesia and Papua New Guinea; and volcano eruptions in Hawaii. A wildfire to the northeast of San Francisco, known as the Camp Fire, which burned in 2018, is now the deadliest fire in over a century for the U.S. and, in terms of property loss, the most destructive on record for California.

The lessons learned from such events — new assessments of building performance and improved understanding of how a convergence of conditions can increase losses in a severe catastrophe — enable us to incorporate the latest knowledge in our modeled loss estimates.

Chubb accounts for the potential impact of catastrophe and climate risks on the company's own facilities and operations. Direct risk to Chubb's business operations exists if such weather events occur where Chubb has offices. Severe weather events have tested Chubb's business continuity program and operations have functioned effectively. Chubb's risk analysis ranges from the known (based on definitive historical loss experience) to the hypothetical (based on a probable maximum loss (PML) calculation).

Pricing

Chubb incorporates risk mitigation services through its risk management and site surveys, specification of terms and conditions in policies and the development of sound underwriting guidelines into the underwriting of catastrophe-exposed products (e.g., property, energy, marine or crop coverage). Chubb's modeling 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 behavior.

The company is also actively engaged with regulators to ensure that pricing is actuarially sound and can be adapted to meet new and 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 and businesses that are encouraged to increase exposures.

Reinsurance

We 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. We are committed to helping the industry improve standards that will ultimately help increase risk transfer capacity and provide additional incentive for risk mitigation behavior 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, 3.2, 5.1, 5.2,

Source: Chubb

Lloyd's / The Market / MS Amlin / ORSA process

Throughout the ORSA process, MS Amlin has identified climate change as an emerging risk, amongst others, and the implications of climate change on our business remain a concern, especially considering the non-modelled elements of the recent catastrophe events in 2017/18 which are an indication of a changing climate and how it could affect our business.

Regular post-event analysis models are used to highlight concerns in catastrophe model performance against these events or to investigate the availability of models which are not licenced by MS Amlin. We also work closely with our reinsurance brokers to understand the residual risk from perils which we don't licence and enable us to adjust our Internal Model if we feel the level of risk is unacceptable.

Regular discussions between the first line functions and Risk facilitate identifying and considering potential emerging threats. All emerging risks of significance are escalated to the appropriate Committee and where necessary the board.

Evidence also applies to principle(s): 2.2

Source: MS Amlin

Lloyd's / The Market / QBE / Identifying, assessing and managing climate related risks

The process for identifying and assessing Climate-related risks is defined within the Group-wide ESG Risk Standard (climate change as a current risk) and through the Emerging Risk Standard (acknowledging that the current climate-related risks may crystallise outside of the current business planning horizons). Both Standards fall under the material risk class, Strategic Risk, one of eight Material Risk Classes in the Risk Management Strategy (RMS).

Both set out the risk management processes for identifying and assessing ESG and emerging risks and the role of the associated Committees (i.e. the ESG Business Policy Committee or the Group Emerging Risk Forum) to activate a climate-related risk, depending on the time horizon e.g. ESG BPC looks up to 12 months, whilst Emerging Risks are 12 months or more. Both Standards define the risk management process in 5 steps: 1. Horizon scanning & risk identification, 2. risk analysis, 3. risk evaluation, 4. risk treatment, and 5. risk monitoring and review of implementation.

Climate-related risks have been identified as risks arising from Climate-related Physical Risks, Transition Risks or Liability Risks. All three risks are currently at treatment stage (step 4). The treatment plans include the creation of three working groups (one for each risk type) which have been set up to further manage and understand how these climate-related risks could impact QBE's strategic priorities and business objectives and also within the three main QBE geographical divisions e.g. International (Europe and Asia), North America and Australia Pacific. The Working Groups have been tasked with determining the significance of the climate-related risk to QBE e.g. priority underwriting portfolios as related to the climate-related risk type.

The ESG Risk function is responsible for ensuring these business practices and processes are integrated into the organisations overall risk management framework. As discussed in section 1.1, the Group Board ensures climate-related risks are assessed and managed through the integrated risk management framework.

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

Source: QBE Sustainability Report 2018; QBE Annual Report 2018 (p.38).

Lloyd's / The 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 has launched the research on 'Transition Risk Framework". 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.

Source: Tokio Marine Kiln

3.2 Support and undertake research and development to inform current business strategies (including investments) on adapting to and mitigating climate-related issues.

Lloyd's / The Corporation of Lloyd's

The Corporation of Lloyd's believes 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.

The Corporation aims to drive innovation in the market by focusing on thought-leadership, best practice and efficient use of data to support risk understanding. Additional data collection, tools and research are important to identify future trends and anticipate future risks (principle 6.2). The Corporation supports this by making our thought leadership publicly available (principle 6.1). We work with research partners to reduce the uncertainty surrounding these risks, and we collaborate with practitioners in the Lloyd's market and in the wider insurance market to understand the challenges and opportunities for insurance.

Innovation Lab

The Lloyd's Lab initiative strengthens our position as the global centre for insurance innovation. We received over 220 applications from 36 countries and in October 2018 welcomed 10 teams who successfully pitched ideas that could help transform Lloyd's into an increasingly technology-driven market.

The ideas our finalists worked on include: livestreaming drones for fast risk and disaster assessment; live cargo tracking using the Internet of Things; on-demand insurance for the gig economy; an efficient claims support platform based on blockchain; an AI-powered insurance platform for small businesses; a digital solution for individuals to design their own insurance; and a cloud-based platform to arrange insurance cover for multinational corporations across borders.

The Lloyd's Lab is currently running its second cohort, focusing on ideas across four areas of focus, chosen after consultation with the market:

- New insights to power data-driven underwriting.
- Enhancing customer experience.
- Enabling back-office efficiency.
- Creating next-generation insurance products or services, which included a call for solutions that enhance our understanding of how megatrends might impact and evolve traditional policies – from the effect of population growth on food security and agriculture to the implications of geopolitics on terrorism.

Charity partnerships

The Corporation has made a strategic decision to fund charity partners through our community involvement. Insurance plays a valuable role in creating a more confident and secure world and the Corporation believe that our charitable funding should extend this role in relevant ways.

The Responsible Business team support three independent charities and a community volunteer programme supported by the Lloyd's market in London (principle 5.2). All three charities have their own trustees made up from professionals across the Lloyd's market and academia, however the day to day running is managed by the Responsible Business team at the Corporation. These include:

Lloyd's Charities Trust

Lloyd's Charities Trust (LCT) builds resilient communities by supporting causes relevant to the market and our people. For more than 60 years, Lloyd's Charities Trust has helped to build resilient and sustainable communities where it matters most. The Lloyd's market is recognised for supporting global economic growth, and helping businesses and communities recover after disasters (*see Lloyd's Strategy*).

This is supported by Lloyd's Charities Trust, which has two clear objectives:

- As the Lloyd's market responds to emerging risks and the challenges that these pose to communities around the world, it becomes increasingly important that Lloyd's Charities Trust supports projects that aim to reduce the risk of devastation to the people who need it most. Through our charity partnerships, we work with organisations who help the most vulnerable groups with disaster risk reduction globally (principle 5.2).
- Lloyd's Charities Trust also supports causes close to the hearts of our people in the Lloyd's market in London. Recognising the voluntary and fundraising efforts of individuals from across the market through our Lloyd's Market Charity Awards, we reward their chosen charities with unrestricted grants to help maintain stability and resilience in a changing world.

The day to day running of Lloyd's Charities Trust is undertaken by the Responsible Business team at the Corporation of Lloyd's, and is overseen by trustees from across the Lloyd's market. Partner charities are required to establish work plans with targets and timelines, and present these to the trustees (principle 1.2).

From October 2016 - October 2019, three charities were funded including Build Change and RedR:

– Build Change is an international NGO working to reduce loss from disasters in emerging nations. Our donations of £100,000 a year go towards an ambitious grassroots pilot which aims to retrofit vulnerable homes in slum areas of Medellín, Colombia and Manila, Philippines.

  Piloting the scheme has so far subsidised 50 families in Medellín and 60 families in Manila to retrofit their homes, provided technical resources and expertise to local housing agencies, supplied 40 new jobs and upskilled 40 local workers. Through demonstrating the benefits of safer housing, Build Change has gained support from local government, private sector and home owners for this initiative. This has put the concept of strengthening existing housing on the global agenda, engaging organisations like the World Bank. The next steps for the remaining year will focus on scaling up the pilot and developing sustainable financing.

– RedR - international disaster relief charity – received donations of £150,000 a year to deliver the 'Ready to Respond programme', with the aim of increasing the ability of individuals and organisations involved in humanitarian action to prepare for and respond to emergencies, especially in urban centres. Our funds have upskilled and supported 3,727 humanitarians and aid workers, better equipping them to respond to disasters. As a result, RedR UK is recognised as a centre of expertise in this area, bringing the private and humanitarian sectors together.

Applications are open for new funding and priority will be given to funding in a number of defined areas, including resilience, meeting the Sustainable Development Goals, and climate-related risks (principle 3.2 and 5.2).

Lloyd's Tercentenary Research Foundation

LTRF was established to mark the tercentenary of Lloyd's in 1988 with the objective of funding research in the fields of medicine, science, safety, the environment, engineering and business. Through its partnerships with specifically commissioned academic institutions and research organisations, Lloyd's Tercentenary Research Foundation funds academic research by supporting new research on risk related issues and offering scholarships to study in the US.

Over the reporting year, funding around climate related risks included:

– A two-year research project led by the Smithsonian Tropical Research Institute (STRI). The STRI and partners developed scenarios for the future of the Panama Canal Watershed, leveraging decades of hydrological and forestry research and data sets. The aim of the project was to advance understanding of large-scale and long-term implications of land-use choices throughout the tropics and will create a science-based tool to better-inform choices that can minimize negative environmental and economic impacts

– A Fulbright scholarship for David Franklin, looking at study how emerging technology can both improve our understanding of global risks, and support policymaking in developing markets

Applications for the next series of LTRF projects opened on 24 June 2019, to further our understanding of the protection/resilience gap. This is an issue that has real synergy with risk-related academic research that considers current and future financial risks arising from a variety of trends; from stranded assets to the challenges facing urban populations.

Topics can cover different geographies and risk classes, from established risks, to newly emerging and not yet established insurance markets. This change is part of a new strategy for the LTRF that was agreed by the trustees, and demonstrates the serious recognition that Lloyd's has of these risks (principle 3.2 and 5.2).

Evidence also applies to principle(s): 1.2, 3.2, 5.1, 5.2, 6.1, 6.2

Source: The Corporation of Lloyd's

Lloyd's / The Market / ArgoGlobal / Research and Development

Argo Group maintains a Clean Energy Risk Solutions (CERS) team dedicated to developing and distributing insurance and risk financing solutions related to clean technologies that are intended to reduce the overall carbon footprint. CERS provides long-term performance and technology insurance products in support of solar power, thermal bioenergy (gasification) and biomass (digester), fuel cell, battery storage and 'smart' energy efficiency applications, among others. For solar, long-term certainty of performance is insured for modules on a stand-alone basis, as well as the entire solar energy delivery system. This enables businesses to position themselves for organizational success by promoting sales, attracting finance lenders/better terms and validating new technologies to the market.

Argo Group considers the impact of climate risk in its modelling of risks and exposures for the relevant product lines and insurance coverages that it offers. Argo Group also considers the influence of climate change risk in its relevant underwriting decisions.

The Research and Development team have reviewed the available commercially available models for the US Flood peril for several years and the Perils Committee selected 'KatRisk' as the US Flood model to help inform the Group on the risk to this peril and increase its understanding of the associated exposures. Several features of the Katrisk model resonate well with us including the ability to quantify climate change and its impact to hurricane frequency, wind severity and precipitation and sea level rise.

The KatRisk model has now been adopted and implemented by Argo Group for risk selection, pricing and aggregation purposes. There is a recognition of the impact of increased ambient temperature and ArgoGlobal continues to review its risk appetite for flood risk in certain US zones. Dr. Federico Waisman, SVP-Head of R&D analytics for Argo Group presented a webinar in November 2017, at Lloyd's of London, highlighting different flood models and the challenges associated with model selection and use. Two hundred people attended this event in person and a worldwide audience of circa 500 logins followed this event.

Tangible measures	Evidence
Syndicate 1910 has developed financial guarantee solutions for clean energy related product offering (Syndicate 1910) with specific financial performance guarantee products which underwrite the performance of solar panel arrays, biomass plants and fuel cells, with policies written for typically 10-15-year period so covering long-term performance.	– External website and product descriptions
The R&D team is charged with analysing and evaluating climate risk related trends and identifying material issues. This is managed and reported though the Perils Committee that then determined what needs to be done to manage the changing exposures.	– Perils Committee charter, papers and minutes ARPS system
Syndicate 1910 has clean energy solutions which are launched and impact Syndicate 1910 business plan by providing an income stream for long-term guarantee products. This is a significant commitment to this sector given the length of the policies and this has been subject to risk management review and scenario analysis. The analysis itself secured the 2018 CIR risk management award for programme of the year. The products enable project finance to be secured from major banks by improving the credit profile of the projects.	– External website and product descriptions Clean energy scenario analysis and risk tolerance setting CIR award entry

Source: ArgoGlobal

Lloyd's / The Market / Beazley

Beazley are working together with partners to understand the impact of climate on insureds and to promote faster transition to lower carbon technologies.

1. With Lloyd's and the US Climate Mayors group and City Resilience Officers (provided by 100 Resilient Cities) to understand the challenges facing cities, municipalities and counties and uncover where insurance can enable funding (eg tax credit insurance for wind farms), enhance a business case for investment (eg recognising the improved risk profile from costly mitigation measures in the premium or coverage or structure of placements), engage with opposition groups (eg insurance to offset damage caused by a new policy or development), or build population resilience post event (eg parametric business interruption cover).
2. With our broker partners to unlock mitigation funding that could minimise the impact of an impending event (eg crop failure or wind storm)
3. With Universities (Houston and Swansea) to understand the hurdles that prevent prototype technology becoming industrialised.

Put simply managing risk has 3 stages - identification, quantification, and mitigation. The most obvious climate related issues are weather but models do not yet exist that combine the effects of increased sea water temperature (leading to increased rainfall), rising sea levels and more volatile storms. We are investigating providers of the separate models and working with insurtech partners as well as established modellers to build a picture of the short term impacts of changed weather patterns on North American assets. The first goal is to use this data to inform our property insurance and our insureds about potential future scenarios. The second goal is to use this data to show which mitigation measures will have the greatest positive impact on the assets at risk.

Potential new products range from climate related liability, which is the subject of a planned workshop, through prototypical technology failure coverage to adapting our healthcare premium return scheme (QuIRP) to resilience improvements made to property assets in natural catastrophe areas. All are in discussion and research phase. These products will enhance the current offerings and give us a differentiator in commoditised lines but there is work to be done to manage the risks that come with these opportunities.

Source: Beazley

Lloyd's/ The 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.

Source: Chubb

Lloyd's / The Market / MS Amlin / Proprietary view of risk

MS Amlin frequently reviews its view of risk for key region perils considering the latest scientific research. For atmospheric perils such as windstorms and floods this includes the consideration of the impacts of climate change as well as natural variability on our view of risk. For example, in the case of US hurricane, we use catastrophe models calibrated using a near-term view of risk representing present-day conditions (opposed to a long-term view representing conditions over the last 100 years).

In 2018, MS Amlin Modelling Research developed its own proprietary view of earthquake risk in Chile based on the latest findings on earthquake activity in central Chile. The 2010 Maule earthquake near Santiago caused large economic losses in the region of USD $15-30bn, and prompted the major vendor earthquake catastrophe models to update their time-dependent view of earthquake risk in the region. To align our view of risk with the scientific evidence and to capture the impact of the entire Maule earthquake rupture area, MS Amlin has reduced the event rates in the affected seismic source zones of its primary catastrophe model.

This change has now been successfully deployed in the proprietary modelling and portfolio management software environment developed in house.

In 2019 we are undertaking a review of our European Windstorm view of risk, which will include an investigation into the potential impact of climate change on the frequency and/or severity of extreme wind events.

MS Amlin is also collaborating with RMS (a catastrophe model vendor) to develop a bespoke view of catastrophe risk for the RMS North America Severe Convective Storm (SCS) model. Internal workshops have been run to identify opportunities to focus the project on further developing MS Amlin's view of SCS risk, and to ensure a consistent solution that is relevant across all MS Amlin's lines of business.

Research is also underway into flood in Belgium and Germany to assess the impact of river defences in mitigating the flood risk.

MS Amlin has also reviewed extensively the various models available commercially for California, to manage exposure impacted by the Wildfire hazard. This hazard has high climate-related volatility, and requires careful monitoring of exposure accumulations as well as stress testing for different event scenarios.

Evidence also applies to principle(s): 3.1

Source: MS Amlin

Lloyd's / The Market / NUAL

Future proofing engineering design

Navigators' Risk Engineers have in this period continued to maintain a dialogue with climate change modelling specialists and Energy clients alike to better understand the potential impact on an offshore structure or onshore 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, whilst at the same time understanding increased and changing exposure to existing assets and, affording clients the insurance coverage they require.

Encouragement is given to clients in respect to 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 approaches 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 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.

We have in this reporting period continued to provide insurance coverage and work with clients with ageing offshore assets, some of which have become victim to creeping change both in design standards and in some cases foundation subsidence, and also revised and often more severe metocean data. All of these have increased risk to offshore structures. Such continued coverage is vital to clients as they work through expensive and lengthy projects to retrofit improvements to such assets.

Research and data analysis – CAT exposure and modelling

Navigators continue to use aggregation platform Exact Advantage version 3.7. This software allows Navigators to capture static exposure for all lines of business contributing to our CAT exposure.

Additional capabilities include additional earthquake regions in Europe. In the previous reporting period, the CAT Management department introduced the ability to model inland US flood. The team is currently working with the International CRO to document the validation of the software, to upgrade to Touchstone v.6.

Navigators held two NatCat Summits in the previous reporting period, one in London and the other in Stamford, CT. These summits are regularly held to inform underwriters and other internal stakeholders what is new in the modelling and aggregation world. Date for next summit is pending.

Lloyd's Project – Low Carbon Transitions and Insurance

Navigators have in this reporting period been actively contributing to the Lloyd's Project – Low Carbon Transitions and Insurance. Following an initial interview with the Lloyds Project Sponsor, we have participated in two follow-up workshops in which the progress of vivideconomics was reviewed.

Throughout this process Navigators have tried to offer a 'voice' that ensures the a scientific approach is taken to such a study, and that conclusions bear up to scientific scrutiny, and that the insurance market response to and support for climate change initiatives within the Energy & Power sectors specifically is supported by a 'life-cycle' approach to emissions.

Evidence also applies to principle(s): 1, 2

Source: NUAL

Lloyd's / The Market / QBE / Climate risk related research & development

In August 2018 QBE group announced its partnership with Jupiter, an emerging leader in predicting and managing climate risk. Jupiter's "ClimateScore" is a comprehensive, cloud-based platform that incorporates environmental factors in an integrated, dynamic model to deliver risk-focused solutions. The platform comprises data that analyses and predicts climate risk from one hour to 50 years in the future. Jupiter currently predicts the probability of extreme weather in select North American cities and the company is steadily expanding to service global markets.

QBE also invested in Jupiter via its venture capital arm, QBE Ventures, which partners with the world's best and brightest start-ups to deliver new technologies and competencies. QBE's partnership with Jupiter is in line with our commitment to managing climate-related risks and opportunities.

Another example of supporting research and innovation of climate-related issues is QBE's agreement with the Climate Corporation. On 5 March 2019, a platform agreement was announced between Climate Corporation's industry-leading Climate FieldView™ digital agriculture platform and NAU Country Insurance Company, a QBE Insurance Company. The new agreement between Climate and NAU Country enhances the digital reporting capabilities for farmers.

First launched in the United States in 2015, the Climate FieldView digital agriculture platform is on more than 60 million paid acres across the United States, Canada, Brazil and Europe. It has quickly become the most broadly connected platform in the industry and continues to expand into new global regions. As innovation in the digital agriculture space continues to accelerate rapidly around the globe, Climate Corporation continues to explore opportunities to provide farmers with the insights they need to improve their productivity.

Specific products and services developed by QBE to support innovation for climate mitigation and adaption are discussed in section 6.2 of this report.

Evidence also applies to principle(s): 1.2, 3.2, 5.1, 5.2, 6.1, 6.2

Source: QBE press releases (qbe.com/us/newsroom/press-releases/qbe-partners-with-jupiter-to-take-on); (qbe.com/us/newsroom/press-releases/the-climate-change-corporation)

Lloyd's / The Market / RenaissanceRe Syndicate Management Ltd

Developing insurance and reinsurance products

RenaissanceRe continues to work with and engage with our clients to help them to consider and develop products to suit their needs as a result of climate change. The work outlined in developing open source model sis one key area, as however is developing products such as parametric or green bonds, linked to defined events which result in the release of capital to the client not purely where there has been damage to property, but also as a means of disaster relief. RenaissanceRe has been working with local, state and national governments to help develop products tailored to their needs, including in relation to city and housing construction and resilience.

Supporting research

RenaissanceRe has been a key partner in the Lloyd's Tercentenary Research Foundation (LTRF) which awards grants for academic research. The LTRF has recently announced a grant of £50k which will be for academic research focused on the protection/resilience gap[2].

Source: RenaissanceRe

Lloyd's / The 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.

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 has continued to migrate products to its One TMK exchange. There are four products available for UK: Cargo 10, Cargo SS, UAS and Construction; and two for the US: Construction and Flood. One of its aims is to reduce the amount of paper involved in getting a TMK insurance policy – all quotes, binding and documentation are paper free.

Furthermore, the platform allows brokers to conduct business with us anywhere and anytime. This reduces the significant numbers of brokers attempting to develop business and get access to the Lloyd's market through the more traditional channels. 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. 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 provide 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 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 awards in 2015.

In 2017, TMK won an award at the inaugural Tokio Marine Group CSR initiative for all the group companies globally. The award recognised the UAS policy as a greener 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 this sector since 2002, by supporting one of the largest and long-established managing agencies 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, 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 leveraged 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.

Source: Tokio Marine Kiln

4. Reduce the environmental impact of our business

4.1 Encourage our suppliers to improve the environmental sustainability of their products and services, and understand the implications these have on our business.

Lloyd's / The Corporation of Lloyd's

Year on year the Corporation of Lloyd's seeks to build on its commitments to fully embed sustainable procurement practices with internal stakeholders and across its supply chain. In 2017 a Procurement Centre of Expertise (COE) was established; its 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 Protect, Promote and Provide principles while achieving maximum value, minimising risk and driving efficiencies to invest in the future."

Through 2018-19 the focus of the COE has been to continue to fully entrench itself within the Corporation while continuing to build on commitments to embed sustainable procurement practices both internally and across the supply chain (principle 1.2).

There are several projects and activities underway to support the team in delivering this mission and to help drive efficiencies and process-improvements, including;

1. Continued development of 'Lloyd's Procurement Strategy' to include 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.

– To support Corporation-wide strategic programmes, such as 'Setting Ourselves up for Success' and 'Future at Lloyd's'.

– To develop a robust and integrated approach to supplier management.

– To continue supplier rationalisation activities and development of preferred supplier lists for key spend categories, such as IT and Corporate Real Estate.

2. Continued development of 'Lloyd's Procurement Policy' which sets out policies and procedures concerning all third-party supplier expenditure, with a clear vision:

– To demonstrate continuous improvement and the achievement of value for money through the effective procurement of goods and services to ensure the Corporation of Lloyd's needs and those of the Lloyd's Market.

– 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 the 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 the Corporation of Lloyds.

– To develop a relationship between the 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 our purchasing and contracting activities are ethically, environmentally and socially responsible; applying 'Lloyd's' principles around sustainable procurement, Responsible Business, Living Wage, Anti-bribery & Corruption, Diversity & Inclusion, Modern Slavery and other applicable ethical sourcing and environmental considerations.

3. Development and implementation of a Supplier & Contract Management framework which sets out Lloyd's approach to supplier performance and risk management. As part of this framework, contract owners are asked to complete a survey on supplier performance, including to report any social, ethical or environmental risks or concerns relating to the supplier or the goods or services.
4. Supplier rationalisation continues in an effort to 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; the supply base has been consolidated from approximately 1,400 suppliers in 2017 to 670 suppliers in 2018.
5. A Sustainable Procurement Statement[f] was published in August 2018 on Lloyds.com setting out Lloyd's mission to deliver a sustainable approach to third-party sourcing and supplier management; this statement forms part of Lloyd's Responsible Business Approach.
6. A Human Rights policy was drafted to reflect the Corporation of Lloyd's promise to work ethically and with integrity.
7. The development of a Procurement Portal is underway which will automate the purchasing process and provide a self-service tool for business users requiring new goods and services. This portal will also provide a gateway for prospective suppliers to Lloyd's and enable the Procurement team to share information with its suppliers, including providing updates on various initiatives and projects, as well as providing access and updates on the 'Supplier Code of Conduct'.

   The 'Supplier Code of Conduct' continues to be utilised to communicate and set out the standards of business conduct which all suppliers are required to comply with; our goal is to work collaboratively with our supply chain partners towards a responsible business approach. The Code includes:

   - Environment
   - Econominc
   - Labour
   - Diversity and inclusion
   - Information Security and Data Protection
   - Account Governance and Compliance

Environment

Recognising that sustainable businesses should acknowledge the planet's finite resources; the Corporation of Lloyd's expects its suppliers to support sound environmental management principles and reduce their impact on the environment within which they operate:

- Suppliers must have a written environmental/sustainability policy or equivalent, appropriate to the size and nature of the supplier's operations that, where applicable, addresses preventing, mitigating and controlling serious environmental and health impacts from operations including raw material usage, greenhouse gas emissions, water, waste, air quality and biodiversity.
- Suppliers must have effective internal environmental management programmes with adequately trained staff responsible for managing the organisation's environmental performance. Suppliers must abide by all legislation and regulations related to the protection of the environment and the handling of dangerous and hazardous materials.
- Suppliers must endeavour to use products which can be re-used, recycled, used in an energy efficient manner and which cause minimal environmental damage at all stages of the supply chain.

Economic

Economic sustainability focuses on bringing economic benefit to the workers, businesses and communities in which a company operates. From an ethical perspective, commercial transactions should be economically beneficial to all parties involved and relationships should be based on the principle of fair and honest dealings, and sustainable development:

- Suppliers must embed basic business principles in a Code of Business Standards or equivalent, including adherence to local laws and regulations.
- Suppliers must ensure that policies are in place to stop fraud, money laundering, bribery and corruption, i.e. anti-bribery & anti-financial crime polices.
- All suppliers must comply with national and international sanctions policy and legislation.
- Suppliers must have reasonable and lawful payment policies with their own suppliers and subcontractors.

Labour

The Corporation of Lloyd's is committed to the protection of human rights and is guided by fundamental principles such as the United Nations Universal Declaration of Human Rights, the International Labour Organisation (ILO) Core labour

[f] Supplier Code of Conduct

standards and the Modern Slavery Act 2015; the Corporation seeks to ensure there are:

- No human rights abuses throughout our supply chains by encouraging behaviours and practices that are consistent with these principles, including:
- A commitment to anti-slavery and compliance with the requirements of the Modern Slavery Act 2015, or equivalent.
- Provision of a safe working environment, abiding by local Health and Safety laws.
- Compliance with all applicable local wage and working hour laws.
- A mechanism to enable individuals to raise concerns relating to wrongdoing or malpractice at work i.e. a Whistleblowing or Speaking Up policy.

Diversity and Inclusion

The Corporation of Lloyd's supports the belief that a diverse workforce and inclusive organisation is intrinsically linked to improved business outcomes. As an employer it recognises the importance that equality legislation must play in promoting equality and eliminating unlawful discrimination; in striving for excellence it seeks 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.

The Corporation's suppliers will support and reinforce its commitment to providing an inclusive environment for its workforce. Suppliers are expected to provide the same equal opportunities to their workforce and we require commitment to a series of principles.

Information Security and Data Protection

The Corporation of Lloyd's recognises that Information Security is a business matter, not just an IT matter, and that it must reflect changes from several sources, notably organisational design, technology adoption, culture and regulatory and legal change.

Corporation suppliers must demonstrate compatibility with 'Lloyd's Information' security policies and standards. The details of this section are less relevant to reporting but are available to the reviewers on request.

Account Governance and Compliance

The Corporation encourages active engagement, strong account governance and open communication with its supplier throughout the term of the engagement; suppliers are expected to:

- Actively support eProcurement, e-Invoicing, including as a minimum to accept PDF Purchase Orders and provide PDF Invoices via email. This allows a reduction in paper, drives security, accuracy and efficiency, and requires consideration about information and data security to be included to provide a full view of our supplier expectations.
- Take responsibility for ensuring that they keep the Corporation up to date with any changes to details including; VAT registered number, bank account details and address.
- Notify the Corporation of any changes to authorisations, company ownership, investigations and material risks and any other development that may impact their ability, capacity and authorisation to deliver.
- Sign and comply with the Corporation of Lloyd's Non-Disclosure Agreement (NDA).

8. The Procurement team operates a continuous improvement and review programme including a review of all supplier sourcing documentation and polices. The 'Lloyd's Tender' documentation is continually 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 Environmental Protection, Diversity and Inclusion, and as outlined above in the Code of Conduct material.

   During post-tender supplier evaluation, the Corporation continues to consider and score suppliers on responses to sustainability questions; the weighting used when scoring sustainability factors at this stage depends on the products/services being procured; as an average the weighting is 0-10-15%.

   In instances where sustainability factors have more of an impact on the products and services being procured, it may be necessary for the Corporation to follow up with a supplier site visit or request further clarification at presentation stage.

9. Continued development of an electronic contract management system to be used to store all supplier contracts. Utilisation of this system has removed the requirement for hard copy contracts which were previously stored in a vault.

10. Centralised ownership of the Corporation of Lloyd's Travel policy and Stationery provider: The Corporation of Lloyd's policy on class of travel for employees was revised in January 2017; employees are continually encouraged to make use of video and tele-conferencing facilities wherever possible (principle 4.4). This change has resulted in a significant reduction year-on-year in the number of flights taken and a reduction in the Corporation's carbon footprint, the impacts of which are outlined in principle 4.2 and 4.3.

11. The Corporation of Lloyd's seeks to involve its in-house suppliers in the development of annual environment action plans where appropriate. The full plans have been shared with the reviewers and contain 23 headline

initiatives with associated environmental impact targets across energy management, Group Technology, employee engagement, travel and suppliers.

Over the last year, through collaborations with our suppliers, the Corporation has been working hard to reduce our footprint through a number of initiatives that also form part of activities towards engaging employees (principle 4.4):

- We found that paper towels would be better for the environment that the old linen towels, which used to travel over 100 miles a month to be laundered. Paper towels are also much more hygienic. The waste paper towels also go to waste to energy and not landfill. Dyson type dryers were considered, however because the Lloyd's building is grade 1 listed we had to find a solution that fitted into the old stainless-steel roller towel system and didn't require a new power socket. This was messaged across Yammer as part of employee engagement of sustainability (principle 4.4).
- We have implemented 'Meat free Fridays' and increased vegan and vegetarian options in the staff canteen. 31% of our main meals sales are now plant based (vegetarian and vegan) which is significantly less damaging to the environment.
- We send 5 tonnes of coffee grinds to Anaerobic Digestion every year through BioBeans.
- We recycle over 750,000 paper cups and over 3,000 litres of cooking oil.
- Offering a 25p discount for visitors to the Coffee Shop and Food hall for anyone using reusable cups or containers.
- Installed the Winnow system in the restaurant in 2018, with the aim of reducing our food waste. So far food waste has been reduced by over 50%.
- Replacing plastic cutlery, coffee lids, and take-away food containers in the canteen with PLA (corn starch).
- Replaced plastic straws with paper straws in all food and drink venues in Lloyd's UK sites

  According to BPR Group who manage and monitor all of our UK waste, we know that 89% of material that we collect is for recycling each month. Of this...

  - 63% is sent to be processed back into recycled material e.g. glass, cardboard, paper etc.
  - 26% is food waste which is sent for anaerobic digestion, a process which breaks down the waste and produces energy and fertiliser. This process takes a few weeks and is quite different from composting.

  The remaining 11% of waste is sent to an energy-from-waste facility where it is incinerated to produce energy.

12. Following the successful installation and roll-out of confidential waste bins, coffee cup and glass recycling points last year, the Corporation has increased installed additional signage in the Underwriting Room in an effort to raise awareness and improve recycling behaviour.
13. 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 our external facilities management partners.

    A range of examples are noted below, and a full action plan for 2018 and 2019 has been distributed to the external reviewers that also includes sections on ITG, employee engagement, travel, suppliers, management and reporting:

2019 Energy reduction examples delivered by Corporate Real Estate

Initiative	Proposed environmental impact
Set an energy reduction target:	To reduce carbon emissions in the London building by 1% (based on 2018 actuals).
Revision of Energy Efficient Small Plant (LED opportunities / AHU pumps, motors and drives)	Reduce energy usage
Energy Savings Opportunity Scheme (ESOS) Regulations Reporting, and TM44 Survey (Separate spreadsheet)	Identification of potential energy reduction. Air conditioning energy efficient inspection (CIBSE TM44 Guidance). ESOS Mark 2 - Q4 2019.
Undertake a CO2 assessment when opening new offices	To determine if there are any potential savings through the implementation of initiatives. In the reporting year this includes the approval of the New York office building, which has Gold LEED status (approved June 2019 by the Board)
Meat free Mondays and increase in vegan and vegetarian options	Contribution to lowering the carbon footprint.
To reduce the number of deliveries to the London building and encourage environmentally friendly vehicles.	Contribution to lowering the carbon footprint.
To reduce the use of personal portable electrical devices in Lloyd's UK premises.	Discourage the use of fans / heaters from Corporation areas.

Forward planning

The Corporation of Lloyd's reviews 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 (principle 1.2).

Meetings in 2019 are scheduled at the beginning of the year, and the group has met in February and July, with the final meeting scheduled for October. Activity, minutes, and all documentation is shared within the group in a SharePoint area available to the group. The full list of activities has been provided to the reviewers and details will be shared in the next reporting year when they become public.

Evidence also applies to principle(s): 1.2, 4.2, 4.3, 4.4

Source: The Corporation of Lloyd's

Lloyd's / The Market / ArgoGlobal / Sustainability of products and services used by the business

In support of its commitment to influence the potential negative impact of climate change, Argo Group has now included climate change as a part of its review and development of its internal sustainability plan that was established during 2015 and has been maintained into 2019.

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 type and amount of Argo Group internal communications regarding climate change and sustainability issues has continued to be increased throughout 2018-2019, with training and communication meetings occurring in certain Argo Group business offices and the posting of climate change-related newsletters and information on Argo Group's internal intranet site, which is accessed by its 1,500 employees.

Since 2014, Argo Group has continued to make a significant investment in the use of Video Conference (VC) technology with the primary purpose being that of holding business meetings that do not require business travel. The on-going analysis of the of VC usage is positive, with an increase in VC usage during the period of 2014-19, and a resultant reduction in the amount of employee 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 trying 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 purposes and to also include energy efficient requirements in lease negotiations and agreements. The preference for "green buildings" has also been included as a specific due diligence checklist item for office selection purposes.

During 2018, the London office was relocated. Green targets were incorporated into this relocation to achieve a BREEAM certificate. BREEAM is the world's leading sustainability assessment method for master planning projects, infrastructure and buildings. It recognises and reflects the value in higher performing assets across the built environment lifecycle, from new construction to in-use and refurbishment.

We have also continued to embed the climate change 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.

Tangible measures	Evidence
Environmental Performance is considered in office space procurement and in office services (printer, toner) and recycle schemes put in place where feasible.	– Checklist for facilities management
Office moves in London, Bermuda and New York in 2017-2019 specifically considered the LEED performance of buildings. This was a material consideration in the selection of office space and New York office has the highest designation.	– Checklist for facilities management
Environmental performance is one checklist item on vendor and outsourcing assessments. This is not materially implemented in a consistent manner as of yet.	

Source: ArgoGlobal

Lloyd's / The Market / Beazley

Our Environmental Policy states:

Beazley is committed to compliance with applicable environmental legislation and other organisational commitments and also to continual improvement and preventing pollution.

Beazley is committed to managing its environmental aspects and seeks to reduce adverse impacts arising from office based activities and business travel.

Key environmental initiatives include:

- Monitoring Environmental Performance - We have, since 2008, monitored a range of environmental key performance indicators including energy consumption and greenhouse gas emissions and are using this information to help identify and realise opportunities to improve our performance.
- Sustainable Procurement - We have developed and implemented formal procedures to ensure that environmental impacts are considered and managed during the procurement process.
- Waste Management - We actively facilitate recycling of our office waste at all Beazley office locations and review regularly our waste management practices and identify opportunities to improve. Our focus is on reduction and implementing methods to support this.
- ClimateWise - Beazley has been reporting against the ClimateWise principles since 2007.

Beazley has systems that monitor progress against our environmental objectives. The directors will provide appropriate resources as required in order to enable the organisation to meet these objectives.

Beazley communicates its Environmental Policy to all employees through the company's intranet, employee induction and training. Where appropriate, our internal and external stakeholders are required to acknowledge and adhere to the Beazley Environmental Policy and relevant operating procedures.

Our Procurement Policy also requires potential service providers to supply information on programs or policies to improve their environmental performance when responding to request for proposals (RFPs).

Environmental and sustainability assessments are done on an "as and when" basis for new initiatives (ie design and fit-out of new offices) or when reviewing existing processes (through meetings with the Responsible Business Committee) or by individual teams being proactive or by staff engagement by people posting ideas and suggestions on our internal innovation site, called the BeeHive.

Specific significant projects such as office fit-outs are designed to a standard usually to complement the building status where practical (such as BREEAM rated) where LED lighting and recycled / sustainable / local products are assessed and sourced where practicable.

Regular suppliers such as lunch providers (extending Vegetarian and Vegan ranges & sustainable packaging) or stationery suppliers using recycled products and fsc paper or cleaners using environmentally friendly cleaning products and installing hand dryers.

Our Responsible Business Marketplace workstream is focused on considering how climate change and wider sustainability issues impact our business, at every level from procurement through to underwriting and investment. In particular, we have focused on our value chain through our internal sustainability initiative, in which underwriters have looked at what product innovations could incentivise better environmental and social outcomes.

Source: Beazley

Lloyd's / The Market / MS Amlin / CR Policy

MS Amlin's Corporate Responsibility 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.

MS Amlin is currently working with the Procurement department to capture sustainability as part of our RFP processes. This has started with the selection of a single travel provider who provides key CO2 consumption data at regular intervals throughout the year. Employees are encouraged to reduce business travel where possible and use video and audio conferencing

Source: MS Amlin

Lloyd's / The Market / QBE / Supply chain engagement on environmental sustainability

In 2018 we released our Supplier Sustainability Principles, furthering components contained within the QBE Group Procurement Policy, outlining our minimum expectations of our suppliers across a range of sustainability issues. We understand that our purchasing decisions not only affect our performance, reputation and risk profile, but also affect the economy, environment and communities in which we operate. As part of our broader approach to sustainability, we seek to engage suppliers and partners who share this understanding and commitment, and who can work with us to achieve our objectives.

Following the introduction of our Supplier Sustainability Principles, in 2018 we:

- Implemented a remote claims adjustment program helping to reduce our carbon footprint through reduced fleet use across our North American Operations.
- Expanded the use of Procure to Pay systems to the Australian market to include advance authorisation of transactions with suppliers to facilitate timely payment of their invoices and equitable treatment of our SME customers.
- Partnered with Social Traders, Supply Nation and WEConnect International to further promote supplier diversity and collaboration with social enterprises (where possible) across our supply chain.
- Piloted a Supply Chain Financing program that will enable third parties to take advantage of early payments, allowing suppliers within European Operations (EO) to optimise cash flow.

Our procurement team aims to deliver value for money in a responsible and sustainable manner, with a focus on minimising operational risk when negotiating and interacting with suppliers. We are doing this by developing third party risk management practices that include considerations for suppliers' ESG practices.

Evidence also applies to principle(s): 1.2, 4.2, 4.3, 4.4

Source: QBE Sustainability Report 2018 (p.51).

Lloyd's / The 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 include monitoring of key environmental impact areas associated with our principle office at 20 Fenchurch Street and our two 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 our IT infrastructure at the Sungard data centre (Guildford). We are reviewing the opportunities identified and considering the recommendations made.

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

4.2 Disclose our Scope 1 and Scope 2 GHG emissions and Scope 3 GHG emissions using a globally recognised standard.

Lloyd's / The Corporation of Lloyd's

2018 marks the sixth 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. These are supported by activities forming the responsible business strategy, with tracking in the Environmental Working Group (principle 1.2).

These figures are reported publicly in the Corporation of Lloyd's annual and strategic reports, and made available online in the environmental section of the public website.

Methodology

The GHG accounting and reporting follows principles of relevance, completeness, consistency, accuracy and transparency. Carbon Smart applies 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 Corporation of Lloyd's continues to use the operational control approach for defining the scope of its GHG emissions inventory and calculate total direct Scope 1, 2 and major Scope 3 emissions. Reported environmental data covers 100% of contracted staff worldwide; the review includes all the Corporation's entities that meet the criteria of being subject to control or significant influence of the Corporation.

As 2018 is only the sixth year the Corporation is reporting on emissions from its international offices, data on some emissions sources remains challenging to obtain, and therefore was excluded from the Corporation's overall GHG emissions summary for 2018: refrigerants, company owned/leased vehicles and national rail from non-UK offices.

Consistency

In order to ensure comparability, Carbon Smart has continued to use the same calculation methodologies used in previous years. The Corporation has dual reported for scope 2 emissions in 2018, in line with changes with the WRI Greenhouse Gas Protocol, for the third time. The location-based scope 2 total has been used to report the Corporation's total GHG emissions to ensure a consistent approach with previous years.

The data for 2018 was collected, verified and calculated in accordance with the requirements of the following standards:

- World Resources Institute (WRI) Greenhouse Gas (GHG) Protocol (revised version)
- ISO 14064 part 1, and
- Defra's Environmental Reporting Guidelines: Including mandatory greenhouse gas emissions reporting guidance, June 2013

The emissions have been calculated using the Defra 2018 conversion factors. This work is partially based on the country-specific CO^2e emission factors developed by the International Energy Agency, © OECD/IEA 2018 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.

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 on the Lloyd's website.

Results

The Corporation of Lloyd's total reported GHG emissions from all business activities in 2018 were 9,732 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 2018 GHG emissions (tonnes CO^2e)	Lloyd's total 2017 GHG emissions (tonnes CO^2e)
UK	1,702.3	5,252.2	1,886.3	<1	8,840.8	10,170
International offices	17.1	768.1	105.6	-	890.9	825
					9,732.7	10,995

As in 2017, 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).

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[9]

	Scope 2 – location -based (tonnes CO^2e)	Instrument type	Scope 2 – market-based (tonnes CO^2e)	Instrument type
UK	5,252	National grid average emission factor (issued by Defra)	0	Supplier emission factor (100% renewable energy used)
International offices	768	Various national grid average emission factors (issued by Defra & International Energy Agency)	781	Various national grid average emission factors (issued by Defra & International Energy Agency)
Total	6,020		781	

The Corporation's total location-based scope 2 emissions are 6,020 tCO^2e whilst market-based scope 2 emissions are 781 tCO^2e.

91% of electricity consumed globally, all of which is used in the UK, is sourced renewably as a result of KPIs from 2016 where the supplier contract has been renewed, and therefore has an associated conversion factor of zero.

To avoid confusion and ensure a consistent approach with previous years, the Corporation has chosen to report location-based emissions, which is the methodology used to calculate historical scope 2 emissions since 2007.

Scope 1, 2, 3 reductions from 2013 baseline

- Scope 1: 5%
- Scope 2: 41%
- Scope 3: 24%

A further breakdown of the Corporation's emission performance is detailed below:

- Scope 1 emissions have reduced by 3% since 2017 and 5% compared to the 2013 baseline. This trend has been driven by a reduction in gas oil used in UK offices. Despite increased demand for heating in 2018, gas consumption across our UK offices reduced by 2%.
- Scope 2 emissions, comprised of global electricity emissions, have fallen by 16% compared with 2017 and 41% since the 2013 baseline year. 91% of Lloyd's electricity consumption occurs in the UK, and we have therefore benefited from a 19% fall in the carbon intensity of grid electricity in the UK in 2018.
- Scope 3 emissions fell marginally by 1% on 2017 and by 24% relative to the 2013 baseline. Whilst emissions associated with staff commuting have reduced 17% since 2017, there has been a 24% increase in emissions associated with business travel in 2018. Nevertheless, total travel emissions have reduced by 42% since 2016.

For more insight into the quality and reliability of our GHG emissions inventory please access the opinion statement issued by Carbon Smart on the Lloyd's website.

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

Source: The Corporation of Lloyd's

[9] All totals have been rounded to the nearest whole number

Lloyd's / The Market / ArgoGlobal / Emissions

All figures in the table below relate to Exchequer Court, 33 St Mary's Axe, London EC3A 8AA. At the end of 2018 Argo moved to new Office Premises in One Fen Court EC3.

ArgoGlobal rents a number of desks in the Room at Lloyd's - these have not been included in the table below because they fall completely within the operational control of Lloyd's and have been included within their GHG inventory.

	(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	257.6	
Steam/heat	0	
TOTAL	270.7	
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.	-	

Source: ArgoGlobal

Lloyd's / The Market / Beazley

Beazley has been completing GHG reports annually since 2008, in compliance with legal requirements. These are publicly available on our website. Sustainalytics, a consultancy, finds that our carbon emissions intensity is well below the industry median.

Source: Beazley

Lloyd's / The Market / MS Amlin / CDP

MS Amlin have renewed a contract with Cushman & Wakefield, a leading global private commercial property services company, to provide facilities management services to our UK and European office portfolio. This decision consolidated our facilities management requirements, whilst also increasing efficiencies for assessing and reporting on the environmental impact of our operations.

Cushman & Wakefield measured MS Amlin's carbon footprint in 2018 through the Carbon Disclosure Project (CDP). MS Amlin has completed the CDP submission and is awaiting the results. Going forward we will continue collating the information required for CDP reporting on an annual basis.

Both of our offices in Chelmsford and London continue to carry a high rating under the Building Research Establishment's Environmental Assessment Method (BREEAM), 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.

Forward planning

MS Amlin 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 continue to comply with Article 8 of the European Commissions Energy Efficiency Directive.

Looking forward we will continue to review across all of our property our 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.

Evidence also applies to principle(s): 4.1

Source: MS Amlin

Lloyd's / The Market / NUAL

Navigators London is a tenant in a managed building. The building management are responsible for utility and sustainability report and do this under an eco-monitor platform. This provides for monitoring of monthly utility (electricity and gas) consumption across the multi-tenanted building, and includes monthly tCO_2 equivalent per month, with an aim and current trend for continuous improvement. The building management systems have been ISO 14001:2015 certified since April 2018.

Grey water systems are used for toilet facilities. Arrangements are in place for tenants to recycle batteries, printer cartridges, paper, plastic, glass and food, and 6 monthly recycling audits are conducted for each tenant with feedback to prompt improvement.

Evidence also applies to principle(s): 1, 2

Source: NUAL

Lloyd's / The Market / QBE / QBE Group Reporting

QBE Insurance Group Limited reported global greenhouse gas emissions of 47,273 tonnes carbon dioxide equivalent (tCO_2e) for 2018, a 10% reduction from 2017 (52,225 tCO_2e).

During 2018 QBE had an active absolute emissions target to reduce business air travel (kilometre travelled) by 20% by 2021 from a 2017 baseline. The 2018 emissions results are on track to achieve our air travel target with 19% decrease in air travel (kilometres travelled) and 16% decrease in associated emissions. We have also set three new global climate-related operational performance targets that will be measured from a 2018 base year.

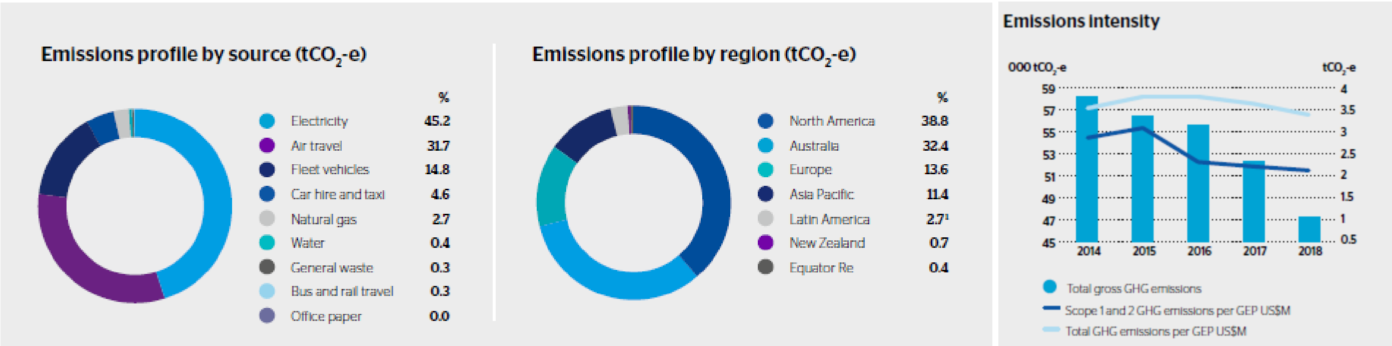
These include a target to reduce operational energy use by 15% by 2021, source 100% of our electricity requirements from renewable electricity sources by 2025 and a science-based target for our scope 1 and scope 2 combined greenhouse gas emissions. This is based on a 1.5 degrees celsius scenario and will result in a 29.4% absolute reduction in emissions by 2025. As 2019 is the first calendar year in which we will report performance against these targets, we are unable to quantify the percentage of target achieved but will be able to do so in future periods.

Greenhouse gas emissions by activity

tCO_2-e GHG EMISSIONS[1]	% CHANGE FROM PRIOR YEAR	2018	2017	2016	2015	2014
Direct emissions (Scope 1)[2]						
Fleet vehicles	5%	**6,988**	6,631	7,529	10,500	10,125
Natural gas heating	-1%	**1,262**	1,273[3]	1,157	1,900	1,019
Total Scope 1	4%	**8,250**	7,904	8,686	12,400	11,144
Indirect emissions (Scope 2)[2]						
Electricity consumption[3]	-11%	**21,382**	23,899[3]	25,155[3]	33,344[3]	35,908[3]
Other indirect emissions (Scope 3)[2,4]						
Business travel - air[5]	-16%	**14,973**	17,739	19,524	10,698	11,166
Business travel - car hire and taxi	0%	**2,161**	2,158	1,669		
Business travel - bus and rail	5%	**139**	133	168		
Office paper	-44%	**22**	39	34		
General waste	3%	**158**	154	164		
Water	-18%	**188**	229	193		
Total Scope 3	-14%	**17,641**	20,452	21,752	10,698	11,166
Total gross GHG emissions (Scope 1, 2 and 3)	-10%	**47,273**	52,255[3]	55,593[3]	56,442[3]	58,218[3]
Carbon offsets		**(47,273)**	–	–	–	–
Net GHG emissions (carbon neutral in 2018)		**-**	52,255[3]	55,593[3]	56,442[3]	58,218[3]

1 GHG emissions data is calculated based on activities within the operational control of QBE and includes emissions from CO_2, N_2O and CH_4 from both continuing and discontinued operations. Emissions from HFCs, PFCs, SF_6 and biogenic activities are not applicable to QBE's operations and therefore have not been reported.
2 Estimates were made for certain office locations and activity data streams where actual activity was not available, and were based on comparable offices in the same region.
3 In 2018, as part of our ongoing focus on improved data quality, we have been able to capture more complete and accurate electricity and natural gas emissions data. For consistency, we have restated electricity emissions for 2014 to 2017, with restatements for 2014 and 2015 based on 2016 data. Similarly, we have restated our natural gas heating emissions for 2017 based on 2018 data.
4 Scope 3 emissions from 2016 onwards include waste disposal and water consumption. Scope 3 emissions from investments and employees commuting are not included in QBE's GHG inventory due to unavailability of data. Other Scope 3 activities related to capital goods, transportation and distribution, real estate and franchisees are not applicable to QBE's operations.
5 Scope 3 emissions from business air travel from 2016 onwards include DEFRA's required distance uplift and exclude radiative forcing. For 2015 and 2014, these emissions exclude distance uplift and radiative forcing.

QBE Group 2018 GHG Emissions / tCO_2-e:



Our reporting on environmental data follows the guidelines / standards / protocols outlined in:

– the Global Reporting Initiative (GRI) Standards' requirements for Emissions Disclosures 305-1, 305-2 and 305-3;
– the Greenhouse Gas Protocol's Corporate Accounting and Reporting and Corporate Value Chain (Scope 3) Accounting and Reporting Standards; and
– QBE's Greenhouse Gas Reporting Framework which governs our data collection process.

The Group's GHG emissions reporting is driven by our global insurance operations across the world. We calculate emissions using the energy content and emission factors considered most relevant to each region, based on information sourced from:

– Australian Government's Department of Environment and Energy: National Greenhouse Accounts Factors 2018;
– United Kingdom Government's Department for Business, Energy & Industrial Strategy: GHG Conversion Factors for Company Reporting 2018;
– United States' Environmental Protection Agency (EPA): Emission Factors for Greenhouse Gas Inventories: Direct Emissions from Stationary
– Combustion 2018;
– United States' EPA: Emissions & Generation Resource Integrated Database (eGRID) 2016 (released in 2018); and
– International Energy Agency: CO2 Emissions from Fuel Combustion, 2018 edition.

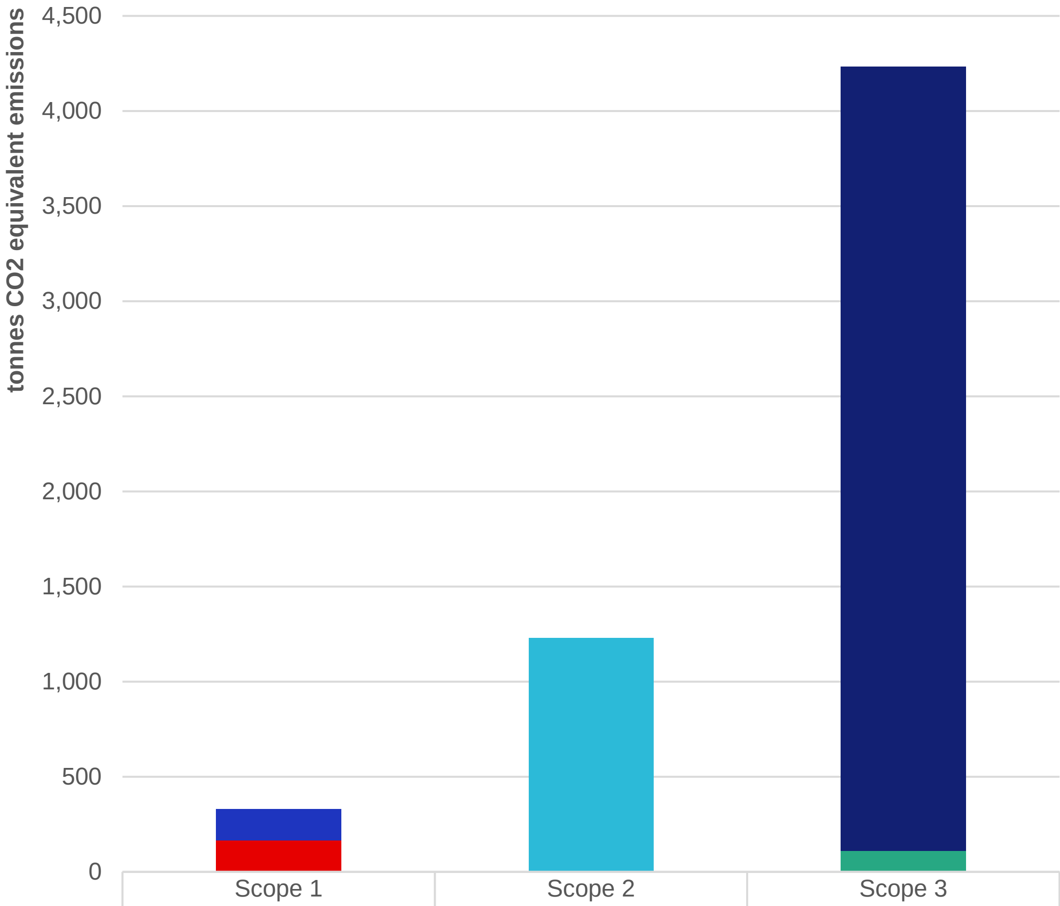
QBE EO

QBE EO Corporate Real Estate (QBE EO CRES) has primary responsibility for identifying, monitoring, reducing and reporting environmental impacts from QBE EO'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 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 resource consumption and greenhouse gas emissions, providing the data for internal and public disclosure of QBE EO's corporate 'carbon footprint'.

QBE EO in 2018 reported greenhouse gas emissions of 5,861 tonnes carbon dioxide equivalent (tCO_2e). 2018 emissions are comparable to 2017 emissions, but consolidate the 25% reduction in emissions achieved between 2016 and 2017 through reduced property portfolio (m^2), reduced consumption (kWh/m^2) and reduced grid carbon intensity ($kgCO_2e/kWh$).

Reported greenhouse gas emissions (CO_2e) for 2018 are shown by GHG Protocol scope and source in the graph below.



Emissions by GHG Protocol Scope	Scope 1	Scope 2	Scope 3
	Associated Emission (tonnes CO2e)		
Boilers	164.69		
Car use	164.69		
Air conditioning and fire suppression equipment	0.00		
Back-up generators	0.32		
Imported electricity		1,228.98	
imported heat and steam		0.00	
Air travel			4,123.40
Emissions arising from rail travel			110.98

The QBE EO scope of reporting covers direct environmental impacts associated with 29 QBE offices located in 12 countries, with over 2,330 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.

QBE EO calculates greenhouse gas emissions associated with our offices 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 2018 UK Government conversion factors for 'all gases' i.e. carbon dioxide, methane and nitrous oxide reported as carbon dioxide equivalent emissions (tonnes CO_2e). The exceptions to this are emissions associated with electricity supply to non-UK offices, which are calculated using International Energy Agency emission factors (CO_2 Emissions from Fuel Combustion, 2017) which are limited to carbon dioxide (tCO_2) and refrigerants which are reported as tCO_2e.

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

Source: QBE Sustainability Report 2018 (p52-54).

Lloyd's / The 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 2018, 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 (General office waste)	23,184	23,184
Food Waste (General office waste)	11,590	11,590
Residual Waste (General office waste)	14,545	0
Glass waste	232	232
Confidential waste	17,215	17,215
Time Served Archive Material	0	0
Waste Electrical and Electronic Equipment (WEEE)	490[h]	490*
Toner Cartridges	0.73	0.73
Computer Keyboards	3.6	
Batteries	32	32
TOTAL / kg	**67,292**	**52,744**

Overall, the table shows that we have reused/recycled 78.4% of our waste in 2018. The waste statistics available from AECOM include:

- General office waste is segregated in to recycling bins. Dry recyclable waste in 2018was 23,184kg.
- 2018 Mixed Dry Recyclable (MDR) waste arisings are reported as: 23,184 kg.
- 2018 Food waste arisings are reported as: 1,590 kg.
- 2018 Glass waste segregated for recycling is reported as: 232 kg.
- 2018 Residual waste is reported as: 14,545 kg
- 2018 confidential waste arisings are reported as 17,215 kg.
- 2018 Redundant IT equipment managed on behalf of TMKG in the UK (London and SunGard) during 2018, was reported as a Total 490kg with 363 kg (74%) 'resold' and 127 kg (26%) 'scrapped', 'shredded' or 'crushed'
- 32 kg of battery waste was consigned for recycling 2018

[h] Reported WEEE is for TMKG in the UK as whole and includes waste from other TMKG UK locations e.g. the SunGard data centre.

- No furniture waste was generated in 2018
- Of the total 9,029.74 kg 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 supported 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.

Source: Tokio Marine Kiln: TMK facilities management and BREEAM certificate and ESOS Phase I, AECOM audit reports are available upon request.

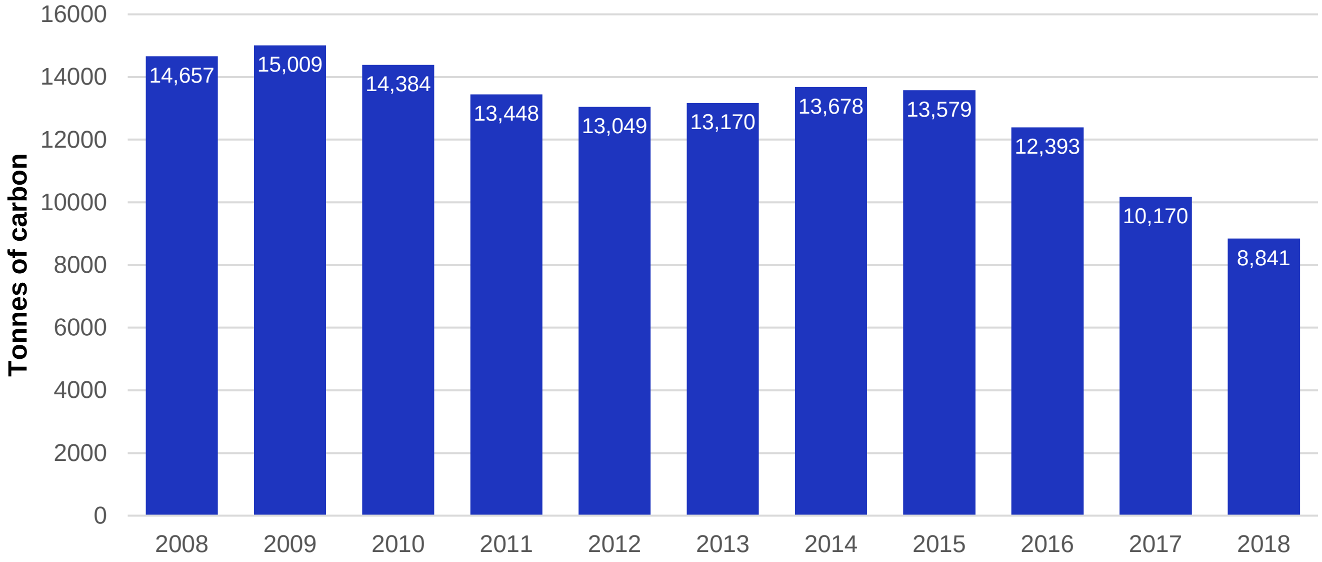
4.3 Measure and seek to reduce the environmental impacts of the internal operations and physical assets under our control.

Lloyd's / The Corporation of Lloyd's

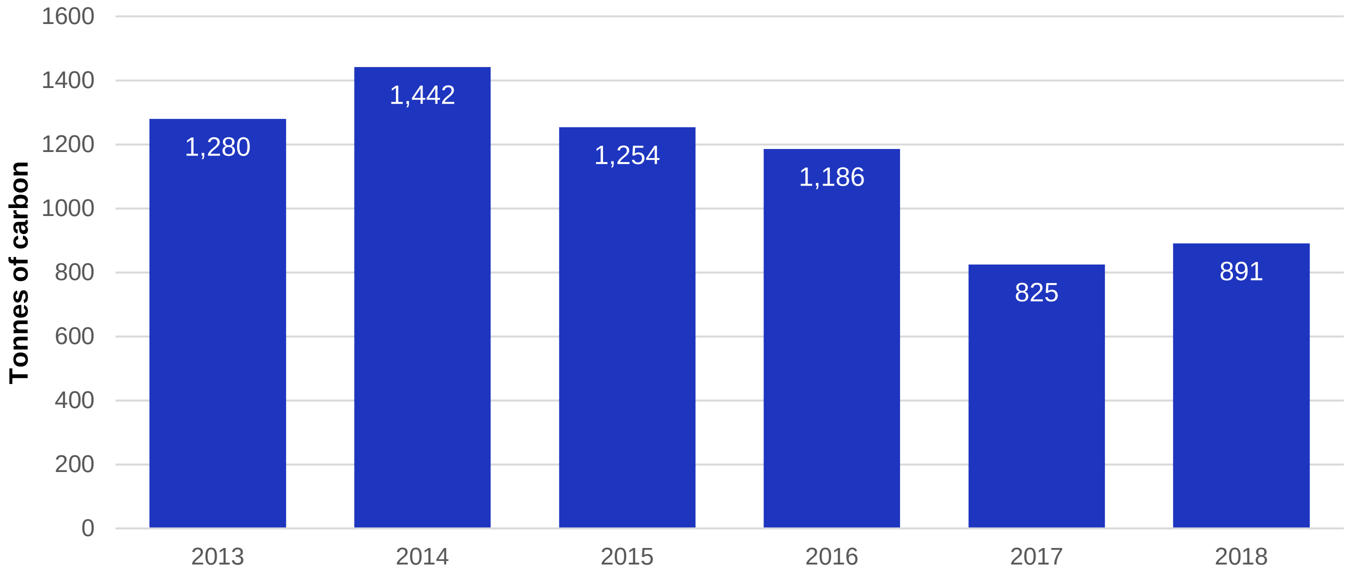
The Corporation of Lloyd's works in partnership with Carbon Smart – environmental consultants contracted by the Corporation – to calculate the GHG emissions of the Corporation's global operations. These figures are disclosed publicly each year in Lloyd's annual report and are made available on a dedicated page on Lloyds.com. They are also shared on the Corporation intranet – MyLloyd's – as part of staff engagement on environmental initiatives throughout the year such as World Environment day that features a week-long activity plan (principle 4.4).

2018 marks the sixth 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. Examples of initiatives are covered in principle 4.1 and 4.4.

11-year UK carbon footprint trend



Six-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 65% of the total employees based outside of the UK, down from 75% in 2017.

Emissions for the remaining international employees, and their respective offices, were estimated for all emissions sources besides electricity using an average of tonnes of CO2e per employee outside of the UK. Electricity emissions for the remaining international employees, and their respective offices, were estimated using an average kWh consumption per employee outside of the UK, multiplied by location- and market-specific emissions factors across each country. The Corporation will review in the coming years options available to expand reporting across all offices, and therefore further improve the accuracy of the Corporation's carbon footprint. This process is covered in principle 4.2.

Results

The Corporation of Lloyd's total reported emissions have decreased by 11% since 2017. This has been driven by reductions in the emissions from global electricity consumption, which accounts for 62% of global emissions. Whilst emissions from the international offices have risen by 8% since 2017, this is in the context of a 12% increase in headcount across our non-UK sites, contributing to a 10% reduction in our emissions intensity (tonnes of CO^2e per employee) in 2018.

Carbon offsetting

The Corporation of Lloyd's offsets air travel emissions through 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. This partnership was continued in 2017, and again in 2018.

In 2018 the Corporation purchased carbon credits for the improved cook stoves project in India. 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 500,000 stoves since 2008. The stoves are designed to make them 60% more fuel efficient and significantly more durable than traditional stoves. The stoves are now manufactured in India, creating new jobs regionally (totalling 120 roles so far) and the project emphasises training and educating distributors and the public about the stove and its benefits to encourage long term behavioural change.

Forward planning

The Corporation of Lloyd's reviews 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. The 2019 action plan contains 29 initiatives ranging from employee engagement to energy management. The plan covers activities in the UK and offices around the world.

Meetings in 2019 are scheduled at the beginning of the year, and the group has met in March and July, with the final meeting scheduled for October. Activity, minutes, and all documentation is shared within the group in a SharePoint area available to the group.

This group is composed of representatives from the following Corporation teams: Operations, Corporate Real Estate, IT, Catering, Innovation, Supplier Management, and Responsible Business.

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, and covers all Lloyd's offices.

Evidence also applies to principle(s): 4.1, 4.2, 4.4

Source: The Corporation of Lloyd's

Lloyd's / The Market / Beazley

Beazley's Commercial Management team have been monitoring environmental performance of the London office since 2008 and producing a Greenhouse Gases report annually, which has recently been expanded to include Dublin and 4 of our larger US offices.

Commercial Management also produce a mandatory ESOS (Energy Savings Opportunity Scheme) report every 4 years. This has previously been carried out on the London office and in 2019 will be focused on Birmingham. These reports enable us to identify trends for review.

Methodologies used to calculate measures and targets are detailed in these reports. Other initiatives such as improving awareness and employee engagement are discussed and documented in the Responsible Business Committee meetings.

Source: Beazley

Lloyd's / The Market / Chubb / Chubb 2018 UK Energy & 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.

Chubb's strategy includes reducing GHG emissions from its own operations. In 2014, Chubb announced a goal of reducing emissions by 10% per employee by 2020 from a 2012 baseline. From 2012 to 2015, Chubb's GHG emissions per employee were reduced by 5%. In 2016, ACE acquired The Chubb Corporation and adopted the Chubb name. From 2015 to 2017, the combined Chubb reduced absolute global emissions by 11%. In 2019, Chubb set a companywide goal to reduce our global greenhouse emissions by 20% on an absolute basis by 2025 and 40% by 2035. Both goals use 2016 emissions levels as the baseline. Chubb's goals are aligned with the 2-degree Celsius target outlined in the Paris Climate Agreement, as well as the science-based standards methodology of the United Nations Environment Program.

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

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 that include stakeholders at the company.

Another initiative in 2018 was the purchase of renewable energy for 100% of Chubb's offices in the U.K. In total, from January 2018 to December 2018, 9,872 MWH of renewable energy was purchased, equating to the avoidance of 1,750 tons of CO2e.

2017 vs 2018 Location-based Emissions Report[i]

Breakdowns	2017	2018
UK Facility Emissions	4,664 tCO2e	2,795 tCO2e
Number of UK Employees	1983 FTE	1913 FTE
Emissions per Employee	**2.35 tCO2e/FTE**	**1.46 tCO2e/FTE**

The UK reduced absolute location-based emissions by 10% from 2016 to 2017.

2017 vs 2018 Market-based Emissions Report

Breakdowns	2017	2018
UK Facility Emissions	1,103 tCO2e	1,038 tCO2e
Number of UK Employees	1983 FTE	1913 FTE
Emissions per Employee	0.56 tCO2e/FTE	**0.54 tCO2e/FTE**

Chubb Office Initiatives

Across its operations in 54 countries, Chubb have implemented a vast array of initiatives based on the needs of its employees in each region. Chubb's primary strategy remains the reduction of the impact of its operations, and to that end Chubb is aggressively pursuing location based solutions. In particular renewable energy, in accordance with generally agreed practices, is a major component in the

[i] 2017 and 2018 emissions have been verified by a third party, a verification document can be provided

reduction of Chubb's Greenhouse Gas emissions. Since 2016 Chubb has been purchasing only renewable energy in its UK offices, a practice which has now been extended to Spanish and Swiss offices with more countries to be included in the future.

On top of reducing Chubb's own impact, Chubb encourages its employees to minimise their impact; particularly whilst working or commuting. For many years now Chubb has been encouraging UK staff to cycle to work through a 'ride-to-work' scheme in which bicycles are subsidised by the company, and in Switzerland public transport is subsidised for the employee.

Following the success of the 'Smart-Working' programme trialled in our Leadenhall office, which successfully increased the effective utilisation rate of our available office space, all new or refurbished offices will be transitioning to the new working environment.

Following internal research which suggested that at any time there is a surplus of least 20% of desks, offices are being refitted with highly adjustable equipment so that existing space is used more efficiently rather than expanding operations. So far the offices that have been transitioned include (but are not limited to):

- London
- Paris
- Amsterdam

Evidence also applies to principle(s): 4.1, 4.2, 4.3, 4.4,

Source: Chubb

Lloyd's / The Market / MS Amlin / Office Environments

At MS Amlin's head office in The Leadenhall Building, the London Facilities team achieved a Platinum Award in the 2018 Clean City Awards. The scheme is 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.

Early 2018, MS Amlin successfully deployed 'Demand Logic' monitoring software for the building management system in The Leadenhall Building, the software has since been replicated at our Chelmsford site. Demand Logic is a software tool which provides insights to the property management teams, allowing them to deliver greater energy efficiencies at lower cost. The service uses live operational data to prioritise actions which fix faults, reduce energy and improve comfort. The first 12 months of usage have allowed MS Amlin to significantly improve the functionality of air conditioning systems whilst reducing energy consumption. It is hoped that the impact on 2018's CDP response will be a further reduction in our carbon footprint.

At our office in Chelmsford, the MS Amlin team also gained gold accreditation from Essex County Council for its travel plan. Highlights include single car use reduction of 12%

In Asia, MS Amlin's Singapore office is located in the CapitaGreen building. The building has received numerous awards for its design and environmental credentials such as, the Green Mark Platinum award in 2012, Universal Design Mark GoldPlus (design) (2013) and Best Tall Building Award for Asia & Australasia Region (2015). It uses water-saving techniques such as rainwater harvesting to irrigate the plants. Air-conditioning for the office floors is provided via innovative technology which takes in fresh cool natural air from the crown of the building at lower energy consumption, providing better indoor air quality. The façade of CapitaGreen also features a combination of energy efficient, double-skin high performance glass and extensive vertical greenery, aimed at minimising solar heat gain.

Evidence also applies to principle(s): 4.4

Source: MS Amlin

Lloyd's / The Market / NUAL

Currently intent is to facilitate sustainable choices for employees championed by a very proactive Reception Manager, although there is not a formal management sponsored sustainability plan. Food, plastic, paper and glass recycle facilities are made available to staff in kitchen/communal areas, and IT are responsible for battery and printer cartridge recycling.

We are installing had driers in toilet facilities, albeit current kitchen and hand towels are recyclable.

Zip-taps are installed in kitchen areas (hot and cold water) which reduce employee reliance on purchased hot and cold drinks, reducing paper and plastic usage.

The building has bike store and changing facilities to assist in making cycle to work a viable option.

Evidence also applies to principle(s): 1, 2

Source: NUAL

Lloyd's / The Market / QBE

QBE Group monitors a number of environmental indicators around resource consumption (energy, water, office paper, business travel etc.) in order to identify opportunities to improve performance and support decision making to manage climate-related risks and opportunities within its internal operations. The environmental indicators measured can be seen in the below dashboard, which is included in QBE's Annual Sustainability report:

Other environmental indicators

	UNITS	% CHANGE FROM PRIOR YEAR	2018	2017	2016	2015	2014
Electricity consumption in QBE offices	MWh	-12%	**35,916**	40,691[3]	46,500[3]	54,089[3]	58,668[3]
Electricity consumption per FTE	MWh	0%	**2.88**	2.88[3]	3.27[3]	3.72[3]	4.17[3]
Business travel	000 km	-17%	**110,499**	132,851	124,195	97,569	98,236
Air travel	%	-3%	**86.7**	89.0	92.6		
Road travel[7]	%	18%	**10.5**	8.9	4.7		
Rail and bus travel	%	33%	**2.8**	2.1	2.7		
Business travel per FTE	000 km	-6%	**8.87**	9.40	8.73	6.71	6.98
Office paper purchased	tonnes	-45%	**339**	618	505		
Office paper purchased per FTE	kg	-39%	**27**	44	35		
Water consumption	kL	-18%	**178,731**	218,156	183,906		
Water consumption per FTE	kL	-7%	**14.35**	15.43	12.93		
Total waste and recycling	tonnes	-14%	**2,351**	2,739	2,403		
General waste	tonnes	7%	**1,627**	1,526	1,289		
Paper recycled	tonnes	-41%	**687**	1,169	1,094		
Other recycled waste[8]	tonnes	-16%	**37**	44	20		
Waste per FTE	kg	-3%	**189**	194	169		

3 In 2018, as part of our ongoing focus on improved data quality, we have been able to capture more complete and accurate electricity and natural gas emissions data. For consistency, we have restated electricity emissions for 2014 to 2017, with restatements for 2014 and 2015 based on 2016 data. Similarly, we have restated our natural gas heating emissions for 2017 based on 2018 data.
7 Road travel includes business travel by car hire, taxi and private car.
8 Includes recycled IT asset waste and mixed plastics, cardboard and glass.

Other activities completed to reduce the impact of our operations in 2018 include a review of our energy portfolio and publishing a QBE Group Energy Policy. This Policy aims to provide shareholders, customers and the wider community with a clear explanation of QBE's approach to investing and underwriting energy projects, now and in the future. It also details our commitment to support our customers in the transition to a lower carbon global economy.

We are already well advanced on this plan, with a range of measures already taken, including in our investments and underwriting portfolios. For example, due to the high emissions intensity of thermal coal, we targeted zero direct investment in the thermal coal industry by 1 July 2019. We also applied the 2°c Investing Initiative (2°c ii) Paris Agreement Capital Transition Assessment Tool (PACTA) to confirm our credit portfolio is aligned to the Paris Agreement, both now and in five years' time.

We are also reducing our exposure to thermal coal projects in our underwriting portfolio. From 1 July 2019, QBE will exclude any new direct insurance services for new construction projects for thermal coal mines, coal power stations or coal transport infrastructure. At the latest, by 1 January 2030, QBE will have phased out all direct insurance services for thermal coal customers, except for statutory or compulsory insurance. We plan to conduct further detailed analysis of other priority underwriting portfolios to identify similar opportunities to reduce the overall climate impact of our business.

QBE EO

QBE EO's Corporate Real Estate (QBE EO CRES) has primary responsibility for the management and maintenance of QBE's European office infrastructure – physical assets 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 to provide the data for internal and public disclosure of QBE EO's corporate 'carbon footprint'.

CRES EO produces quarterly 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, limitations and actions required to facilitate development and maintenance of robust reporting. Our Environmental Inventories include calculation of 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 provides an 'audit trail' for environmental reporting to QBE Group Environmental, Social and Governance.

QBE Group introduced a worldwide Environmental and Social Governance (ESG) System at the end of 2016, which provides a framework to improve global data quality. QBE EO aligned its pre-existing data management system with the requirements of the ESG system during 2017, with environmental activity since 2016 data audited and verified by Deloitte.

Specific initiatives impacting QBE EO to reduce adverse environmental impacts include:

- QBE is progressing to ensure resource efficiency initiatives are rolled out across our Global operations. For instance, we have converted major offices in North America, Australia and Europe to energy-efficient LED lighting and occupancy sensors, in order to reduce energy consumption. In addition, we are encouraging staff to minimise waste by re-using and recycling. Across our global operations, we measure, track and report on environmental metrics including greenhouse gas emissions by scope and intensity, energy, water and office paper consumption, waste generation, and business travel.
- Consolidation of QBE's office space at the Chelmsford office. The Chelmsford office previously consisted of two separate buildings, which were combined to form one QBE office. However, reduced space requirements have allowed the offices to be reinstated to their original configuration, which the intention that one building is occupied 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 to be decommissioned for future sub-let. This project continued through 2017 and the empty office is now ready to be let out. The overall impact of this initiative is improved office facilities for our Chelmsford staff, reduced costs for QBE and improved resource efficiency for the site with associated reduced adverse environmental impact.
- QBE EO is a participant in the Energy Savings Opportunity Scheme (ESOS) and has an audit programme scheduled for 2019 to identify opportunities to reduce consumption or improve efficiency.

Evidence also applies to principle(s): 4.1, 4.2, 4.4

Source: QBE Sustainability Report 2018 (p52-54).

Lloyd's / The Market / RenaissanceRe Syndicate Management Ltd / Carbon offsetting

RenaissanceRe has begun the process of selecting a partner to help offset its carbon footprint in London and across its European operations for areas such as energy usage, international travel etc. A partner has been selected, with the goal for RenaissanceRe to invest in projects which serve not simply to have a neutral impact, but which proactively help to offset our carbon offprint.

Source: RenaissanceRe

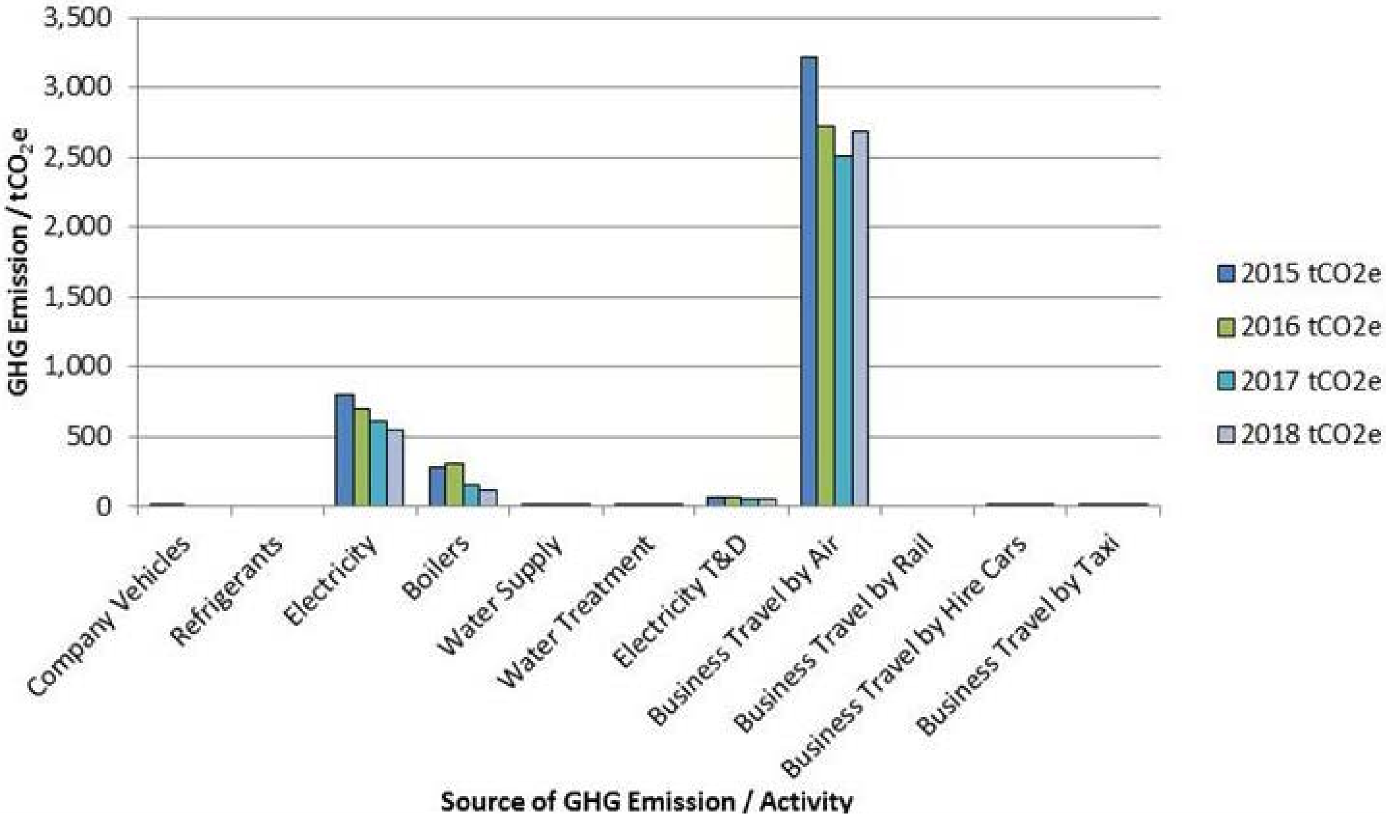
Lloyd's / The Market / Tokio Marine Kiln / Disclose our direct emissions of greenhouse gases using a globally recognised standard

2018 greenhouse gas emissions for TMKG's activities at 20 Fenchurch Street and electricity consumption associated with TMKG's infrastructure at two UK data centres are reported as 3,385.27 tCO_2e, 1% higher than 2017 emissions (3,338.01 tCO_2e).

Reporting is based on operational control. TMKG does not have operational control over the building infrastructure and plant at 20 Fenchurch Street due to shared tenancy and the presence of a facilities management company, consequently TMKG's reported emissions primarily fall within Scope 2 and 3 of the Greenhouse Gas Protocol. Reported GHG emissions are primarily derived from electricity consumption (Scope 2 emissions) and business travel (Scope 3 emissions) as follows:

- Scope 1 Emissions = 0 tCO_2e
- Scope 2 Emissions = 539.66 tCO_2e
- Scope 3 Emissions = 2,845.61 tCO_2e

TMKG's scope of reporting encompasses its head office at 20 Fenchurch Street, London and electricity consumption at two 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.



Source: Tokio Marine Kiln: ESOS, AECOM audit reports are available upon request

4.4 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.

Lloyd’s / The Corporation of Lloyd’s

The Corporation of Lloyd’s Responsible Business team lead engagement in this area, and are supported by various teams across the Corporation including but not limited to catering, facilities, brand teams, and the international offices.

The engagement process starts before an employee joins Lloyd’s:

– Lloyd's Code of Conduct sets out our expectations of our employees and is included as part of the induction process for new joiners.

– Lloyd's has a Speaking Up policy to which provides a mechanism to enable employees to voice any concerns they may have in a responsible and effective manner. It also periodically carries out a Speaking Up policy survey to assess awareness and views towards speaking up on issues of concern such as suspected crime, discrimination or ethical issues.

– Authors of all Lloyd's board papers are required to outline any material social, ethical and environmental implications of their proposals to the board.

– Lloyd’s is a member of the Institute of Business Ethics.

– Lloyd's is an accredited Living Wage Employer. Our pay levels for direct employees and on-site contractors meet or exceed the living wage requirements set out by the Living Wage Foundation.

In addition to these examples, Corporation staff are engaged through a number of avenues in addition to those listed throughout this report.

These include:

1. The induction process: New employees are introduced to the strategic priorities from the very beginning as part of their e-learning induction process.

   Within the Responsible Business section of the 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.

2. Corporation of Lloyd’s employees (including contractors) are entitled to three days voluntary leave over a calendar year to take part in volunteer activities.

   This includes assisting community organisations with the up-keep and maintenance of public spaces with opportunities ranging from giving a hall a deep clean or fresh coat of paint to creating a new community space.

3. Employees are also engaged on an ongoing basis through MyLloyd’s, which is the Corporation-wide intranet that consists of resources and updates for all employees. This helps employees keep up to date with the Corporation’s views of what is happen, in London and across the world.

   Key messages were:

– Increasing the amount of recyclable waste: advice shared through blog posts.

  – Reducing the amount of waste being generated: signage, internal posts, a stand in the Operations Directorate town hall.

  – Communicating and celebrate our success both internally & externally: posts shared on internal and external social media platforms.

   Over the last reporting year this was used to communicate activities including but not limited to:

4. For World Environment Day (3-7 June 2019), a communications plan involving all 23 Lloyd’s international offices was developed, which included centralised messaging and activities around the main area of focus for the year – air pollution.

   The Corporation of Lloyd’s worked with a variety of suppliers to deliver a week of activities encouraging staff to take action at work and home to help reduce their impact on the planet. This included:

   • John Neal, Chief Executive Officer, sharing details of the weeks programme on his weekly video blog. This included details around the theme for the year of improving air quality.

- Key catering suppliers coming in to the London office to talk to employees about how they source their food and make it as sustainable as possible (principle 4.1).
- A pop-up stall outside the coffee shop staffed by staff from Corporate Real Estate and our supplier Paper Round, to talk through environmental initiatives in the building.
- Our colleagues in France worked remotely instead of driving to the office to reduce their travel emissions and all joined together to watch Pollution, La France Irrespirable (Airpocalypse).
- Our colleagues in Italy planted a tree to improve air quality as well as having a competition for who can walk the most steps, avoiding using cars and scooters.
- Our offices in Sweden, Iberia and China all pledged to be plastic free for the entire week
- Our Australian and New Zealand offices screened the film "A Plastic Ocean", as well as sponsoring a bilby at the Taronga Zoo.
- Our colleagues in Dubai spent a day volunteering to clean the mangroves in Abu Dhabi.

Engagement is also employee led, through groups such as the 'Lightning Talks' group and the Yammer network:

– Lightning Talks are a set of short, informal, employee-led presentations. Lasting for about ten minutes and cover any topic chosen by the speaker, the talks can come in any format, from straight presentations, to Q&A discussions, or interactive demos. In November 2018, Lucy Stanbrough, Associate, Innovation team, delivered a talk on climate change and what it means for Lloyd's.

– There is a Responsible Business group on Yammer, the employee engagement network, to share responsible business initiatives; including Environment and Sustainability, Lloyd's Charities Trust, Lloyd's Community Programme, Lloyd's Patriotic Fund, Lloyd's Tercentenary Research Foundation, Responsible Business Strategy.

  Ad hoc questions are also asked by Corporation employees and responded to by those involved in activities. This has included queries on the sustainability of data centres, suggestions for environmental improvements, and market engagement activities. One particularly active thread was seen by 274 out of 1,149 global employees.

Evidence also applies to principle(s): 1.2

Source: The Corporation of Lloyd's

Lloyd's / The Market / ArgoGlobal / Engagement with employees

In support of its commitment to influence the potential negative impact of climate change, Argo Group has now included climate change as a part of its review and development of its internal sustainability plan that was established during 2015 and has been maintained into 2019.

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 type and amount of Argo Group internal communications regarding climate change and sustainability issues has continued to be increased throughout 2018-2019, with training and communication meetings occurring in certain Argo Group business offices and the posting of climate change-related newsletters and information on Argo Group's internal intranet site, which is accessed by its 1,500 employees.

Since 2014, Argo Group has continued to make a significant investment in the use of Video Conference (VC) technology with the primary purpose being that of holding business meetings that do not require business travel. The on-going analysis of the of VC usage is positive, with an increase in VC usage during the period of 2014-19, and a resultant reduction in the amount of employee 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 trying 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 purposes and to also include energy efficient requirements in lease negotiations and agreements. The preference for "green buildings" has also been included as a specific due diligence checklist item for office selection purposes.

Tangible measures	Evidence
Communication and engagement of staff via local campaigns and Group-wide intranet companies regarding office services, drinks containers, recycling etc…	– IntraNet screen shots etc…
Sustainability Working Group manages an action plan which includes these factors which are tracked quarterly with updates from the Facilities management team	– Sustainability action tracker
No comprehensive plan with tracking and targets in place.	

Source: ArgoGlobal

Lloyd's / The Market / Beazley

In 2019 we have launched a new Environmental Working Group, which aims to engage employees in a campaign to reduce our impact on the environment at an individual level, and to implement improvements and operational changes at a business level. More than 20 employees signed up to participate in the working group, and the campaign, called #mychoice, was launched in June 2019 with a week of internal communications focused on reducing waste, including articles on the intranet, emails, action to encourage people to give up their desk bins, and practical guidance on recycling. Further activities are planned throughout the year on a range of sustainability-related themes including cutting carbon consumption.

Measurement will be through number of pictures uploaded against the photo campaigns, number of people signing up to environmental volunteering opportunities and general comments received in surveys and meetings.

We also ran Sustainability workshops in 2018 to encourage underwriters to consider climate change and sustainability issues in their business decisions, and to consider how we can respond to these challenges with new or improved products and/or services.

Source: Beazley

Lloyd's / The Market / Chubb / Chubb Environmental Month

Chubb's first ever environmental month took place across Europe on the 20th of May until the 14th of June; either side of World Environment Day (5th of June), which represents the United Nation's principal vehicle for encouraging awareness and action for the protection of our environment.

Chubb had three main objectives for the month:

- Enhance employee awareness of climate change
- Enhance employee knowledge of Chubb environmental risk products
- Encourage the cross sale of environmental risk products

Internally a video was presented featuring the environmental team across our operations, so as to inform them of where to find information. Information was presented so that any employee would be able to explain the products Chubb provided, and how they protect resources, assets and the policy holder.

To improve engagement a series of infographics were produced, in multiple languages, with the centrepieces being the recycling of plastic bags and clothing. The topics were chosen primarily because of the extent of ocean based plastic pollution, and how the average person can minimise their impact. Once a level of awareness was established, a number of offices arranged for local charities to collect unwanted clothing or electronic devices so that they may be reused rather than refused.

A number of briefing sessions were held across Europe to educate employees regarding a variety of subject matters ranging from the decline of bees in France, to how to transition to zero-waste lifestyle.

To encourage our employees to participate an ongoing competition is being held whereby prizes will be awarded to those underwriters in other lines of business who bring in the most new environmental risk policies; by premium value, number of policies issued, or number of new submissions.

The result is a net benefit to the end customer. Knowledge of other Chubb products allows our underwriters to identify coverage gaps that the customer may have, and recommend the appropriate product to mitigate their risks.

A social media campaign was launched in tandem with the environmental month, where each week information and news articles were published on Twitter and Linked In with the goal of enhancing the public awareness of Chubb's activities.

Chubb Environmental Network

In early 2018, Chubb established a European working group, focused on the improvement of the sustainability of the offices they represented. Since then the group has expanded to include countries that previously had no representation, not only in Europe but world-wide.

The initiative was replicated in all the regions Chubb operates in, and is now being centrally coordinated by the Corporate Environment Manager. This allows for the various countries and regions to share knowledge, best practices and local initiatives all whilst helping to ensure that the objectives of the Chubb corporate environment programme are met.

The network will continue to be focused on the reduction of the impact of our operations and the education of our employees either through internal communication projects or hosting guest speakers. The network's primary goal is to establish a base level sustainability through recycling programmes, elimination of single-use plastics and continual reduction of paper consumption. Once the above has been established the network will focus on novel intiatives to directly reduce our operational impact and engage our employees.

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

Source: Chubb

Lloyd's / The Market / MS Amlin / Employee initiatives

MS Amlin seek to reduce our environmental impact through encouraging employees to play their role in addressing climate change in the workplace and to make them climate-informed choices outside work. For example, we have adopted practices in the workplace such as double sided printing, movement sensitive lighting, visible recycling centres in our offices, supporting initiatives such as "Cycle2Work" or this year's initiative "Walk to Work", promoting flexible working arrangements such as "Work Life Better" and encouraging the use of video and teleconferencing to reduce travel requirements, thus reducing our carbon footprint.

MS Amlin's research team has also developed an internal website where all employees have a single point of access to information on the latest model and catastrophe theories. The site is regularly updated with internal and external research papers, articles and projects, many covering climate specific topics and employees have the option to set up alerts for when new content is added.

MS Amlin's Charity Committee is supporting ShelterBox, a charity that delivers emergency shelter in the form of material and toolkits to families devastated by natural disasters. This form of activity aims to raise awareness of the impacts of climate change and engage employees to help with the consequences of climate change via donating or fundraising. There are current discussions on how volunteering opportunities could be implemented at MS Amlin as means to increase awareness of the impact of climate change on the severity of catastrophes and human lives, whilst also giving back to the society.

In 2018, the Bermuda charity committee sponsored students who participated in the Bermuda Institute of Ocean Sciences (BIOS) summer courses for Coral Reef Ecology (CRE) and Modern Observational Oceanography (MOO). The CRE course enhanced the students' scientific understanding of coral reefs as they were able to take part in lectures, laboratory experiments and underwater surveys using innovative methodologies and procedures under BIOS Faculty guidance in order to hone their skills in problem solving communication and collaboration which are vital to gathering reliable scientific data. The MOO course introduced students to a better understanding of natural and anthropogenic variability through practical oceanographic and atmospheric research. Through laboratory training, lectures and field work students gained a better understanding of the natural processes that drive the marine environment. Guided by BIOS Faculty Members they could observe unique procedures of data collection aboard the RIV Atlantic Explorer. They also engaged in hands-on experience in the deployment and retrieval of Automated Underwater Vehicles (Gliders) and learned how to utilize the tools required to solve the kinds of observational research questions that face oceanographers in carbon and nutrient cycling, ocean acidification, air-sea instrumentation and biological production in the ocean.

MS Amlin encourages teams to engage directly with local projects that offer activities benefitting the environment. In May 2019, MS Amlin's Antwerp office collaborated with Natuurpunt, the largest Belgian nature conservation organisation, to offer a sustainable team building initiative. Natuurpunt unites citizens who want to stand up for nature and biodiversity, with their long term goal being to protect important habitats, species and landscapes. MS Amlin employees spent the day helping to construct a footpath and children's play area, whilst learning how human demand can be balanced with nature.

Evidence also applies to principle(s): 4.3

Source: MS Amlin

Lloyd's / The Market / QBE / Employee climate change engagement

In 2018, the Group Sustainability function engaged directly with teams across the business to raise awareness of sustainability, including climate change. We also published a range of intranet articles and created dedicated internal Yammer groups to provide frequent updates on sustainability trends, insights and news for our international business. In addition, we invited several external speakers to present at lunch-and-learn sessions on a range of sustainability topics.

Other engagement mechanisms employed include:

- Employee engagement survey (e.g. QBE Voice);
- Roadshows, meetings and events;
- QBE Ethics Hotline;
- Employee focus groups; and
- The annual Sustainability Report

In partnership with Earthwatch Institute, we sent one employee from our Australian & New Zealand Operations on a Wildlife of Australia's Rainforests expedition to help investigate the effects of climate change on these rainforests. This provided first-hand experience of both the macro and micro impacts of climate change on our ecosystems. In 2019, we plan on partnering with Earthwatch again to provide similar opportunities to employees across our divisions.

Investment team

New training sessions by our Responsible Investments team are strengthening the ESG knowledge and skills of the broader Investments team. Subjects in 2018 included climate change, and long-term social and economic trends. With more training and development sessions scheduled, we will continue to educate our employees on the importance and relevance of ESG issues to investments decisions.

QBE EO

QBE EO Quarterly Environmental Reports, listing a range of environmental metrics including GHG emissions, are posted on our intranet for our employees. The reports are also submitted to QBE Group, where the environmental KPI data is aggregated and consolidated with comparable data from other regions for reporting via the Company's online Annual Report.

Evidence also applies to principle(s): 1.2

Source: QBE Sustainability Report (p.18, 22-25).

Lloyd's / The Market / Tokio Marine Kiln / Employees engagement

Tokio Marine Kiln 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 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.

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 10,550 hectares (equivalent to approximately 30 times the area of Central Park in New York) 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, employees volunteer to run in raising funding for orphans in the country to rebuild their lives after the civil war. In 2019, total funding raised was £10,300 for this charity.

In 2017, TMK began a new global charity partnership with Water Aid which continued into this year. This includes a significant donation to their charitable endeavours around the world. In 2017 TMK paid for an employee to visit numerous pieces of work that Water Aid have carried out in Madagascar and had the opportunity to assist in their efforts to alleviate poverty and provide clean sanitation to those in developing countries.

For the first time this year TMK has arranged, as part of a wider commitment to reducing our environmental footprint, to plant 1200 trees in the UK to counteract our carbon dioxide usage levels.The trees are being planted by the Carbon Footprint charity at locations in London and the South East on our behalf. The calculation is based on the tonnage of carbon dioxide we generate as a business. The tree varieties vary from season to season but all the trees are native broad leaf varieties including: Hawthorn, Sessile Oak, Hazel, Downy Birch, Guelder Rose, Field Maple, Rowan, English Oak, Blackthorn, Wild Cherry along with some Common Alder, Crab Apple, Silver Birch, Spindle Bush and Goat Willow.

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.

Source: Tokio Marine Kiln: List of charity donations, Tokio Marine journals available upon request.

5. Inform public policy making

5.1 Promote and actively engage in public debate on climate-related issues and the need for action. Work with policy makers locally, regionally, nationally and internationally to help them develop and maintain an economy that is resilient to climate risk.

Lloyd's / The Corporation of Lloyd's

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.

Over the reporting year there have been a range of examples. A selection have been included below to reflect the extensive activity that has occurred.

- In August 2018, an Op Ed by Bruce Carnegie-Brown featured in the Telegraph Business section about climate change and insurance.[j]
- In October 2018, Bruce Carnegie-Brown spoke on Bloomberg radio about climate change and insurance.[k]
- An engagement campaign continues to run on the City Risk Index, through a series of news stories that look at providing further context and insights to the risks raised. Over the reporting year, the following articles have been released, which talk about climate-related impacts and the need for action. Examples include:
  - January 2019: Counting the human cost of polluted cities[l]: Around 7m people die every year from exposure to fine particles in polluted air that penetrate deep into the lungs and cardiovascular system, causing diseases including stroke, heart disease, lung cancer, chronic obstructive pulmonary diseases and respiratory infections, including pneumonia. The main sources of pollution are traffic, household heating, industry and (in port cities) shipping.
  - December 2018: Sinking cities, rising seas: an op-ed by Christian Aid[m]: To coincide with the launch of the Intergovernmental Panel on Climate Change's (IPCC) Special Report on limiting global warming to 1.5ºC above preindustrial levels earlier in October, Christian Aid launched its own report, "Sinking Cities, Rising Seas". In this, we surveyed eight cities from around the world and highlighted that their respective vulnerabilities to sea level rise were not just a function of the changing climate, but also because of the development paths that each has followed.
  - November 2018: Asia faces $134bn insurance gap[n], contributed by Lara Green, Researcher, Market Intelligence, Lloyd's. To enable communities to implement appropriate risk management and insurance strategies it is important to understand the risks they are facing. Lloyd's CRI found that natural catastrophes comprise 54% of the GDP@Risk within APAC cities. Tropical windstorms, with $59.1bn of GDP@Risk each year, are the largest threat. This sum is expected to grow as climate change is likely to lead to more frequent and severe events.

[j] Telegraph Op Ed 'The heat is on and we must deal with $1.8bn cost of rising temperatures' – 18 August 2018

[k] Baystate Business: Climate Change and Insurance (Radio) – 18 October 2018

[l] Counting the human cost of polluted cities

[m] Sinking cities, rising seas with Christian Aid

[n] Asia faces $134bn insurance gap

- October 2018: City flood resilience: an interview with 100 Resilient Cities[o]: Interview with Elizabeth Yee, VP, Resilience Finance, 100 Resilient Cities. The interview set out the importance of cities having a strategic approach to resilience in relation to flooding, best practice, information on other impacts that should be considered, and how financial risk products can help cities contribute towards resilience. Also, in this area, we expect to talk about a new city-based study in the next reporting year.

– November 2018: John Parry, Chief Financial Officer, took part in a CFO Accounting 4 Sustainability conference that was attended by HRH Prince of Wales, and spoke about Lloyd's climate-related disclosure journey.

– Parry also retained his position on the ClimateWise Insurance Advisory Council. This has included reviewing and signing off the 'Physical Risk Framework: Understanding the impact of climate change on real estate lending and investment portfolios' report (principle 3.1, 3.2, 5.1, 5.2).

  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. Terms of reference may be found here.

  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 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).

Evidence also applies to principle(s): 1.1, 1.2, 3.1, 3.2, 5.1, 5.2

Source: The Corporation of Lloyd's

[o] City flood resilience interview with 100 Resilient Cities

Lloyd's / The Market / ArgoGlobal / Interaction with Public/Policymakers

Argo Group has supported establishing 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 Council has overseen the delivery of two projects during the period, specifically, with the subject matters of Transition Risk associated with investment portfolios and physical vulnerability and resilience to flood exposures. The Group Chief Risk Officer represents Argo Group on this Council.

Argo Group, through its ArgoGlobal business segment, continues to take an active role in market-wide initiatives such as 'ClimateWise', for monitoring and discussing climate change issues. During 2018-2019, Argo Group representatives attended a number of 'ClimateWise' events, including the launch of reports including - "Navigating the Transition - Modelling the materiality of transition risk for infrastructure investment portfolios".

ArgoGlobal also supported Lloyd's Innovation Team by providing technical input and materials to produce a report on – "The transition to the low carbon economy – implications for the insurance business".

Argo Group has also organized external events, linked below, to raise awareness within the reinsurance market of the various third-party models and their underlying assumptions and data and, specifically, their application in the context of climate risk/climate change.

– argolimited.com/flood-model-showcase
– argolimited.com/hurricane-model-showcase
– argolimited.com/comparing-flood-maps-risk-insurance

At the 2017 and 2018 New York City ePrix, Argo Group and GEOX DRAGON partnered to fund local STEM programs for local students with a total donation of $20,000 – a demonstration of commitment to fostering sustainability through education and innovation.

This money sponsored two Robotics Teams, supporting them financially as well as encouraging them to get their communities invested in STEM's educational programs. Argo Group believes its investment in STEM students may help lead to positive, innovative change in the insurance and technology space.

By sponsoring a Formula E team and encouraging students to engage with STEM, we're spreading a message about the importance of innovation, teamwork and sustainability across all of our communication channels," said Gary Grose, Argo Group producer management and marketing leader.

Argo is a member of the ClimateWise Insurance Advisory Council (Alex Hindson) since 2016 and ClimateWise Management Committee (Fed Waisman) since 2019.

Limited evidence of influencing policy given company scale.

Source: ArgoGlobal

Lloyd's / The Market / Beazley

We are undertaking various activities, although predominantly focused on the private sector and ways in which insurance can respond to the challenges of climate change. We co-hosted a breakfast briefing at Lloyd's Old Library, entitled 'Climate change: risks and opportunities for the private sector' for our political risk brokers and their clients, and those of our co-hosts, Menas Associates. It addressed the following:

How will climate impacts differ under the 1.5°C and 2°C temperature targets named in the Paris Agreement, compared with our current trajectory? Mitigating and adapting to climate change will require trillions of dollars in infrastructure investment and especially in developing countries. Much must come from the private sector whose efforts are shaped by law and regulation as well as policy. Law-makers, regulators, governments and practitioners will therefore need to work together to support implementation of the Paris Agreement. This level and type of change presents new challenge for global regulators as well as risks and opportunities for the private sector. What types of law and regulation can encourage finance at scale, project pipeline, and corollary benefits of economic and social development in a sustainable way?

Later in the year we will be hosting another briefing on green energy.

We are a founding member of the Lloyd's Disaster Risk Facility, a consortium of Lloyd's syndicates working to address underinsurance and promote resilience in countries vulnerable to natural disasters. In particular we are focused on developing parametric insurance coverage against extreme weather events for communities where demand for cover is not met by traditional insurance. Through this forum we are engaging with governments and organisations around the world to develop insurance solutions, and are also represented at the Insurance Development Forum.

City Resilience is a growing niche supported by the Rockefeller foundation's 100 Resilient Cities charity and Lloyd's, who are using their City Risk Index as a first step in understanding what risks cities face. In 2019, Lloyd's will produce a complimentary report called Maturing Metropolis that we are contributing intellectual hours to that work. The essence of this strand is to educate both cities and insurers on the complexity of city systems, how they interact (positively and negatively), how we can quantify those risks, and how that is changing with the Internet of Things and global warming. Lloyd's and Beazley will join the Climate Mayors monthly call to begin a new discussion building trust and risk mitigation solutions.

We have led an internal sustainability initiative in 2018 – exploring how can we create new products or tweak existing products to incentivise or support better environmental and social outcomes. This will continue in 2019. We have worked with an external consultancy to consider these issues, and are pursuing further some of the product ideas that have emerged, including clean energy generation and storage, clean technology, climate change adaptation, measures to address marine pollution, support for environmental pollinators, and employment practices liability.

Beazley is to take up a committee seat on the Managing Committee of ClimateWise, having previously held a guest seat.

Source: Beazley

Lloyd's / The Market / MS Amlin

Lighthill Risk Network

MS Amlin is a founding member and funder of the Lighthill Risk Network (LRN). The LRN aims to link academia and the insurance industry to fund projects of interest and relevance to its members. Climate change is a key topic for the LRN, given the expected impact of climate change on extreme weather events. A number of LRN sponsored projects have investigated climate change, including a report on the uncertainty in climate model projections. In the last year the network has sponsored research on the flood research needs on the insurance sector, which highlighted climate change as key area for future R&D investment and collaboration between industry and academia (https://lighthillrisknetwork.org/reports/).

Disaster Risk Facility

MS Amlin continues to be a member of The Disaster Risk Facility (DRF) consortium, a group of Lloyd's syndicates that offers insurance and reinsurance capacity against natural catastrophe. The consortium provides access to the collective underwriting expertise of Lloyd's members to help developing economies build resilience to disaster, climate and weather risks.

Key benefits of the facility:

- Up to $445m of capacity on a per risk, per region basis
- Ease of access to the pooled knowledge, expertise and resources of the consortium members
- Local contacts through Lloyd's global platforms

White paper

MS Amlin is working with external agency Quiller to put together a white paper which looks into whether insurers are doing enough to prepare for climate change. In these series of papers we will look into the industry's progress over the last 10 years and to what extent climate change risks are captured in current models. Additionally we will look at whether the insurance industry is behind other industries in preparedness and if so the potential reasons for this.

Insurance Development Forum (IDF)

The IDF is one of the leading insurance industry groups coordinating supporters of the UN Sustainable Development Goals and UN 2030 Agreements. The latter includes Sendai (disaster risk), Paris (climate change), Addis Adaba (finance for development) and Istanbul (humanitarian systems). It has formed five working groups and James Few, Global Managing Director, Reinsurance, is a member of the IMRI working group.

RAA

MS Amlin is a member of The Reinsurance Association of America (RAA), one of the leading trade associations of property and casualty reinsurers doing business in the United States. The RAA is an active advocate for reinsurance interests before state regulators and legislators, who directly regulate the insurance business. At the federal level, the RAA actively lobbies on insurance and reinsurance regulatory issues, engaging in a variety of activities that serve its members and affiliates by representing their collective interests, as well as providing information and analysis to audiences outside the industry.

The RAA plays a fundamental role in assisting individuals and businesses to manage risk and the potential adverse impacts of climate change.

- Working to identify ways in which the insurance sector can meaningfully utilize its risk management expertise to assist society in tackling the impacts of climate change.
- Promoting efforts to mitigate human induced greenhouse gases and to adapt to climate change through risk reduction initiatives.
- Encouraging each of its members to assess the impact of their business operations,

Evidence also applies to principle(s): 5.2

Source: MS Amlin

Lloyd's / The Market / NUAL / Engineering Guidance & Standards – Natural Hazards & Climate Change

Our Chief Risk Engineer is representative on a number Risk and Process Safety related committees both within the London Insurance Market and wider professional bodies. Amongst these is the Hazards Forum, and more recently our Chief Risk Engineer organised a seminar entitled Natural Hazards and the High Hazards Process Industries. This seminar aimed to draw awareness of Natural Hazards and Climate Change related events on the High Hazards Process Industries, and considered three areas:

1. Are Engineering codes of practice keeping pace with reality, and are we building climate change resilience into design.
2. Insurance and the assessment of catastrophe risk, providing an overview as to how (re) insurers have adopted increasing more advanced modelling techniques in regards to information, hazard, vulnerability and financial impact to enhance decision making capabilities .
3. Practical Guidelines for future engineers for optimal design of power and energy infrastructure within the UK against natural hazards, and building in resilience from future climate change.

In regard the third area, our Chief Risk Engineer also acted as peer reviewer for these Guidelines before their publication in November 2018, and these are now available for public access Enabling UK Resilient Infrastructure: Natural Hazard Characterisation Technical Volumes and Case Studies

Evidence also applies to principle(s):

Source: NUAL

Lloyd's / The Market / QBE's climate partnerships for impact

Climate change is a global challenge requiring the collaborative efforts of a range of stakeholders to minimise economic disruption and deliver an orderly transition to a lower carbon economy. We engage in climate-related partnerships for impact, working with government, industry, customers and community groups.

We believe in, and support, the aims and objectives of the **United Nations Sustainable Development Goals (SDGs)** which arose through collaboration between governments, civil society, the private sector and academia. The SDGs seek to address the world's most pressing environmental and social challenges and form part of a wider 2030 Agenda for Sustainable Development. We reviewed all 17 SDGs to understand their relevance to our business and stakeholders and are working to align our sustainability agenda to support advancement of these global goals.

All of the SDGs are relevant to our business in some way. However, we contribute to the achievement of some SDGs more directly than to others. We have therefore chosen to focus our actions on five goals which align most closely to our purpose and strategic business priorities. This is where we can have the greatest impact.

Throughout the 2018 Sustainability Report we have included a range of case studies that show how we have contributed to the SDGs in 2018, an example is provided in the below graphic. Each of our divisions is working to identify further opportunities to support the SDGs we have prioritised in 2019 and beyond.

Throughout the year, QBE representatives have attended and spoken at business roundtables, seminars and events on sustainability. Events included:

- During 2018, QBE representatives participated in the Australian Government's National Resilience Taskforce to develop a framework for financing adaptation and resilience. The Taskforce brought together stakeholders across industry and government, community groups and not-for-profit organisations to collaborate on potential resilience strategies for Australia. This has created a platform for change, discussion and partnership for enhanced resilience in communities.
- In July, we sponsored the UNEP FI Conference on Financing a Resilient and Sustainable Economy. Held in Sydney, the Conference discussed ways to strengthen the banking, insurance and investment sectors' contribution to sustainable development. It featured innovation and market developments across key global financial frameworks and initiatives, including PSI and the Principles for Responsible Investment (PRI).
- Employees across the business attended or contributed at multiple events held by Accounting for Sustainability (A4S). Our Group Head of Sustainability has been an expert panel member since January 2017, and once again QBE attended the 2018 A4S Summit at St James's Palace in London, an invitation-only event hosted by HRH The Prince of Wales.
- In May 2018, we attended the first-ever Ocean Risk Summit in Bermuda. The Summit was organised around the following themes: our changing ocean, managing and reducing ocean risk, building resilience and applied solutions.
- In September 2018, we attended the inaugural Insurance and Climate Risk Americas conference in New York, held during the UN General Assembly Climate Week.

QBE EO

QBE EO participate in industry groups on an ad-hoc basis to provide feedback to regulatory work on climate change where appropriate. For example, QBE EO provided feedback on the PRA consultation paper in relation to enhancing banks' and insurers' approach to managing the financial risks from climate change, via the ABI.

Evidence also applies to principle(s): 1.1, 1.2, 3.1, 3.2, 5.1, 5.2

Source: QBE Sustainability Report 2018 (p.20-21).

Lloyd's / The 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.

The 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 Steering Group (RMSG)

The RMSG 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 RMSG 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 RMSG 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 RMSG proposal to the IDF in September 2016 has been endorsed and the RMSG has been recognised by the IDF as having a central role in the IDF’s priorities on climate and nature hazard resilience.

The key workstreams from the RMSG to date 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 workstreams for the RMSG as referenced above is trying to understand the problem space. This is a continuous programme of research to understand the requirements of discrete groups of non-insurance users in the Disaster Risk Reduction world. The aim is to define how relevant re/insurance catastrophe models might be adapted or developed for use by these groups and 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 workstream 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 RMSG workstreams. The project is geared towards lowering the barrier to risk insights in the developing world. 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 (such as Sri Lanka and Pakistan) and the international community to use of insurance development and disaster risk management.

The IDF has been working with the German Development agency in connection with InsuResilience work initiated by the G7 to help develop risk financing solutions for the Sri Lankan government to help finance recovery following a natural hazard. The Sri Lanka project seeks to improve exposure and claims management of the Sri Lankan National Natural Disaster Insurance Scheme (NNDIS) in an initial stage in 2018. The high-resolution exposure model has been developed using model expertise from within the IDF RMSG member companies and external consultants, with the model recently released onto Simplitium’s ModEx platform. The model, which is the first probabilistic flood model for the country, helps analyze the potential flood losses to the scheme and in doing so provides greater understanding of risk to the international reinsurance market. The RMSG has initiated a short-term consulting project starting in July 2018 to kick this off. Ian Branagan, the Chief Risk Officer for

RenaissanceRe, said the following on the release of the model:

"As part of our support of the IDF, RenaissanceRe is proud to fund development of JBA's Sri Lanka Flood Model, its application to the Sri Lankan National Natural Disaster Insurance Scheme (NNDIS), and its conversion to an open source format on the Oasis platform. One of our founding tenets is improving the understanding of natural hazard risk through robust catastrophe models. We hope our efforts to improve analysis of risks like Sri Lankan floods will help to enhance disaster risk financing and community resilience in low and middle-income countries while lowering barriers to high-quality hazard and risk information." On the subject of supporting the development of open source models Ian added that "it encourages greater ownership of the understanding and management of disaster risk by government agencies, thereby fostering efforts to reduce the natural disaster protection gap."[3]

Disaster Risk Facility

RenaissanceRe is one of the core members of the Disaster 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. The facility has recently written its first risk which is a Hurricane and Earthquake bond issued to the Government of Puerto Rico, with RenaissanceRe playing an integral role in pooling the capacity required.

InsuResilience

RenaissanceRe is a member of InsuResilience which is a global partnership for Climate and Disaster Risk Finance and Insurance Solutions. The vision of the InsuResilience Global Partnership is to strengthen the resilience of developing countries and to protect the lives and livelihoods of poor and vulnerable people from the impacts of disasters by enabling faster, more reliable and cost-effective responses to disasters[4].

RenaissanceRe Risk Sciences Foundation

RenaissanceRe has a dedicated company, RenaissanceRe Risk Sciences Foundation, Inc, which hosts a leadership forum series to engage with various stakeholders on the subject of risk mitigation, with an increased recent focus on climate change. Since the forum series began in 2008, there have been over 4,000 attendees and over 400 speakers and political leaders attend the events hosted by RenaissanceRe.

The latest event was held on the 24th October 2018[5] with insurance industry experts, policymakers, scientists and environmentalists invited to attend the event held in Kansas City, Missouri. The forum convened to discuss community-focused strategies for improving natural disaster resilience and closing the protection coverage gap at the Community Recovery and Resilience Leadership Forum. The forum also covered a number of important issues raised by the rising risks communities across the country face from disasters, including examining the importance of preventative measures to prepare communities for future disasters and keep people safe, as well as exploring how governments and community leaders can collaborate to close the protection gap for earthquake and flood risk, and to advance best practices for risk mitigation and reduction.

The event was attended by individuals such as the President of the Association of Bermuda Insurers and Reinsurers, a Director from the Missouri Department of Insurance, the CEO of the NAIC, the Mayor of the City of Columbia and the CEO of the Insurance Institute for Business & Home Safety[6].

The next event is due is due to take place on the 20th November at Columbia University which is the 14th Risk Mitigation Leadership Forum event. Topics for the day are due to include assessing flood risk, wildfire risk and hurricane risk and how climate change is impacting these respectively, with senior public officials from the State of New York scheduled to attend this meeting.

Source: RenaissanceRe Syndicate Management Limited

Lloyd's / The Market / Tokio Marine Kiln / Social contribution through participation in international initiatives

Tokio Marine Group supports and respects the Universal Declaration of Human Rights, the ILO Core Labour Standards and the OECD Guidelines for Multinational Enterprises. Also, Tokio Marine Group will contribute to the creation of a safe, secure and sustainable future in collaboration with various stakeholders through participation in initiatives beginning with the United Nations Global Compact (UNGC) and the United Nations Environment Programme Finance Initiative (UNEP FI).

In November 2015, The United Nations Office for Disaster Risk Reduction (UNISDR), a strategic framework for disaster risk reduction adopted by United Nations member countries in 2000, launched Private Sector Alliance for Disaster Resilient Societies (ARISE) toward the strengthening and reorganization of the Private Sector Partnership for Disaster Risk Reduction (DRR-PSP) for disaster prevention that Tokio Marine & Nichido joined in 2014. Tokio Marine & Nichido participated as a member of DRR-PSP in the Third United Nations World Conference on Disaster Risk Reduction held in March 2015 in Sendai and sponsored by UNISDR.

Tokio Marine & Nichido contributed to the success of the conference by holding three public forums and operating an exhibition booth in cooperation with Tohoku University and The Geneva Association. In June 2014, Tokio Marine & Nichido participated in the 6th Asian Ministerial Conference on Disaster Risk Reduction, in Bangkok, Thailand, sponsored by UNISDR and the government of Thailand, and in

November 2016 participated in the 7th Asian Ministerial Conference on Disaster Risk Reduction held in New Delhi, India, and sponsored by UNISDR and the government of India. In July 2018, Tokio Marine & Nichido participated in the 2018 Asian Ministerial Conference on Disaster Risk Reduction held in Ulaanbaatar, Mongolia, and sponsored by UNISDR and the government of Mongolia. At these conferences, Tokio Marine & Nichido made presentations on its industry-academia collaboration initiatives as well as on the economic value of mangrove planting.

On March 10, 2017, ARISE Network Japan held a public symposium in Tokyo based on the theme "How businesses meet the challenge of extreme weather events～The challenge of companies toward disaster resilience." Tokio Marine Research Institute held a lecture based on the theme "Modelling flood risks of the Arakawa River valley during global warming under future climate change" and disseminated information that included research outcomes through the promotion of industry-academia collaboration.

The Carbon Disclosure Project (CDP) is an organization that drives an initiative under which the world's principal institutional investors cooperate in calling for companies worldwide to disclose their climate change strategies (risks and opportunities) and greenhouse gas (GHG) emissions. Tokio Marine & Nichido participates every year as a CDP Signatory and is supporting survey research in the areas of corporate-related climate change strategies and GHG emissions as well as energy usage.

The Geneva Association is an insurance industry think tank composed of approximately 80 executives from major insurance companies around the globe. As Vice Chairman of the Geneva Association, Tsuyoshi Nagano, President and Group CEO of Tokio Marine Holdings, leads and supports surveys and research on important insurance industry issues (financial stabilization and regulation, extreme events and climate risk, aging of society, etc.) handled by the association. At the same time, as Joint-Chairman of the "Extreme Events and Climate Risk" working group, he is taking the lead in undertaking surveys and research on climate change and natural disaster risk and disseminating related information to society.

The Financial Stability Board (FSB) is a body that promotes coordination among authorities responsible for responding to vulnerabilities in the financial system and for ensuring the stability of the financial system. Participants include representatives from central banks, financial supervisory authorities and finance ministries from various countries and regions as well as from principal standards establishment entities, the IMF, World Bank, BIS and OECD.

The Task Force on Climate-related Financial Disclosures (TCFD) is entrusted by the FSB to formulate voluntary recommendations for consistent, comparable, reliable, clear and efficient climate-related disclosures by companies in the financial sector and it released its final recommendations in June 2017.

Tokio Marine Holdings is supporting the activities of the TCFD and is working toward policy recommendations for encouraging disclosure that will contribute to the enhancement of investment decisions by engaging in discussions and exchanging opinions with public and private related parties in Japan and overseas.

The Asia-Pacific Financial Forum (APFF), established in April 2013 in response to this situation as a platform for public-private sector cooperation under APEC to promote the further integration and development of financial and capital markets and financial services in the Asia-Pacific region, recognizes disaster risk as one principal issue and has established a review team. In September 2015, the Cebu Action Plan (CAP) was adopted at the Asia-Pacific Economic Cooperation's Finance Ministers Process (FMP).

Within CAP, Disaster Risk Financing and Insurance (DRFI*1, Disaster Risk Financing and Insurance) was declared as a priority issue and the importance of collaboration with the private sector was emphasized. To implement the action issues specified under CAP, the Working Group on Disaster Risk Financial Solutions composed of finance authorities from nine APEC member economies and related international organizations was launched and APFF is participating in discussions as a member.

As part of such initiatives, Tokio Marine & Nichido held the industry-academia collaboration panel discussion "Building a disaster-resilient community in the Asia-Pacific–The power of science and insurance" at the World Bosai Forum in Sendai, Miyagi Prefecture, in November 2017. At this forum, a discussion was held on the ways scientific knowledge is helpful in designing disaster risk financing from the perspective of the Asia-Pacific region and the points of this discussion were reflected in the chairperson's summary at this forum. Meanwhile, APFF participated in the APEC Workshop on Financial Management of Public Assets against Disaster Risks, which was held in June 2018 at the World Bank's Tokyo office and convened practitioners from finance ministries in APEC member economies.

At this workshop, APFF demonstrated actual examples of how risk modelling techniques of insurance companies can be used effectively in disaster risk management for public assets and emphasized the effectiveness of participation by private insurance companies in preparing for public asset disaster risk.

Tokio Marine & Nichido (Masaaki Nagamura, Special General Manager of Corporate Planning Dept.) is participating as a member of APFF and is leading discussions on DRFI within APFF.

Source:
tokiomarinehd.com/en/sustainability/library/pdf/csr2018_web.pdf

5.2 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.

Lloyd's / The Corporation of Lloyd's

Since joining ClimateWise we have produced a number of influential reports ("Adapt or Bust"; "Climate change and security"; "Food system shock"; "Catastrophe Modelling and Climate Change", all available on Lloyd's website) to advance the debate by providing practical context to considerations in the financial services sector (principle 3.1 and 3.2).

Over the reporting year, examples of Corporation led research, include:

- 'Innovative finance for resilient infrastructure' project: Global economic losses from disasters are substantial and growing. They will continue to increase, driven by greater wealth, hazard exposure and, for some events, climate change. More can be done to strengthen resilience and speed-up recovery from disasters, and the Centre for Global Disaster Protection, in partnership with the Corporation of Lloyd's, and assistance from Risk Management Solutions, Vivid Economics and re:focus identifies four innovative financial mechanisms that help monetise the resilience dividend for investors, thereby providing a strong economic case and financial incentive for investing in greater resilience (principle 5.1).
- A world at risk: Lloyd's published its first underinsurance report in 2012. This 2018 version, produced with CEBR, shows there is global underinsurance of $162.5bn in 2018. This shows there is a significant gap between the level of insurance in place to cover global risks, and the actual cost to businesses and governments of rebuilding and recovering from major catastrophes.

  The report includes all the latest non-life underinsurance and insurance penetration data for natural catastrophes for 43 countries across the globe, revealing in detail insurance levels across multiple regions and industries. By understanding the state of global insurance and underinsurance, policy officials, business leaders, communities and insurers can identify where insurance gaps exist and work together to close them. We found that countries with the lowest levels of insurance are among the most exposed to climate change risks and least able to fund recovery. Examples of climate related risks are mentioned throughout the report.
- A new lease of life: The adoption of the Sustainable Development Goals and 2015 Paris Agreement have brought renewed focus on the need for innovation to meet the challenges of sustainable and inclusive development. The scale of the challenges is immense, yet many of them could be met with the application of synthetic biology. Sustainable fuels for aviation and freight are particularly important and challenging, as they are currently difficult or impossible to replace with electric motors using renewable energy.

  Produced with Drs John Heap and Karen Polizzi of Imperial College London, the report is aimed at underwriters, brokers and exposure managers who are or will be exposed to synthetic biology, to encourage them to work with manufacturers to support the responsible development of new technologies and solutions.
- Unearthing opportunity: The shift to a low carbon economy is moving the sector away from thermal coal and other hydrocarbons into materials required for renewable technology such as lithium, cobalt and rare earth elements. Increasing demand for novel metals and minerals, many of which lie in undetermined locations, will require unknown extraction and processing methods.

  This report explores the risks and drivers of current mining trends and assesses the role insurance can play in the managing of mining risks in the interests of supporting human progress towards sustainability. For example, the insurance sector could facilitate collaboration between all mining stakeholders to influence outcomes early in the planning and design phases. This would help insurers design structured and appropriate insurance products that serve the needs of their customers around the drive for sustainability.
- Forthcoming research: In the next reporting year, we expect to report against three more projects that look to explore aspects of climate-related risks and solutions to a low carbon economy:
  - Smart contracts and parametric insurance;
  - A review of developments in renewable energy; and
  - A report looking at class impacts of the transition to a low-carbon economy.

Sharing our research

Climate change is a key issue for everyone, and recent natural disasters show the very real cost that climate change could cause insurers in the future. Lloyd's recognises the effects of climate change and the direct impact on the business community and we are in regular dialogue with insurers, businesses and policy makers to address the challenges of climate change, both for our industry and for the wider world. Examples of this cover the last reporting year include:

- During this reporting cycle Inga Beale and John Neal held Lloyd's position on the IDF steering committee. Staff from across the Corporation of Lloyd's will continue to be involved in supporting this work stream, and work with stakeholders across the IDF is featured throughout reporting as evidence of the Corporation's activities to support the initiative. This includes speeches, research, and work on facilitating product development through partnerships such as the London Centre for Global Disaster Protection with the Department for International Development.
- Following on from previous activities, Angela Kelly, Country Manager for Singapore, has continued to contribute to sustainability and green finance efforts with the Monetary Authority of Singapore, who are looking to draft a localised version of the Guidelines on Sustainable Insurance, similar to the Responsible Finance Guidelines launched by the Association of Banks in Singapore (ABS) last year (principle 3.1).
- In February 2019, Shankar Garigiparthy, Country Manager for India, was invited to speak at a National Insurance Academy event 'International Seminar on Challenges of Climate Risks on Insurance Business – Risk Mitigation and Adaptation Strategies'. Shankar spoke about Lloyd's climate change activities, using the ClimateWise principles as a framework.
- In May 2019, Thomas Haddril, Lloyd's General Representative for Hong Kong, presented an overview of the Corporation of Lloyd's climate-based disclosure journey, to 35 senior insurance supervisors from Asia-Pacific, at a joint meeting of the Financial Stability Institute (FSI) and the Asian Forum of Insurance Regulators and the International Association of Insurance Supervisors.

Government and regulatory engagement

The Corporation believes that it is important that supervisors, insurance undertakings and others in the global insurance market have a good understanding of the nature and scale of the risks arising from climate change and look to provide responses in support of the work occurring globally in this area.

Over the reporting year the Corporation provided responses to the following consultations and roundtables, which are supported by teams across the Corporation:

- August 2018, Australian Prudential Regulatory Authority, Climate-related financial risks survey.
- November 2018: Consultation on Draft Supervisory Statement: Enhancing banks' and insurers' approach to managing the financial risks from Climate Change, Insurers' Roundtable.
- January 2019: Prudential Regulation Authority, CP23/18: Enhancing banks' and insurers' approaches to managing the financial risks from climate change.
- January 2019: Financial Conduct Authority, DP18/08: Climate Change and Green Finance.
- February 2019: The Sustainable Insurance Forum, Survey on Implementation of the Recommendations and Guidance of the Financial Stability Board Task Force on Climate-related Financial Disclosures.
- April 2019: Meeting hosted by Aon with Megan Woods, Minister for Energy, Science and Innovation, New Zealand, to talk about climate change and resilience. This follows on from long-term local activities with the support of Lloyd's New Zealand country manager, Scott Galloway, which has been covered in past reporting.

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

Source: The Corporation of Lloyd's

Lloyd's / The Market / ArgoGlobal / Climate Change Research

Argo Group considers the impact of climate risk in its modelling of risks and exposures for the relevant product lines and insurance coverages that it offers. Argo Group also considers the influence of climate change risk in its relevant underwriting decisions.

The Research and Development team have reviewed the available commercially available models for the US Flood peril for several years and the Perils Committee selected 'KatRisk' as the US Flood model to help inform the Group on the risk to this peril and increase its understanding of the associated exposures. Several features of the Katrisk model resonate well with us including the ability to quantify climate change and its impact to hurricane frequency, wind severity and precipitation and sea level rise.

The KatRisk model has now been adopted and implemented by Argo Group for risk selection, pricing and aggregation purposes. There is a recognition of the impact of increased ambient temperature and ArgoGlobal continues to review its risk appetite for flood risk in certain US zones. Dr. Federico Waisman, SVP-Head of R&D analytics for Argo Group presented a webinar in November 2017, at Lloyd's of London, highlighting different flood models and the challenges associated with model selection and use. Two hundred people attended this event in person and a worldwide audience of circa 500 logins followed this event (https://www.argolimited.com/flood-model-showcase/?locale=en)

While US hurricane risk drives the portfolio, other atmospheric hazard risk is examined for climate change signals in the historical record. Past US wildfire occurrence rates have been tested for non-stationarity during the proprietary model design process. Trends and forecasted climate change and natural climate variability were included in modelling solar irradiance and photovoltaic cell performance in our proprietary Clean Energy models, for example.

The Research and Development team built a North American stochastic wildfire model which is applicable to its US and Canada property re-insurance business. This model was constructed as a reaction to the observed increased frequency of wildfire events that have been experienced over the last few years, with a view to assess the materiality of and price for the peril.

This model which was first released in December 2014 has been calibrated with observed experiences and has considered possible climate change related variables within its calibration. The model has also been updated on an annual basis with review and sign off from the Perils Committee and in particular following the active loss years of 2016 (Fort McMurray, Canada), 2017 (Tubbs, Thomas, Nunn, Atlas fires) and 2018 (Carr, Camp and Woosley fires).

The ARPS model is in use by all divisions within he Argo Group and has been used to price property insurance, reinsurance as well as casualty exposures of utility companies.

Tangible measures	Evidence
R&D team undertakes research and published information on Argo external website including on selection and performance of US flood models and US hurricane models. R&D speaks at and chairs industry forum on modelling and climate risks.	– external website content
R&D team undertakes research and published information on Argo external website including on selection and performance of US flood models and US hurricane models. R&D speaks at and chairs industry forum on modelling and climate risks.	– external website content
Research is used to inform Argo's view of risk and in pricing reinsurance contract. It has informed out risk appetite for California wildfire risks and we have determined we have no appetite for casualty insurance for Californian utilities for example.	– Modelling Business decision analysis Case study on risk appetite produced for S&P

Source: ArgoGlobal

Lloyd’s / The Market / Beazley

We have been working with Lloyd's and Vivid Economics to scope out a new research paper on the Transition to a Low Carbon Economy, to explore the impact of the transition to a low carbon on multiple insurance class of business and raise awareness of risks and opportunities for the Lloyd’s market, and to provide a framework for insurance companies to use in assessing their client portfolios and surfacing the associated carbon related risks.

We are also working with the UK Met Office to consider a research paper on how large infrastructures’ design worldwide have to adequately take climate change projections into account to ensure they are climate proof and thus insurable. The paper would describe how to achieve this with the industry sector by using/applying systematically state-of-the-art climate data and advanced Extreme Value Analysis methods.

Both papers will be applicable to insurers across many lines of business, and will provide insight and analysis into the impact of climate-related themes on insurability – of infrastructure in the case of the Met Office paper, and of multiple economic sectors in the case of the Lloyd’s/Vivid Economics report.

Source: Beazley

Lloyd’s / The Market / MS Amlin / MS Amlin Academic Advisory Panel

The MS Amlin academic advisory panel comprises senior academic researchers with an in-depth knowledge across a number of fields including hydrology, meteorology, climate change, seismology, and engineering. The panel meets 1-2 times per year to provide objective, scientific advice to develop MS Amlin’s internal scientific knowledge and view of risk. MS Amlin also share (re)insurance industry knowledge and research with the academic panel. One of the key topics for discussion by the panel is the impact of climate change on extreme events. High priority topics for discussion by the panel for 2019 are the impact of climate variability on extratropical cycles and hurricane clustering.

Evidence also applies to principle(s): 3.2, 4.4, 5.1

Source: MS Amlin

Lloyd's / The Market / QBE / Research on climate change

In August 2018 QBE group announced its partnership with Jupiter, an emerging leader in predicting and managing climate risk. Jupiter's "ClimateScore" is a comprehensive, cloud-based platform that incorporates environmental factors in an integrated, dynamic model to deliver risk-focused solutions. The platform comprises data that analyses and predicts climate risk from one hour to 50 years in the future. Jupiter currently predicts the probability of extreme weather in select North American cities and the company is steadily expanding to service global markets.

Another example of supporting research and innovation of climate-related issues is QBE's agreement with the Climate Corporation. On March 5th 2019, a platform agreement was announced between Climate Corporation's industry-leading Climate FieldView™ digital agriculture platform and NAU Country Insurance Company, a QBE Insurance Company. The new agreement between Climate and NAU Country enhances the digital reporting capabilities for farmers.

Specific products and services developed by QBE to protect customers' and other stakeholders' interests are discussed in section 6.2 of this report. Additional examples / case studies can be found in the QBE 2018 Sustainability Report.

QBE's Catastrophe Modelling Team, in conjunction with the climate-related physical risk working group, have begun internal research to calculate the potential impact of the severity and frequency of naturals catastrophes increasing in the medium to long-term (6-10+ years), in line with the scientific evidence from the Intergovernmental Panel on Climate Change. This Working Group aims to prioritise the geographies where the risks are most likely to manifest (e.g. hurricane and cyclone regions) and run climate scenarios to assess our exposure. This work will inform future underwriting portfolio optimisation business strategies in relation to climate change exposure.

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

Source: QBE press releases (qbe.com/us/newsroom/press-releases/qbe-partners-with-jupiter-to-take-on); (qbe.com/us/newsroom/press-releases/the-climate-change-corporation).

Lloyd's / The 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."[7]

Jon Paradine is a current member of the International Advisory Board (IAB) for the Institute of Cat Risk Management (ICRM) at Nanyang Technical University in Singapore. The mission of the ICRM is multi-disciplinary research projects in science, engineering, finance, technology, economics and socio-political aspects related to catastrophe risk and to help the community to better understand the fundamental characteristics of risks related to natural and non-traditional disasters such as earthquakes, tsunamis, typhoons, volcanic eruptions, floods, droughts etc.

The IAB comprises of globally leading academics, researchers and representatives from the industry, academia, research organizations and government agencies to guide the ICRM's strategic plans.[8]

Jon Paradine also serves as the Chairman of the ILS alternative risk transfer working group, which is a group comprising of industry experts in the ILS space and has been established by the MAS. The group will continue to advise the

MAS on initiatives that aim to develop Singapore as an ILS hub and to create a framework to allow ILS to provide risk financing solutions in developing and developed countries[9].

WeatherPredict Consulting Inc.

RenaissanceRe through a wholly owned company, WeatherPredict Consulting Inc. seeks to assist in the understanding of natural hazard and evolving risks. The President of this company, Craig Tillman, has set out the mission purpose of the company which is to 'integrate science and technology to deliver meaningful business solutions for our clients. Our advanced scientists leverage their deep expertise to elevate our understanding of loss exposures and gain actionable risk intelligence'.

WeatherPredict engages heavily in research of natural hazards and evolving risks and released a paper in 2018 on understanding the California Wildfire events of 2017. The paper highlighted the impact of climate change and the 'higher propensity for significant wildfire weather conditions' as a result of climate change.

Source: RenaissanceRe Syndicate Management Limited

Lloyd's / The 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 has launched the research on 'Transition Risk Framework'. 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.

Source: Tokio Marine Kiln

6. Support climate awareness amongst our customers/ clients

6.1 Communicate our beliefs and strategy on climate-related issues to our customers/ clients.

Lloyd's / The Corporation of Lloyd's

This document constitutes 'Lloyd's' response to the ClimateWise principle for the period covering 1 July 2018 – 30 June 2019. 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'.

Similar information is also available in the annual report, across Lloyd's.com and social media accounts, and internally to Corporation employees for transparency. This report goes into substantially more detail that can realistically be expected from the other sources.

In the annual report there are mentions of climate change in the following areas: Benefits to Society (p11), sustainability in the External Environment section of the annual report (p12), Lloyd's Key Risks and Risk Appetite (p14) under "Significant regulatory and tax changes", Responsible Business (p19) under operational Green House Gas emissions.

Responsible business strategy

At Lloyd's we see responsible business as encompassing an organisation's social, ethical and environmental issues. The Corporation of Lloyd's responsible business approach underpins our core mission, which is to support global economic growth, enable human progress, and help nations, businesses and communities recover post disaster by paying claims.

Lloyd's wants to be known as a responsible business leader, operating in a way that makes those who work for us feel proud of their contribution to what we do and how we do it. Our programmes focus on four key themes which are integral to Lloyd's and the wider insurance sector.

These are:

– Innovation: See principle 2 and 3 for further details.
– Managing risk: See principle 3 for further details.
– Building resilient communities: See principle 3 for further details.
– Empowering individuals to reach their potential: See principle 4 for further details

As part of the revision of the ClimateWise principles, Michaele Hawkins, Head of Responsible Business, championed a gap analysis across key stakeholders in the organisation who are involved in the Corporation of Lloyd's climate-related activities.

This included members of the strategy, investments, procurement, risk, innovation, and government policy and affairs team. These teams also represent collaboration points into other groups across the business, such as the Environmental Working Group, and the Future At Lloyd's consultation.

Responsible Investment Strategy

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.

The Corporation has a responsible investment strategy that has been communicated publicly. Details are available as part of the annual report, Responsible Business webpages, and in outputs throughout the year, such as regulatory responses and media requests.

The Corporation's investment philosophy focuses on generating long term, sustainable capital growth for Central Fund assets. The approach to responsible investment is built upon three core pillars;

- Protecting the Central Fund assets by considering environmental, social and governance risks;
- Promoting responsible business practices in companies through activities such as corporate engagement and shareholder action; and
- Providing capital to support a sustainable future, through investments in green and social impact bonds and by excluding investments in coal focused companies.

Evidence also applies to principle(s): 6.1

Source: The Corporation of Lloyd's

Lloyd's / The Market / ArgoGlobal

Argo Group maintains a Clean Energy Risk Solutions (CERS) team dedicated to developing and distributing insurance and risk financing solutions related to clean technologies that are intended to reduce the overall carbon footprint.

CERS provides long-term performance and technology insurance products in support of solar power, thermal bioenergy (gasification) and biomass (digester), fuel cell, battery storage and 'smart' energy efficiency applications, among others. For solar, long-term certainty of performance is insured for modules on a stand-alone basis, as well as the entire solar energy delivery system. This enables businesses to position themselves for organizational success by promoting sales, attracting finance lenders/better terms and validating new technologies to the market.

Other examples include conferences organized by Lloyds' and the Work Bank Group on disaster risk financing and the launch meeting for whitepapers 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.

During 2018-2019, Argo Group representatives attended a number of 'ClimateWise' events, including the launch of reports including - "Navigating the Transition - Modelling the materiality of transition risk for infrastructure investment portfolios".

Argo Surety has supported Covanta in terms of providing surety bonds required for the comprehensive refurbishment of a waste-to-energy facility in Pinellas County Florida. The refurbishment work includes approximately $240 million worth of repairs and upgrades and Covanta was required to bond much of this work. Argo supported this undertaking by providing contract surety bonds, which will ultimately protect the tax payers' investment into critical and environmentally friendly infrastructure. This Argo Surety business opportunity was part of an existing relationship with this client, and the refurbishment work ensures that this environmentally sensitive means of disposing of household waste will continue to operate safely and efficiently for many years to come. The Pinellas County Waste to Energy Facility is reducing the volume of waste it receives by 90%, while generating over 500 kilowatt-hours of electricity for each ton of waste processed.

Argo Group continues to incorporate a sustainability focus as an integral part of its corporate sponsorships, by partnering with organizations with strong sustainability credentials. In December 2018, Argo announced a multi-year extension of its sponsorship of GEOX DRAGON, which competes in the Formula E electric street-racing championship.

"Sustainable sports don't exist in large numbers, but two years of success with GEOX DRAGON have proven a perfect match to our corporate sustainability strategy," said Gary Grose, Argo Group producer management and marketing leader. "Focusing on sustainability, as well as innovation and teamwork, is a priority for both GEOX DRAGON and Argo, and this message resonates with our clients and our prospects."

Argo Group has also supported yacht-racing teams including Vestas 11th Hour Racing, which competed in the 2017 – 2018 around-the-world Volvo Ocean Race, and Artemis Racing, which competed in the 2017 America's Cup. Both teams place a strong priority on sustainability in a sport that strives to minimize its impact on the environment.

Tangible measures	Evidence
Syndicate 1910 clean energy business has a very targeted communication to its customer base of the benefits of its products and solutions	– Marketing material external website
No generic or group-wide approach implemented	

Source: ArgoGlobal

Lloyd's / The Market / Beazley

Beazley's 2018 Annual Report was entitled: *Sustaining growth,* the focus being on the continual investment and innovation, and careful risk management, required to ensure continued growth in a competitive landscape. Our responsible business report, *Sustainable growth*, expanded on this theme, highlighting the importance of ensuring that this growth does not come at too high a cost to the societies and the environment in which we operate, and that we play our part in protecting the world around us.

On climate change in particular, we know that the insurance industry has an important role to play in recognising, evaluating and mitigating the risks it poses. Our business and our expertise is in understanding risk. Our interests, and those of our clients and the wider world, are best served through finding ways to reduce it.

The industry is exposed to the risks of climate change through both its assets and its liabilities. It is more than just the self-evident fact that more frequent or more severe extreme weather events will cause direct losses through their physical impacts, and have indirect business implications through their economic and social consequences.

It is also that the scale of the economic transition required to move to a net zero carbon economy, in the global fight to limit these physical impacts, will cut to the core of many of the business models that we have traditionally invested in and insured. Whole new industries and business models will emerge to replace them and will require the mobilisation of capital on an unprecedented scale, while the adaptation that will be needed to build resilience will require new insurance solutions.

At Beazley we have always sought to embrace change, and take a positive and innovative approach to future challenges. Climate change is undeniably one of the world's most serious challenges, and one that can seem overwhelming in the scale of the response required. While we continue to work to understand how our insurance and investment books are likely to be impacted, to manage our exposure effectively and to reduce the carbon intensity of our operations, we are also looking to the future to devise the insurance solutions that will support this transition. We are not under any illusions that this will be an easy exercise, but we will pursue this in line with our commitments to sustaining growth, and to sustainable growth.

We have a prominent Responsible Business section on our website, and include a section in our annual report and accounts. Our Sustainability report 2018 is also available online and in the receptions of our offices.

Source: Beazley

Lloyd's / The Market / Chubb

Chubb is an underwriting company and we strive to emphasize quality of underwriting rather than volume of business or market share. Our underwriting strategy is to manage risk by employing consistent, disciplined pricing and risk selection. This, coupled with writing a number of less cyclical product lines, has helped us develop the flexibility and stability of our business, and has allowed us to maintain a profitable book of business throughout market cycles. Underwriting discipline is at the heart of our operating philosophy.

Chubb uses internal and external data together with sophisticated analytical, catastrophe loss and risk modeling techniques to ensure an appropriate understanding of risk, including diversification and correlation effects, across different product lines and territories. We recognize that climate changes and weather patterns are integral to our underwriting process and we continually adjust our process to address these changes. This is intended to help to ensure that losses are contained within our risk tolerance and appetite for individual product lines, businesses and Chubb as a whole.

Evan Greenberg, Chairman and CEO of Chubb, commented further in his 2018 letter to shareholders on how climate change is integrated into underwriting: "As an underwriting company, our job is to understand, structure and assume climate change-related risk for a fair price, and only do so to the extent of our balance sheet wherewithal and our ability to spread the risk to third-party capital. Our approach to underwriting is fact-based and relies on both our own experience and scientific expertise, and that of the expert network we engage outside our organization. Climate risk is complex and requires a deep and evolving understanding of the physical processes causing weather extremes. These tools are improving and are providing better insights to aid in how we think about these perils, but much remains unknown. For example, what were traditionally non-modeled risks can now be better analyzed, but flood models, for instance, are more advanced than those for wildfire, which remain relatively crude. We also recognize that no matter how good, there is still much basis risk in our conclusions. However, keep in mind that natural catastrophes are a short-tail risk, so losses are understood relatively quickly, and we can in most cases react to what we observe."

As part of its underwriting process, Chubb regularly applies exclusions, which depend on the specific conditions and circumstances of the risk being evaluated. Those exclusions may reflect ESG-related considerations. For example, Chubb is among the world's largest global underwriters of environmental liabilities and pollution risks. However, Chubb's underwriting in this business restricts certain industries, including mining and reclamation operations, oil refining, pipeline and distribution operations and chemical manufacturing and distribution. For more information, visit Chubb's Environmental Insurance and Services section.

Chubb is also a global leader in financial lines insurance, which includes coverages for directors and officers. Chubb's risk selection, along with the pricing and terms and conditions provided to policyholders, often incorporates ESG-related considerations, such as an assessment of the culture of the company, its track record of regulatory and legal compliance, and the policies and procedures in place to manage potential risks.

In addition, Chubb offers specific coverages that address sensitive sectors in the company's insurance underwriting business. Some of these are bespoke coverage, which we do not disclose publicly. Some are for sensitive sectors that we do disclose on the company's website, such as underground storage tanks, which are environmentally sensitive due to the risk of leakage and ground water contamination. Chubb's 2019 Environmental Report provides an overview of the company's environmental products and services.

Chubb also sees opportunity in providing innovative insurance products and risk engineering solutions that are ESG related. For example, Chubb's Clean Tech business provides bespoke insurance solutions to companies that are creating new technology and driving innovation. This global business has dedicated underwriters, risk engineers and claims examiners who specialize in serving clean technology companies. Examples of other industries with unique risk management needs addressed with innovative Chubb products include transportation, long term care facilities and premises pollution liabilities for agricultural businesses. In addition to its product offerings, the company provides a variety of tools, resources and programming to help agents and brokers succeed, including training on environmental risk engineering and loss control techniques.

The centrality of underwriting to Chubb's culture is also evident in the work of the company's Executive Committee, which includes the Chairman and CEO and Chubb's most senior executive leaders. The Executive Committee has responsibility for ensuring that Chubb's ESG and citizenship activities are consistent with the company's culture, values and corporate mission. Chubb's General Counsel is responsible for monitoring ongoing ESG/citizenship activities, reporting periodically to the Nominating and Governance Committee of the Board of Directors on those activities and bringing new ESG/citizenship issues as they arise to the Committee's attention for review and decision, which may involve advocacy or specific corporate action. In addition, Chubb's Chief Culture Officer supports our General Counsel by providing advice in coordinating our communications to ensure cohesive messaging.

Chubb is also distinguished by its industry-leading risk engineering services, which includes more than 400 risk engineers worldwide who help companies anticipate and minimize costly exposures, including those related to ESG. For example, risk engineers bring deep technical knowledge and talent to help companies reduce their exposure to extreme weather events, which are becoming more frequent and severe due to climate change, as well as actions that will reduce the risk of accidents and injuries at construction sites, in factories, etc.

Source: Chubb

Lloyd's / The Market / MS Amlin / Company vision

The MS&AD Group has set a vision of society in 2030 to be "resilient and sustainable." Sustainable growth will be supported through stakeholders by focusing on priority issues with UN Sustainable Development Goals (SDGs) as the milestone. Being part of the MS&AD Group, MS Amlin is committed and contributing towards this vision.

Full details can be found on the environmental pages of the MS&AD Group website and published in the annual sustainability report.

Evidence also applies to principle(s): 7.2

Source: MS Amlin

Lloyd's / The Market / QBE / Communication of our climate change beliefs and strategy

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.

QBE communicates with our customers / clients on climate-related issues are via several reports, including but not limited to:

– Annual Sustainability Report
– Annual Half Year Report
– Annual Full Year Report

In March 2019 QBE released a presentation detailing 'Our approach to climate change' on our external website to update customers and clients on everything we are doing in relation to climate change, including recent achievements and future plans.

We participate in several external reporting and benchmarking initiatives, including but not limited to the ones in the following graphic, further details of some of the initiatives are given overleaf.

Signatory of:

The world's leading proponent of responsible investment. Built around six principles for investing responsibly, the PRI are supported by the United Nations. PRI has more than 2,200 signatories representing more than US$82 trillion in AUM.

A not-for-profit organisation that runs a global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts.

A global partnership between the United Nations Environment Programme (UNEP) and the financial sector. More than 200 institutions, including banks, insurers and investors, work with UNEP to bring about systemic change in finance to support a sustainable world.

The peak industry body representing responsible and ethical investors across Australia and New Zealand. RIAA works to promote a more responsible approach to investment by encouraging more people to actively choose a responsible and ethical option for their savings and investments.

These provide a global framework for the insurance industry to address ESG risks and opportunities. The initiative aims to help strengthen the insurance industry's contribution - as risk managers, risk carriers and investors - to building resilient, inclusive and sustainable communities and economies.

ClimateWise supports the insurance industry to better communicate, disclose and respond to the risks and opportunities of climate change. Representing a global network of leading insurance organisations, ClimateWise helps align members' expertise to directly support society as it responds to climate change.

QBE is a signatory to the Carbon Disclosure Project (CDP), a not-for-profit organisation which runs a global disclosure system that enables companies, investors and other bodies to measure and manage their environmental impacts. Each year the CPD Secretariat issues a questionnaire to the world's largest companies by market capitalisation, to identify the views of company management on climate-related risks and opportunities, governance, strategy and metrics. QBE Group have been reporting, on a voluntarily basis, as part of the CPD since 2010 with our recent submission available on the QBE Group website.

In early 2018, QBE signed the public Statement of Support for the Task Force on Climate-related Financial Disclosures (TCFD) recommendations and we published an action plan in our 2018 Half Year Report to implement the recommendations over a three-year period. The 2018 Full year report describes the progress made during H2 2018 in meeting the commitments of our action plan.

As discussed further in section 4.1, we released our Supplier Sustainability Principles during 2018, outlining our minimum expectations of our suppliers across a range of sustainability issues. This further evidences our commitment to clear communication with stakeholders on climate related issues.

Evidence also applies to principle(s): 3.1, 3.2, 5.1, 5.2, 6.2

Source: 'Our approach to to climate change' presentation, QBE Sustainability Report 2018 (p.8-9).

Lloyd's / The Market / Tokio Marine Kiln / Reporting

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

At Tokio Marine Kiln, we aim to live our Good Company values, and to provide clear leadership and act responsibly in:

- Our marketplace: We believe we are in partnership with our customers, delivering the highest quality service, striving for excellence and behaving with integrity. We work in an industry that can involve significant and extreme catastrophes – it's about doing the right thing at the right time. That is why we are here.
- Our workplace: We take pride in recruiting, retaining and developing proactive, responsive people and we believe in treating them with respect. We are committed to providing an environment that enables you to flourish so that you and your team can best support our clients and benefit our investors.
- Our community: We believe that we should all contribute to the local community. You are encouraged to get involved as much or as little as you please - by making donations to local causes, through volunteering, acting as mentors to young people about to enter the world of work, or taking the lead in supporting a charitable cause. Together we can make a big impact on our community.
- Our environment: We are committed to achieving sustainable business growth together with the development of society and the conservation of the global environment. We believe that we should all behave responsibly by making sensible buying decisions, cutting down on what we consume and making the most of recycling opportunities.

Source: Tokio Marine Kiln

6.2 Inform our customers/ clients of climate-related risk and provide support and tools so that they can assess their own levels of risk.

Lloyd's / The Corporation of Lloyd's

In addition to the thought leadership, market insight reports, and initiatives such as the Lloyd's Lab mentioned in other principles, the Corporation also provided the following information to inform and support policyholders and market stakeholders (principle 3.1, 3.2, 5.1, 5.2, 6.2):

- The Lloyd's City Risk Index, built in collaboration with Cambridge University, is a unique study measuring the impact of 22 threats on 279 cities' projected economic output. The Corporation continues to make the site available and has been further developing resources such as news articles to support awareness of climate-related risks.

  The index reveals that 279 cities across the world – the key engines of global economic growth with a combined gross domestic product (GDP) of $35.4 trillion – risk losing on average $546.5bn in economic output annually (GDP@Risk) from all 22 threats. This comprises $320.1bn to man-made risks and $226.4bn to natural catastrophes.

  The analysis included breakdowns of the different drivers of risks, and climate change was identified and flagged up as a major risk driver that is communicated throughout marketing and communications efforts where relevant, such as the opinion pieces from: Bruce Carnegie-Brown that are referenced in principle 5.1.

  Climate-related risks together account for $123.0bn of GDP@Risk and this sum is expected to grow as extreme weather events become increasingly frequent and severe. The costliest climate events are windstorms which account for $66.3bn of GDP@Risk and flood that puts a further $42.9bn of economic output at risk.

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

  Each post is embedded with tracked links to establish impact to work towards annual KPIs on promoting the Lloyd's value proposition and brand.

- Following its successful use during recent cat events, the Lloyd's market's satellite imagery service, which was developed and supported by the Corporation of Lloyd's Claims team and Lloyd's Market Association, with members of the Lloyd's market, has been enhanced with further developments in the pipeline.

  Using detailed satellite imagery and radar, the service provides managing agents with damage data at an individual property level in the immediate aftermath of a catastrophe. It enables Lloyd's managing agents to assess damage from major claim events far quicker than would have been previously possible.

  The service, supplied by McKenzie Intelligence Service (MIS), has already proved its worth. It was used by Lloyd's managing agents in 2017 to assess damage from hurricanes Harvey, Irma and Maria, as well as the devastating wildfires in California. It was activated again in 2018 for hurricanes Florence and Michael and a series of US wildfires.

  Service usage has increased by 75% since the 2017 hurricane season and all Lloyd's managing agents are now on board. It has proven particularly valuable for wildfires, where underwriters can quickly see if an insured property is a total loss.

- Lloyd's Global Development Centre designs, develops and delivers tailored programmes that promote Lloyd's as the leading specialist (re)insurer.

  The GDC also provides an environment in which business relationships can be formed and developed through interactive sessions, workshops, presentations and networking events with the market and technical specialists serving the (re)insurance sector.

  The GDC provides a platform for the Lloyd's market, giving businesses access to a diverse audience of brokers, risk managers and cedants, supporting the development of Lloyd's business globally. They also showcase the expertise and innovative thinking to be found in the market.

  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, and to share knowledge with Lloyd's customers – whether that is participants in the market for the Corporation, or insureds such as risk managers or internal brokers for the Market:

- October 2018: Autumn World-wide programme
- May 2019: Spring world-wide programme
- June 2019: RIMS Risk Management Academy at Lloyd's

Evidence also applies to principle(s): 3.1, 3.2, 5.1, 5.2, 6.2

Source: The Corporation of Lloyd's

Lloyd's / The Market / Chubb / Chubb Environmental Risk Products and Services

Chubb is one of the largest and most advanced global underwriters of environmental liabilities and pollution risk, with environmental risk units in North America, Europe, Asia and Latin America.

Chubb is 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:

– 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.

In the U.S., we are a leader in meeting the insurance and risk engineering needs of clean technology companies, including renewable and alternative energy providers, manufacturers and software and hardware companies.

Renewable Energy Insurance Solutions

Renewable energy projects remain a major segment for Chubb, particularly in light of the increased global attention on climate change. The projects take many different forms: biomass/biofuel, biogas, energy from waste, fuel cell, as well as solar, wind and hydro energy.

Chubb Renewable Energy Environmental Protection launched in UK and Ireland 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.Construction risks range from delay in start-up to public or employer liability, whereas operational risks range from business interruption to premises pollution.

In 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.

Clean Technology Insurance Solutions

Chubb's Technology Industry Practice has dedicated underwriters, risk engineers and claims examiners who specialise in handling Clean Technology (Cleantech) clients.

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

Cleantech clients face differing exposures through the development, or lifecycle, of their business. Through our Industry Practice Chubb provides bespoke insurance solutions that 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.

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 association and sponsorship;

– The Cleantech Group – Sponsorship of the European Forum 2019 in Stockholm, Sweden.

Environmental Liability Insurance

Chubb's 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.

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.

Green Initiatives

Chubb works with public and private stakeholders worldwide to develop risk transfer and risk management services that allow for innovative responses to the additional risks associated with implementing green initiatives. Chubb's Green Property Insurance policy provides coverage for commercial businesses that desire to rebuild to a "greener" standard in the event of a loss to an existing building. This includes: energy-efficient appliances, electronics, heating and cooling systems, interior plumbing systems and lighting fixtures; low volatile organic compound (VOC) paints, primers, solvents, finishes and adhesives; low emissions carpet and floor coverings; or Forest Stewardship Council (FSC) certified wood. There are also premium credits available to customers that buy "preventative measures" coverage, which provides the policyholder up to a certain amount of money if the insured has certain mitigation features in place. These policies encourage actions from Chubb's customers that help to reduce GHG emissions.

Engineering Services

Chubb Environmental Risk Enginering 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 also receive a full complement of traditional environmental consulting services in the following categories: wastewater management, waste management, air quality management, emergency preparedness and response, reporting, environmental management systems including ISO 14001, as well as sustainability and environmental impact analysis and reduction.

In addition Chubb provides services such as industrial hygiene assessments; regulated and hazardous materials management and remediation oversight; environmental due diligence; and Leadership in Energy and Environmental Design (LEED) and regulatory compliance consultation. Customized Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA) compliance training programs and services are also provided. Programs in asbestos, lead-based paint and microbial management, and water intrusion prevention are also offered.

Furthermore, accredited compliance, staff are available to augment clients' environmental, health and safety personnel at their locations as necessary to meet their health, safety and the environment (HSE) objectives.

Other services include wildfire defense services and infrared camera scans of our personal lines clients' homes to identify areas of improved energy efficiency.

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 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, help preserve their reputation and bottom line. Chubb offers 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.

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%.

Chubb 'Thought Leadership' Publications

Chubb produces a number of publications labelled 'Thought Leadership' throughout the year that are distributed to key clients from industries identified as likely having gaps in their insurance coverage. This distribution happens in several ways: white papers given to brokers, articles written in industry magazines and press releases on Chubb's website.

As an example, Chubb, in partnership with Clyde & Co's, published an article on the potential risks associated with the running of a multinational organisation when considering environmental liability. Chubb also recently published a paper outlining the trends and mitigation measures for European Wildfires. The paper explained the limitations of typical insurance policies, which may not have been a consideration prior to the apparent increase in wildfire occurrence. The paper also explains how Chubb goes the extra mile for our clients, providing real time warnings so that damage can be prevented rather than simply repaired or replaced.

Evidence also applies to principle(s): 3.1, 3.2, 5.2, 6.1

Source: Chubb

Lloyd's / The Market / MS Amlin / Flood Toolkit

Our Risk Engineering team continues to offer a Flood Toolkit to clients. The toolkit features the latest thinking on Flood Risk Assessment, Emergency Planning and Flood Resilience and was developed in conjunction with leading industry experts to assist in creating a flood mitigation strategy for businesses including:

- • Accurately assessing the level of risk from flooding
- • General pre-flood preparation
- • Improving the flood resistance of properties at risk
- • Selecting competent contractors
- • Preparing for a claim
- • Recovering from a flood

Evidence also applies to principle(s): 6.1

Source: MS Amlin

Lloyd's / The Market / NUAL

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.

In this reporting period we have seen a relatively stable oil price, which has boosted confidence in this industry sector. Following the rapid decline in oil price from 2014-16, Operators and Contractors were forced to look critically at operating and capital costs to maintain financial viability, and also prompted merger, acquisition and divestment activity. As such, the industry is arguably in better financial shape to look at new conventional oil and increasing gas exploration opportunities, as well as increasing research and investment into alternative hydrocarbon energy forms. This period has also seen many of our traditional clients in the oil and gas sector rebranding and realigning business strategy to present with a more sustainable offering.

In this sector, Navigators is providing risk transfer solutions by way of insurance coverage for clients active in the exploration of such alternatives, including, 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.

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 geo-hazards.

We have in this reporting period expanded our involvement in the area of geothermal drilling, which in turn supports growth in electrical power derived from geothermal energy, this coming from both existing power producers and new opportunities in developing countries. This form of power production has carbon footprint advantages over many renewable energy sources, and it is not weather dependent like solar or wind power generation. It still however represents <0.5% of global power generation capability, and based on Geothermal Energy Association data, has a current tapped potential that is still under 10%.

We have also considered non-traditional insurance products in the area of Geothermal Drilling, including well production guarantees, seen by some as important to secure efficiently priced investment in this area.

Navigators has over this period continued to work with clients to better understand root causes to recent claims associated with Geothermal Drilling, including more recently well sites overflowed by volcanic lava. We have also worked with Loss Adjusters in this area to better define and differentiate geothermal drilling from conventional oil and gas drilling.

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 producers in developing countries tighten their own fuel and product specifications, for domestic requirements or to ensure they can export fuels into markets such as Europe and North America. In this report period we seen some refinery clients prepare with investment, supported by Navigators, to meet the IMO 2020 regulations which will be introduced with regard to ship emissions from 1 January 2020.

It is noted that with such changes, including IMO 2020, this has resulted in less flexibility within refinery operations, with an increased risk of volatility and larger liability to the insurer, specifically with regard to business interruption.

Navigators have in this period increased insurance coverage (by client number) to the Biofuels sector, specifically bioethanol production in Northern America.

Navigators has over this reporting period increased its role as a significant Contract Leader both in single client and through 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. There has been noted increase in the activity in the last reporting period, as US gas producers have responded to federal desire for increased fuel security and also from reducing drilling and operating costs to be able be economically viable in an environment of more stable but lower gas prices, and as downstream gas processing projects have come on-line.

Power Generation

Navigators continue to support fired 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 emissions.

Our Power portfolio also provides risk transfer opportunities to conventional renewable power generation such as hydro-electric, and also solar, geothermal and some wind when in larger portfolios.

We are also monitoring with interest the increased pressure on Underwriters to reduce provision of coverage for traditional coal burning operators – see also 3.2.

Construction Projects

In the previous reporting period Navigators had chosen to withdraw from the onshore Energy & Power construction insurance market. Whilst we continue to support projects insured prior to mid- 2016, we are writing only limited new business in this area, although given the long duration of major oil, gas, petrochemical and power projects we will continue to provide significant coverage for a few more years.

Environmental Liability

Navigators have in this reporting period continued to develop its international Environmental Liability products, providing financial security against pollution liabilities for site operators and contractors. Coverage is provided either by annual policy or on a standalone project basis, and can cover pollution events of a sudden or gradual nature. Given the broad and changing nature of environmental law, polices are designed to be robust to this, and reflect as necessary the specific marketed area jurisdictions.

Navigators Recycling

In 2018, we reported that one of the more significant ClimateWise related changes had been the incorporation of Solon Underwriting Limited into Navigators, with a view to both business sector growth and ensuring continuity in provision of coverage to the Recycling and Waste Industries, by creating Navigators Recycling, insuring recycling, bio-energy and related businesses in the United Kingdom, the European Union and selected global territories.

Regrettably Navigators decided to cease offering Physical Damage and Business Interruption insurance for Waste Recycling operations towards the end of this reporting period (April 2019), having experienced difficulty in achieving a portfolio of Waste Recycling business with acceptable levels of Risk Management with a critical mass necessary to create a sustainable business within our technical risk division.

It is however noted that Navigators had demonstrated its technical and 'hand-on' approach to risk management by offering risk engineering services as part of the servicing, to support a culture of greater risk awareness within this diverse sector, and provide pragmatic risk engineering advice for mutual benefit. Additionally, formal links had been developed with an industry trade institution, not only for direct commercial benefit, but also to share good risk engineering practice with regards to loss prevention and mitigation in the sector, through education and training or waste management professionals.

Evidence also applies to principle(s):

Source: NUAL

Lloyd's / The Market / QBE /Climate risk related customer support, tools and products

QBE works with clients and business partners to raise awareness of sustainability issues, manage risks and develop solutions. QBE offers events, seminars and publications that help clients and brokers build their risk management knowledge and sustainability awareness and assist customers in addressing sustainability issues through our products and services. Examples of some of the products and services are provided below:

During the year, our Group Innovation and Digital team worked with our Claims teams to deliver solutions to enhance our responses to natural disasters. We used geospatial information to identify many of our customers that were potentially in the path of storms. We then sent them proactive messages expressing our concern for their safety and providing them with their policy number and a link to lodge an online claim, so that if they were impacted, their policy details were at hand without the need for a phone call. We made it easier for our customers to file a claim and has also reduced overall call volumes. After Typhoon Mangkhut, we built a simple rules engine to quickly review a backlog of travel delay claims. The engine helped us decide which could proceed directly to payment so that we could prioritise successfully closing these claims. By leveraging our innovative capabilities, we have been able to make a difference for customers in times of need.

Our Global Risk Solutions Practice is a community of risk engineers, risk management consultants and scientists. Together, they work with our customers on risk profiling and evaluation, accident investigation, business continuity, risk assessment, supply chain analysis, environmental management, client awareness forums and training materials. The team uses technology to proactively engage business owners, making it easy for them to learn about, and plan for, the risks they face. In 2018, we launched a solution targeted at small to medium-sized businesses, honing their focus on risk management, and equipping them with expert knowledge, data and tools.

We have introduced a new mobile offering for selected new clients in Europe to make fleet telematics more accessible. The solution allows clients to reduce risk and fuel use, while encouraging safe-driving behaviours, as well as giving our underwriters the data they need to offer affordable premiums.

We offer a range of solutions that support our customers' transition to a low-carbon economy and manage the risks associated with climate change. In our Asia Pacific Operations, we have expanded our renewable energy portfolio, providing cover for solar farms across Vietnam and Korea. Some are set on floating pontoons in lakes, reservoirs and harbours. Floating solar farms are more efficient than normal farms because of the water's cooling effect, which can make the panels as much as 10% more effective, and limit water from evaporating.

QBE EO

EO work in partnership with GCube, a specialist provider of renewable energy insurance services. GCube helps wind, solar, biomass, wave, tidal, hydro and energy storage asset owners to identify, quantify, mitigate and insure risk efficiently and cost-effectively.

Evidence also applies to principle(s): 3.1, 3.2, 5.1, 5.2, 6.1

Source: QBE Sustainability Report 2018 (p.18, 30).

Lloyd's / The 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 has launched the research on 'Transition Risk Framework". 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. This will inform investment strategies and thinking by supervisory organisation to ensure appropriate risk management steps are taken.

Encouraging our customers to adapt to climate change and reduce gas emissions

Tokio Marine Group undertakes the Green Gift Project for protecting the earth together with its customers as it carries out a variety of environmental protection activities in Japan and overseas through its products and services. We undertake environmental activities in collaboration with NPOs and other organisations. We reduce the use of paper by encouraging customers to choose Web-based insurance contracts (clauses) on our website rather a paper-based contract in brochure form. We donate funds corresponding to a portion of the amount saved through the use of paper to support environmental protection activities in and outside Japan.

TMK continues to migrate products to its One TMK exchange. There are four products available for UK: Cargo 10, Cargo SS, UAS and Construction; and two for the US: Construction and Flood. 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 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. Overall, the use of technology will contribute positively to climate change.

Source: Tokio Marine Kiln

7. Enhance reporting

7.1 Submission against the ClimateWise Principles.

Lloyd's / The Corporation of Lloyd's

This document constitutes 'Lloyd's' response to the ClimateWise principle for the period covering 1 July 2018 – 30 June 2019. 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 publicly – there have been no requests to exclude 'Lloyd's' from responding to any sub-principles, and this response will be publicly available on Lloyds.com/ClimateWise with previous year's responses when the independent report is released.

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

Source: The Corporation of Lloyd's

Lloyd's / The Market / Beazley

"The insurance industry has an important role to play in understanding and evaluating the impacts of climate change, supporting the transition to a low carbon economy and promoting resilience. At Beazley, we are a long-term signatory to ClimateWise and we welcome the recommendations of the TCFD. In particular, we continue to enhance the disclosure of our exposure to the physical, transition and liability risks of climate change and the risks that climate change presents remain an important consideration in our business planning process."

– Adrian Cox, Chief Underwriting Officer

Source: Beazley

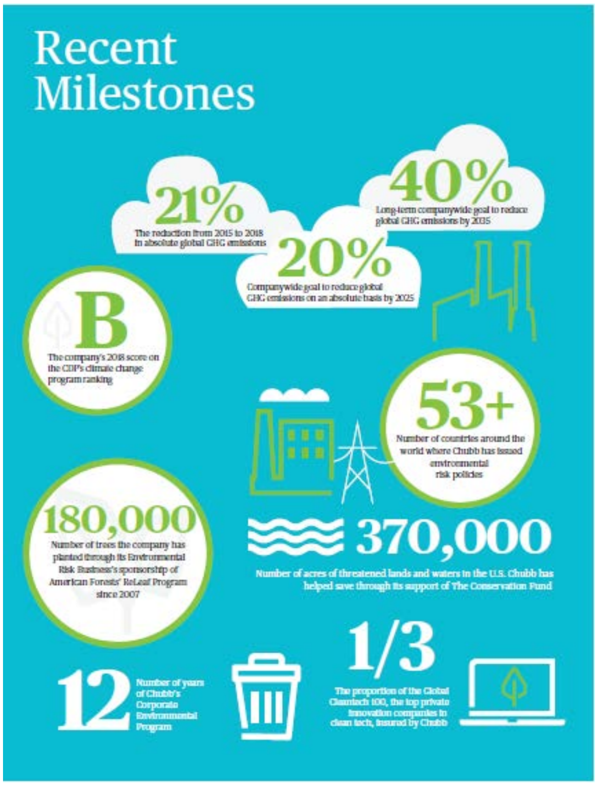
Lloyd's / The Market / Chubb / Chubb Environmental Reporting

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.

Infographic summary of Chubb's global activity in 2018



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 2018, Chubb earned a score of B.

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.

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 to reduce emissions 10% per employee by 2020 from a 2012 base year. From 2015 to 2018, Chubb reduced its global absolute GHG emissions by 21%. A new GHG reduction goal is currently being evaluated.

Chubb 2018 GHG Inventory Data

	2018
Global Absolute Emissions (CO2-	71,488

The data above represent 26,048 metric tons of CO_2-eq. of Scope 1 emissions from fossil fuel combustion, 47,190 metric tons of CO_2-eq. of location-based Scope 2 emissions and 45,440 metric tons of CO_2-eq. of market-based Scope 2 emissions from purchased electricity. Chubb's GHG emissions data are reviewed by a third-party on an annual basis. The company's most recent 2018 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 CDP, an organization that scores carbon emissions information from thousands of corporations on behalf of the global investment community. In 2018, Chubb's response to the questionnaire resulted in a score of B.

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.; Whitehouse Station, NJ; 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.

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 CO2e) 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. The building was re-certified with LEED Gold using LEED Dynamic Plaque in 2019.

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.

Evidence also applies to principle(s): 3.2, 4.1, 4.2, 4.3, 6.1,

Source: Chubb

Lloyd's / The Market / NUAL

Navigators Underwriting Agency Limited (NUAL) are pleased to provide their 2019 ClimateWise report, which covers activity over the period July 2018 to June 2019.

The report details our updated position, as part of the wider Lloyd's community, with regards the six core principles (and sub-principles) which have in this reporting period been updated to align with TCFD (Task Force on Climate-related Financial Disclosure) recommendations, as below:

– Be accountable
– Incorporate climate-related issues into our strategies and investments
– Lead in the identification, understanding and management of climate risk
– Reduce the environmental impact of our business
– Inform public policy making
– Support climate awareness amongst our customers/clients
– We have specifically excluded Principle 7 – Reporting, from our submission.

As with our more recent submissions, we report primarily against our main activity relating to the 2019 Principle 6 (previously 3 – Support climate change awareness amongst customers). Additionally for this reporting period, we are able to show further progress in our submission against Principle 3 (previously 1 – Lead in Risk Analysis), and enhanced our activity in regards to Principle 4 (previously 5 – Reduce the environmental impact of our business). We are also active in Principle 5 (previously 2 – Inform public policy making).

It is noted that in 2019 that TCFD have been in communication with ClimateWise as to members formally supporting the TCFD recommendations. Navigators is not a position to do this currently, and as such our responses to principles 1 & 2 remain under-developed, although alignment with PRA requirements under PS 11/19 & SS 3/19 will add incentive to develop these two principles in the first half of the next reporting period.

It is further noted that Navigators from the 23 May 2019 formally became part of The Hartford, following a 9 month consultation period. Given the recent closing of the acquisition by The Hartford, we are only in an early exploratory stage as to the impact this will have on our approach to ClimateWise. In this regard, we have been deliberately limited in our response as to our future areas of development within each principle, and therefore the report is largely backward looking, and relates to Navigators activity only.

Activity in this period has been focussed largely sustaining and building on historical initiatives, in what continues to be an uncertain time for our clients in the Energy and Power sector. Whilst commodity prices, and more specifically Oil Price has been relatively stable over this period, supply and demand uncertainties, risk of political escalation and possible conflict in key oil producing areas continue to create uncertainty. This is against the back drop of increasing challenges to our clients with regard possible climate change litigation, and the impact, both evolutionary and revolutionary, this has on their own investment decisions. In this regard, Navigators has been keen to be a voice that recognises the need to both innovate and contribute to a low carbon resilient economy whilst supporting traditional clients, promoting an environment of scientific scrutiny, and that the insurance market response to and support for climate change initiatives within the Energy & Power sectors specifically is driven by a 'life-cycle' approach to emissions.

Whilst global peak oil demand remains (according to respected Energy sector analysts) some 15 years away, we do recognise a changing landscape for both the Energy and Power sectors. Near-term changes such as IMO 2020, coupled with a reducing demand in diesel fuel (initially in Europe) and a general reduction in motive-fuel demand driven by air-quality concerns, government legislation and customer choice will see a changing downstream energy landscape in the next 10 years. Combine this with a rapidly changing source environment in the electrical power generation sector sees Navigators continuing to explore opportunities in non-conventional Energy or Energy aligned sectors.

It is noted that due to commercial considerations, a decision was made in 2019 to put our Navigators Recycling into run-off.

Nature has continued to show us in this reporting period its ability to disrupt lives and create human and economic loss. Hurricanes Michael and Florence in the Atlantic, and Typhoons Jebi, Mangkut and Trami all had significant impact, with an estimated loss by MunichRe of US$ 57 bn, of which around 50% was insured, and of these some 25% were considered Climatological.

Evidence also applies to principle(s):

Source: NUAL

Lloyd's / The Market / TMK

Tokio Marine Kiln and the Tokio Marine Group view climate change as one of the top risks facing our industry. The commitment from our Board and senior management is embedded within our culture and corporate values: "To be a Good Company". This is evidenced and formalised in our CSR Charter, CSR reporting and our participation in international organisations which work against climate change.

Source: Tokio Marine Kiln

7.2 Publish a statement as part of our annual reporting detailing the actions that have been taken on these principles.

Lloyd's / The Corporation of Lloyd's

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As with previous years – although this has not previously been reported publicly – there have been no requests to exclude 'Lloyd's' from responding to any sub-principles, and this response will be publicly available on Lloyds.com/ClimateWise with previous year's responses when the independent report is released.

Similar information is also available in the annual report, across Lloyd's.com and social media accounts, and internally to Corporation employees for transparency. This report goes into substantially more detail that can realistically be expected from the other sources.

In the annual report there are mentions of climate change in the following areas: Benefits to Society (p11), sustainability in the External Environment section of the annual report (p12), Lloyd's Key Risks and Risk Appetite (p14) under "Significant regulatory and tax changes", Responsible Business (p19) under operational GHG emissions.

In 2015, 2016, 2017 and 2018, the Corporation of Lloyd's publicly released the score received from the independent reviewers as part of the commitment to communicating climate change action. This has since been repeated by other ClimateWise members, and the Corporation of Lloyd's aims to continue this in 2019 to encourage transparency and a responsible business approach.

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

Source: The Corporation of Lloyd's

Lloyd's / The Market / ArgoGlobal / Public Disclosure

No public disclosure of ClimateWise submission is made directly, only via Lloyd's.

ClimateWise membership is disclosed in Form 10K risk disclosures and reference is made to TCFD.

Source: ArgoGlobal

Lloyd's / The Market / Beazley

Beazley's 2018 Annual Report was entitled: *Sustaining growth,* the focus being on the continual investment and innovation, and careful risk management, required to ensure continued growth in a competitive landscape. Our responsible business report, *Sustainable growth*, expanded on this theme, highlighting the importance of ensuring that this growth does not come at too high a cost to the societies and the environment in which we operate, and that we play our part in protecting the world around us.

On climate change in particular, we know that the insurance industry has an important role to play in recognising, evaluating and mitigating the risks it poses. Our business and our expertise is in understanding risk. Our interests, and those of our clients and the wider world, are best served through finding ways to reduce it.

The industry is exposed to the risks of climate change through both its assets and its liabilities. It is more than just the self-evident fact that more frequent or more severe extreme weather events will cause direct losses through their physical impacts, and have indirect business implications through their economic and social consequences.

It is also that the scale of the economic transition required to move to a net zero carbon economy, in the global fight to limit these physical impacts, will cut to the core of many of the business models that we have traditionally invested in and insured. Whole new industries and business models will emerge to replace them and will require the mobilisation of capital on an unprecedented scale, while the adaptation that will be needed to build resilience will require new insurance solutions.

At Beazley we have always sought to embrace change, and take a positive and innovative approach to future challenges. Climate change is undeniably one of the world's most serious challenges, and one that can seem overwhelming in the scale of the response required. While we continue to work to understand how our insurance and investment books are likely to be impacted, to manage our exposure effectively and to reduce the carbon intensity of our operations, we are also looking to the future to devise the insurance solutions that will support this transition. We are not under any illusions that this will be an easy exercise, but we will pursue this in line with our commitments to sustaining growth, and to sustainable growth.

We submit our ClimateWise report through Lloyd's and make a statement to this effect in our annual report. In 2018 we have also included specific climate risk disclosures within the risk management section of the annual report, and have published a standalone sustainability report detailing our ESG performance.

Source: Beazley

Lloyd's / The Market / QBE

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.

As part of our commitment to PSI and PRI, we produce annual reports to demonstrate how these principles are integrated into our decision making, risk management and investment processes. Although the ClimateWise principles are not explicitly discussed within the annual report, the key elements and themes of the principles are discussed which details progress made against each topic. Further information about how QBE approached sustainability issues more broadly can be found within the 2018 Sustainability Report.

The Lloyd's submission represents the annual statement of ClimateWise activities.

A statement from the Group CEO can be found within the 'Our approach to climate change' presentation, which is available on the QBE website, which demonstrates senior commitment to speaking about the impact of climate change, and the recognition of it as a business concern.

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

Source: QBE Sustainability Report 2018; QBE Annual Report 2018; 'Our approach to climate change' presentation (p.3)(available here: qbe.com/about-qbe/sustainability/climate-change*).*

Lloyd's / The Market / RenaissanceRe Syndicate Management Ltd / Renaissance Re Holdings Ltd. reference to climate change in 2018 Annual Report

Within the RenaissanceRe Holdings Ltd. 2018 Annual Report (page 43) is a section on environmental and climate change matters. This exhibits specific commitment to ClimateWise principle 7.2 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".

Source: RenaissanceRe Syndicate Management Limited.

Lloyd's / The Market / Tokio Marine Kiln / Our commitment to Climate Change

In the insurance world, we continue to see the sharper effects of climate change affecting our customers – with natural catastrophes in the form of hurricanes, wildfires, floods and earthquakes making their presence felt in devastating ways. It is our clear purpose to do all we can to assess those risks, to model them and to provide the insurance cover that entire communities and industries rely on, so they can operate effectively in the face of those perils. As and when any disasters strike, we move in quickly to help people recover, rebuild and re-start their lives.

Outside the confines of our industry, in the wider reported world, we see more and more stories of climate change gathering pace. There is also now a palpable sense amongst many that time is running out for finding and implementing solutions. These solutions will need to work on a truly global scale in what will be an unprecedented collaborative effort.

Our involvement with ClimateWise – founded on a collaboration between leading insurance organisations – becomes therefore ever more relevant as it attempts to close the climate risk protection gap. It allows us to share the totality of our efforts to understand climate change and to provide advice and guidance to those who may be developing the solutions we are all going to need.

Here at TMK, our work across industry initiatives right down to our staff's work with charities and the communities in which we operate, is testament to our belief that by working together to solve problems we are so much stronger and more effective.

As part of the global Tokio Marine Group, we remain committed to playing our part in all the ways we can and to share our knowledge, our time and our resources to improve the world around us. For TMK, doing nothing never was an option.

Charles Franks
Chief Executive Officer, Tokio Marine Kiln

Source: Tokio Marine Kiln

References

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