Climate Risk Disclosure Survey Reporting Year 2022

Governance – narrative

1.Disclose the insurer's governance around climate-related risks and opportunities. In disclosing the insurer's governance around climate-related risks and opportunities insurers should consider including the following:

- Identify and include any publicly stated goals on climate-related risks and opportunities.
- Describe where climate-related disclosure is handled within the insurer's structure, e.g., at a group level, entity level, or a combination. If handled at the group level, describe what activities are undertaken at the company level.

A. Describe the board and/or committee responsible for the oversight of climate-related risks and opportunities.

In describing the position on the board and/or committee responsible for the oversight of managing the climate-related financial risks, insurers should consider including the following:

- Describe the position on the board and/or committee responsible for the oversight of managing the climate-related financial risks.

B. Describe management's role in assessing and managing climate-related risks and opportunities.

Answer:

1.1 Board oversight on climate-related risks and opportunities

1.1.1 plc Board oversight

A description of how the plc Board, and supporting Committees, have oversight of climate-related issues, is set out in the table below. Board members are informed through a combination of Board papers, training and awareness. The corporate governance team support the Chair of the relevant Board/Committee in putting in place a yearly agenda plan and agreeing the agenda for each meeting.

Board/ Committee	Description of how climate-related matters are considered
Plc Board	The plc Board considers climate-related matters as part of the annual process to approve: • the risk framework; • the Group's corporate business plan, including capital adequacy and the own risk and solvency assessment (ORSA); • updates to the Group's Responsible Business Strategy; • the Responsible Investment Policy; • the Investment strategy; • annual report and accounts, including the TCFD report
Beazley plc Audit and Risk Committees	The plc Board has delegated oversight of the risk management framework to the Audit and Risk Committee. Committee responsibilities include overseeing the effectiveness of the risk management framework at Beazley, of which climate-related risk is one element. In 2022, the Committee reviewed the draft TCFD report and accompanying improvement report. A paper providing an update on the development of TCFD reporting was also reviewed. One audit on TCFD reporting was undertaken during the year, for which the audit findings were sent to the Committee for review. On 9 December 2022 The Board approved the proposal to replace the Audit and Risk Committee with a separate Audit Committee and Risk Committee from 1 January 2023.
Beazley plc Nomination Committee	The Committee considers the current and anticipated future needs of the organisation to operate effectively. Given the growing importance of climate change, this is a consideration in assessing candidates for future Board and senior executive positions. The Committee also recommends, for approval by the plc Board, the annual board knowledge and training plan. Climate-related matters can form part of this plan.
Beazley plc Remuneration Committee	This Committee is responsible for ensuring climate-related risk is considered within executive remuneration. Evidence that this occurs is documented within each Executive Director's remuneration scorecard, where climate-related risk matters are considered as part of Beazley's wider approach to ESG. Remuneration is reviewed on an annual basis.

1.1.2 Training and awareness

The culture and people team are responsible for maintaining both board skill matrices and the annual board training plan. To facilitate increased knowledge on climate-related matters, and thus enable The Board to make informed decisions, Board members receive additional training and awareness throughout the year. The scope of this training and awareness is shaped by a combination of emerging trends and market developments, stakeholder expectations, progress against Beazley's Responsible Business Strategy, and regulatory demands. In 2022, The Board received an awareness raising session on Beazley's proposed expected future state scenario. Sessions on the impact the transition to net zero will have on key sectors were included as part of the 2022 Board away day.

1.1.3 Subsidiary Board oversight

Beazley has four key subsidiary entities: Beazley Furlonge Ltd (BFL), Beazley Insurance Designated Activity Company (BIDAC), Beazley Insurance Company, Inc. (BICI), and Beazley America Insurance Company, Inc. (BAIC), each with their own board and supporting committees. The responsibilities of these Boards mirror those set out at a plc Board level, and ensure the subsidiary company is operating in accordance with both legal and regulatory requirements and relevant Beazley Group policies and procedures. These entities are more insurance-risk-focused than the plc Board, and therefore the impact of climate-related risk on underwriting is considered in greater detail at these Boards.

The subsidiary Boards consider climate-related matters as part of the annual process to approve the risk framework and ORSA. Further updates on climate-related matters are also provided throughout the year, via the Responsible Business report.

1.2 Summary of management's role on climate-related matters

1.2.1 Key individuals at Beazley for climate-related issues

At management level, the responsibility for ensuring climate-related issues are managed/assessed is covered by a number of roles across the organisation. In summary these are as follows:

Responsible individual	Summary of engagement
Chief Executive Officer (CEO)	The CEO provides a quarterly update to The Board and Executive Committee summarising discussions at the responsible business steering group. This is contained within the CEO report. The CEO is an Executive Director, and a member of both the plc Board and Executive Committee.
Chief Risk Officer (CRO)	The CRO has responsibility for risk management framework, of which climate-related risk is one part. They provide updates on risk matters (including climate-related risk) to the plc Board, Executive Committee, and Audit and Risk Committee. The CRO is a member of the Executive Committee. The role of senior management function (SMF) for climate-related risk is split within Beazley between the Chief Underwriting Officer (CUO) and Chief Risk Officer (CRO).
Group Finance Director (GFD)	The GFD provides updates on the financial performance of the company (including investments and capital) to The Board, Executive Committee and Audit and Risk Committee. The GFD is an Executive Director, and a member of both the plc Board and Executive Committee.
Chief Underwriting Officer (CUO)	The CUO has responsibility for ensuring climate-related matters are embedded within the underwriting process. The Head of Financial Climate Risk and Head of Exposure Management report into the CUO. The CUO has ownership of the outputs of the Climate Risk Working Group and ESG in Underwriting project. The CUO provides updates on the underwriting performance of the company (including matters arising from climate-related exposures, progress against climate-related risk objectives, and Exposure Management) to the plc Board, Executive Committee, Audit and Risk Committee. The CUO is a member of Executive Committee.
Chief Operating Officer (COO)	The COO has responsibility for business operations, which includes office energy consumption; managing data demands for the business (including the use of data centres); and procurement.
Group Head of Strategy	The Group Head of Strategy has responsibility for overseeing the delivery of Beazley's business strategy. The Head of Incubation and Head of Responsible Business report into this role.
Chief Investment Officer (CIO)	The CIO is responsible for all investment activity within the Beazley Group, including the development of investment strategy, delivery of appropriate investment returns, and the effective management of investment risks. Managing climate risks to our investment portfolio is a key aspect of this role.
Head of Capital	The Head of Capital oversees the assessment of climate-related capital requirements. They do this using modelled and non-modelled information to help determine the impact of climate change on the business. The Head of Capital reports into the Executive Committee and plc Board on a regular basis. The Head of Capital provides updates on a quarterly basis to the plc Board, Audit and Risk Committee and Executive Committee in respect of capital. This includes the allocation of capital to address the potential impacts of climate-related events occurring and Beazley being liable for insurance claims. The Head of Capital provides updates on a quarterly basis to the plc Board, Audit and Risk Committee and Executive Committee in respect of capital. This includes the allocation of capital to address the potential impacts of climate-related events occurring and Beazley being liable for insurance claims.

Responsible individual	Summary of engagement
Head of Responsible Business	The Head of Responsible Business leads on the development and delivery of the objectives set within the Responsible Business Strategy, including those in relation to climate-related responsibility. They also ensure all ESG and climate-related disclosures are delivered in line with regulatory and voluntary requirements. The Head of Responsible Business provides a quarterly update on responsible business matters to the Executive Committee and plc Board. These updates include progress against the objectives and targets set out within the Responsible Business Strategy, climate-related risk, climate-related responsibility, and an overview of items discussed at the responsible business steering group. An annual update is also provided to the Audit and Risk Committee.
Head of Financial Climate Risk	This role was created in 2021 to firstly deliver the CBES return and then to become part of the business as usual approach to managing climate-related financial risk. Their responsibilities include overseeing the day-to-day delivery of embedding climate-related risk into underwriting, coordinating climate risk activities and initiatives across business functions, and providing subject matter expertise to strengthen Beazley's technical capabilities of managing climate risk.
Head of Compliance and compliance department	The Head of Compliance is responsible for overseeing the compliance function at Beazley. This includes ensuring that we conduct business in accordance with all applicable laws and regulations we operate a group-wide compliance framework designed to measure risk exposure, govern decision-making and monitor performance. Our framework consists of a number of systems and controls, including: • Senior management oversight; • Risk assessments; • Staff training and awareness; • Compliance monitoring; and • Compliance reporting. Beazley is mandated to ensure compliance with the following climate-related requirements: • Annual disclosure against the TCFD reporting framework; and • Adherence with SS3/19.
Head of Internal Audit and internal audit department	The Head of Internal Audit is responsible for overseeing a robust audit function within Beazley. From the perspective of climate-related matters, this role holds the responsibility for ensuring appropriate audits are undertaken on underwriting functions, investments and TCFD disclosures.
Head of Exposure Management	The Head of Exposure Management leads the team responsible for developing approaches to monitoring the aggregation of exposure to natural catastrophes. The exposure management team reports to the CUO, who in turn provides regular updates to The Board on these matters. The exposure management team is supported by the Head of Financial Climate risk.

1.2.2 Summary of management-level reporting structure

To help the business address climate-related issues, the roles outlined in 1.2.1 report into a number of different committees, steering groups and working groups. A brief description of these committees, steering groups and working groups is as follows:

Executive Committee

The Executive Committee is responsible for: managing all operational matters of the Group; reviewing the risk management framework; and having oversight of the Group's sub-committees and business functions. The Executive Committee receives updates throughout the year on both climate-related matters and ESG issues. Throughout 2022, and prior to the plc Board for final sign off, the Executive Committee has approved the updates to Beazley's Responsible Business Strategy, its ESG disclosures, and TCFD report. It also reviewed applications to join global sustainability initiatives for the insurance industry such as the Sustainable Market Initiatives (SMI) Terra Carta. In these instances, the matters have been discussed at the Responsible Business Steering Group (RBSG) prior to being submitted to the Executive Committee.

Responsible business steering group

The RBSG oversees the delivery of responsible business across Beazley, monitoring progress against the objectives set out in the responsible business strategy. It provides a forum for strategic matters relating to ESG and climate-related issues to be discussed, and knowledge to be shared. In 2022, agenda items have included: progress updates from the climate risk working group and ESG in underwriting project; reviewing the application to join the NZIA and SMI Terra Carta; reviewing progress against key climate-related KPIs e.g. GHG emissions; and the finalisation of the annual responsible business strategy refresh. The RBSG is chaired by the CEO, and attended by the Chief Risk Officer, Chief Underwriting Officer, Chief Operating Officer, Group Head of Strategy, Head of Responsible Business, Head of Financial Climate Risk, and investment manager responsible for ESG matters. On a quarterly basis, Non-Executive Directors from across the Beazley plc Board and key regulated subsidiaries are also in attendance. This provides a further link between management and the plc Board on climate-related matters.

The RBSG's role is to provide recommendations to the decision-making Committees within Beazley i.e. Executive Committee, Underwriting Committee, Investment Committee. There is often dialogue between the RBSG and these Committees/Boards, which demonstrates that responsible business matters are becoming embedded across the organisation.

Investment Committee

Chaired by the Group Finance Director, this Committee is responsible for overseeing the investment strategy, and ensuring there is a robust framework and appropriate resources to deliver against this strategy. It is also responsible for ensuring investment risk aligns with overall business risk appetite.

To further promote sustainability and climate-related matters, Beazley has a responsible investment policy. This policy sets out how we have incorporated ESG issues into our investment analysis and decision-making process, and our approach to the management of climate change risk within the investment portfolio. The Investment Committee, in conjunction with the RBSG, also oversees progress against the investment-related objectives within the responsible business strategy. Beazley has undertaken to invest up to $100m of its assets in investments with a measurable social and/or environmental impact and the Committee is responsible for reviewing and approving these impact investments.

Underwriting Committee

The Underwriting Committee is responsible for monitoring progress and ensuring the delivery of underwriting, claims and reinsurance business plans. Chaired by the CUO, the Underwriting Committee includes representation from the underwriting teams, the Group Head of Claims, the Group Actuary, Chief Risk Officer, Group Head of Strategy, and Digital Head of Underwriting. Within its remit is a responsibility to ensure ESG, with prominence given to climate risk and opportunities, is implemented as efficiently as possible within underwriting. The Underwriting Committee has ultimate oversight and decision- making power on climate-related risk matters related to underwriting. As a minimum, a quarterly update to the Underwriting Committee is made by the Head of Responsible Business, who summarises key discussions at the RBSG, updates are also provided by the Head of Financial Climate Risk on climate-related risk matters. The Underwriting Committee reports into the Executive Committee on a monthly basis, with the outputs summarised within the Chief Underwriting Officer's report.

Underwriting sub working groups

Feeding into the Underwriting Committee are the following working groups:

Physical damage exposure management group (PDEMG)

This group is responsible for monitoring: the natural catastrophe risk appetite set by the plc Board; the risk appetites assigned to Beazley Group companies, including Beazley plc, BIDAC, BFL and BICI; and the physical damage RDS plan agreed by Lloyd's. The PDEMG reviews, on a monthly basis, the modelled loss output by team and the overall Group total showing utilisation of the plan, and provides challenge where there is a variance to plan. Its remit includes responsibility for the Group view of physical damage

catastrophe risk written within the underwriting teams, and climate change analysis. The PDEMG reports to the Underwriting Committee on a monthly basis.

Casualty and Cyber Management Group (CCMG)

The CCMG has responsibility for the Group view of Cyber and Casualty risk written within the underwriting teams. This includes how climate change can impact the underwriting. The CCMG provides governance for climate litigation scenario development and monitoring. The CCMG reports to the Underwriting Committee on a monthly basis.

Climate risk working group (CRWG)

This group was set up following the delivery of the PRA's CBES return in 2021, to further embed climate-related risk into the underwriting process. The CRWG's work forms part of the climate risk strategy, as approved by the plc Board. In 2022 it has been chaired by the CUO and its membership includes the Head of Exposure Management, the Head of Financial Climate Risk, the Head of Responsible Business, the Lead Pricing Actuary - Property Risks, and underwriting representatives from each of the four divisions. The CRWG meets monthly and oversees and tracks climate risk projects and activities in relation to underwriting risk. The CRWG reports into the Underwriting Committee and RBSG on a quarterly basis.

ESG in underwriting project group

This group was established to oversee the further embedding of ESG matters within underwriting. Its work includes:

- Enhancing data collection within the underwriting process to facilitate the collection of carbon emissions and transition-related information;
- improving data gathering within the underwriting process on ESG matters; and
- enhancing colleagues' knowledge on both ESG and climate-related issues through the delivery of training modules.

This project group reports to the Chief Underwriting Officer, with regular progress updates also provided to the Underwriting Committee and RBSG. its membership includes the Head of Financial Climate Risk, the Head of Responsible Business, and underwriting representatives from each of the four divisions.

Risk and regulatory Committee

The plc Board has delegated executive oversight of the risk management department to the Executive Committee, which in turn has delegated immediate oversight to the Risk and Regulatory Committee, which meets monthly. The roles, responsibilities and oversight of this Committee are further discussed in the risk section.

1.3 Disclosures and public statement on goals related to climate -related matters.

1.3.1 Disclosures

Beazley discloses against the TCFD recommendations on an annual basis. This public disclosure is undertaken at a Plc level, and disclosed within Beazley Plc's annual report and accounts. Beazley's public disclosures are in addition to those disclosures required for the financial regulators Beazley must comply with. Oversight of the final TCFD disclosures is undertaken by the Plc Board, and where appropriate the subsidiary boards.

Alongside Beazley's TCFD disclosures, Beazley also publishes an update on progress against the businesses Responsible Business strategy. This strategy sets out a number of climate-related objectives, a proportion of which are linked to Executive Director remuneration.

1.3.2 Publicly stated goals related Disclosures

As published on Beazley's website, the goals and objectives being delivered against to enhance Beazley's approach towards climate-related matters are as follows:

- Publish our first net zero transition plan;
- Continue to improve pricing adequacy by incorporating climate risk trends in pricing for 3 more material perils;
- Continue to develop climate scenario analysis and embed into business decision making;
- Introduce a climate change conditioned forward looking view of risk for 2 additional material perils;
- Reduce Greenhouse gas emissions by 50%, from 2019 levels, by end of 2023
- Expanding our scope 3 GHG inventory, working with our supply chain to facilitate GHG reporting for our top 10 material suppliers.
- Work to align the investment portfolio with a 1.5 degree pathway by 2028, providing an annual update on progress.

Governance – closed ended questions answered in addition to the narrative

- Does the insurer have publicly stated goals on climate-related risks and opportunities? (Y/N)
- Does your board have a member, members, a committee, or committees responsible for the oversight of managing the climate-related financial risk? (Y/N)
- Does management have a role in assessing climate-related risks and opportunities? (Y/N)
- Does management have a role in managing climate-related risks and opportunities? (Y/N)

Strategy – narrative

2. Disclose the actual and potential impacts of climate-related risks and opportunities on the insurer's businesses, strategy, and financial planning where such information is material.

In disclosing the actual and potential impacts of climate-related risks and opportunities on the insurer's businesses, strategy and financial planning, insurers should consider including the following:

- Describe the steps the insurer has taken to engage key constituencies on the topic of climate risk and resiliency.
- Describe the insurer's plan to assess, reduce, or mitigate its greenhouse gas emissions in its operations or organizations.

A. Describe the climate-related risks and opportunities the insurer has identified over the short, medium, and long term.

In describing the climate-related risks and opportunities the insurer has identified over the short, medium, and longer term, insurers should consider including the following:

- Define short, medium, and long-term, if different than 1-5years as short term, 5-10years as medium term, and 10-30years as long term.

B. Describe the impact of climate-related risks and opportunities on the insurer's business, strategy, and financial planning.

In describing the impact of climate-related risks and opportunities on the insurer's business, strategy, and financial planning, insurers should consider including the following:

- Discuss if and how the insurer provides products or services to support the transition to a low carbon economy or helps customers adapt to climate-related risk.
- Discuss if and how the insurer makes investments to support the transition to a low carbon economy.

C. Describe the resilience of the insurer's strategy, taking into consideration different climate-related scenarios, including a 2 degree Celsius or lower scenario.

Answer:

2.1 Climate-related risks and opportunities

2.1.1 Definitions of time horizons

Beazley considers risk across three broad time horizons for climate-related risks. These time horizons are reflective of Beazley's approach to business planning, the type of products Beazley provides, and the investment decisions the company makes. These time horizons are outlined in the table below, along with a summary of climate-related issues which could potentially have a material financial impact on the company within each timeframe. The summary of climate-related issues is based on a general review of external research and information. A more detailed review of how climate-related risks specifically apply to Beazley over the three time horizons will be developed in 2023.

Time horizon	Description
Short term (1 year)	Beazley's performance is evaluated on the results of each financial year and the business plan is developed on this basis. Most of Beazley's underwriting business is in short-tail classes. The impact of physical climate-related events occurring through the year are reflected in Beazley's approach to underwriting and pricing. Specific climate-related issues arising within this time horizon could include: • liability-related claims relating to greenwashing; • reputational incidents arising from the underwriting of, or investment in, companies which have a significant impact on climate change; • impact of green technology; • failure of Beazley to act as a responsible business on these matters; and • possibility for increased claims arising from natural catastrophes.
Medium term (1 to 5 years)	Some of Beazley's underwriting business is in medium-tail classes, whilst investment in larger projects and platform developments may run over multiple years. Some emerging risks may crystallise over several years. Through the medium term, the issues identified within the short term are likely to persist. The frequency and severity with which acute impacts of natural catastrophes are felt is expected to begin to increase. Liability related claims associated with a failure to prepare or adapt to climate change are expected to increase in severity and likelihood. Transitional issues are also expected to arise over the medium term, whether from policy intervention, market forces, or technology advances. Some of Beazley's strategic objectives are typically set over the medium term to deliver the strategy.
Long term (5+ years)	Beazley's strategy and strategic objectives are generally set over multiple years. Mega trends and slow-moving emerging risks may crystallise over many years. From a climate risk perspective there will be an increased trend in the acute physical climate-related risks, whilst longer term and more chronic impacts may also begin to be realised. From a material financial impact perspective, the issues identified within the short term are likely to persist. The frequency and severity with which acute impacts of natural catastrophes are felt is expected to begin to increase. The chronic impacts of climate change are also expected to begin to feature. Liability claims associated with a failure to prepare or adapt to climate change are expected to increase in severity and likelihood.

2.1.2 Process to identify climate-related risks with a material financial impact

It is acknowledged that climate-related issues are likely to manifest more over the medium and long term. As set out in the table below, Beazley uses a variety of qualitative and quantitative tools to help manage and prioritise our approach to climate-related risks and opportunities. This ensures we can prioritise those with the most material financial impact.

Processes used to identify risks and opportunities	Description
Materiality assessment process (hereafter referred to as the materiality assessment)	Using 2020 written premium and modelled losses, in 2021 Beazley undertook a materiality assessment by country and physical risk peril. The outputs of the materiality assessment determined that the US is the most material geographical location, and the material perils are US tropical cyclone, US inland flood, US wildfire, US severe convective storm, US winter storm, European windstorm, and Japan tropical cyclone.
Scenario analysis	Beazley participated in the CBES Stress Test in 2021, the results of which have been used to inform Beazley's identification of climate-related risks. The outputs of this exercise are discussed later in this disclosure. Beyond the physical peril analysis, climate litigation risk was identified as a material risk to Beazley, given our exposure on specialty risks. Climate litigation risk will continue to be reviewed by a cross-functional team at Beazley. We are engaging with a third-party expert that could assist us with reviewing and challenging our scenario development and analysis, and wider thinking on climate litigation risk
Focus group deep dives	In 2022, Beazley commenced a strategic project to further embed ESG considerations within the underwriting process. To facilitate this, the project engaged with each underwriting focus group, through a series of deep dive workshops, to help identify both the risks and opportunities associated with ESG issues. A number of these opportunities are linked to climate-related issues. The output of this work has informed the project objectives for 2023.
Wider peer and investor engagement	As part of our wider approach to responsible business, Beazley is involved in a number of market initiatives. This engagement enables us to identify emerging workforces and disclosure requirements. This work is also supported by feedback from our investors on ESG matters. The outputs of this correspondence can be found within our responsible business strategy and ESG disclosures.

2.1.3 Process to identify climate-related opportunities with a material financial impact

Beazley has a number of processes to identifying climate-related opportunities with a material financial impact. These processes complement one other, and which ones we use depends on their alignment with existing products and services, the knowledge

required to ascertain the size of the opportunity, and the resources required to deliver the opportunity. In summary, therefore, this means that climate-related opportunities can be identified through the mechanisms described in the following table:

Method of identification	Description
Identified as a result of determining a risk	The methods used to determine a risk also enable identification of an opportunity. The development of an opportunity, where underwriting-related, will be delivered using one of the three processes described below.
Incubation process	The Incubation Underwriting team develops new products that sit outside of existing underwriting team business plan and appetite. New product opportunities are sourced from brokers, InsurTechs, Beazley underwriting teams and internally from within the incubation team itself. When reviewing a new product opportunity, and thus its potential materiality, the Incubation team will consider: the addressable market; buyer urgency; market saturation; product economics; and customer interests. Should the opportunity meet the threshold to pursue further, the incubation team will engage with experts within Beazley before presenting the opportunity to the head of strategy and the underwriting strategy manager. Following feedback from these internal stakeholders, a decision paper is prepared. This is then presented by the Incubation team to the CUO and/or the underwriting committee. Opportunities are launched in pilot periods, typically to maximum aggregate limits, to test the opportunity. If suitably 'proven' in the underwriting pilot, and following approval, the opportunity will be handed over to an existing Beazley team, where suitable. Currently the Incubation team is investigating solutions for the carbon transition. Their work is monitored by the underwriting committee.
Business planning process	Underwriting focus group leads are responsible for developing the annual business plan, in which they may identify an area of business in which to either enter or expand their portfolio. They will document their strategy within their business plan. This could include the type of products/services they will insure, and the size of the market and the opportunity for Beazley. This work is supported by input from specialists. One such example of this approach is the work being undertaken to develop a business plan for renewable energy, with a view to the energy team decarbonising its energy portfolio over the long term. This will align with the metric currently disclosed for the premium generated from low and zero carbon technologies.
Extension to an existing product or service	Due to the specialist nature of Beazley's products and services, there may be several existing products and services which can be used to cover similar risks in new settings. Where this occurs, the relevant underwriting team use their knowledge and expertise to ensure any adjustments to the policy wording are implemented. This work is supported by the product development team.

2.1.4 Summary of risks and opportunities identified

Physical climate-related risks and opportunities

Based on the materiality assessment, the US was determined the most material geographical location in which the Group operates and underwrites. The material perils are US tropical cyclone, US inland flood, US wildfire, US severe convective storm, and US winter storm. Perils not related to the US are European windstorm, and Japan tropical cyclone, which are material to our Property and Treaty underwriting business.

The opportunities related to these areas for Beazley lie, in the first instance, in further developing our understanding of these perils and the impact they may have on the business. By enhancing our understanding of the risk and being able to improve the quantification of this this risk then we will be able to better mitigate the risk. Such mitigation measures may include; better risk selection and pricing; diversification of our underwriting portfolio to avoid any material risk concentration thus optimizing our portfolio to increase underwriting performance; better transfer of the risk through reinsurance; supporting our clients to mitigate climate risk and improve their risk management.

Liability-related climate risks and opportunities

Climate liability risk could be a material risk given Beazley's exposure on speciality risks. We continue evolving our understanding of climate liability risk, and understanding how our policy wording could respond to climate liability scenarios, and engaging with clients to understand the risks better. This risk could also bring products and services opportunities that we will keep exploring.

Transition-related climate risks and opportunities

For Beazley, it is important to support a just transition to a net zero world. Whilst there are risks associated with the transition, opportunities are also available in this area for Beazley. These opportunities include Beazley developing its own transition plan, incubating products which provide coverage for clean/green technology, and supporting our clients as they begin their transition. From an investment perspective, seeking to align our investment portfolio with a 1.5 degree Celsius pathway is important, and work has been undertaken to help establish the current alignment of our investment portfolio.

2.2 Impact of climate-related risks and opportunities on business strategy and financial planning

Our insureds are the most important part of our value chain, in respect of developing long-term value for Beazley. We do not see this value just in being their insurer, but in the partnerships we can create to support our clients as they themselves address climate-related risk. Both Beazley's climate risk strategy, and wider responsible business strategy. help set out how we manage our material climate-related risks and opportunities. A summary of our approach to climate-related matters across our underwriting, investments and operations and how they are helping to inform our strategy is provided in the following section.

2.2.1 Developing Beazley's plan for the transition to net zero

The transition to net zero is an important topic for Beazley, and cuts across our approach to our operations, investments and underwriting. The development of the first iteration of our transition to net zero plan will be completed in 2023, and will form a key part of our strategic approach to ESG and climate-related matters going forward. This plan can be broken down into three key areas:

Underwriting

Beazley is working to understand how best we can support the transition to net zero. This is a complex area, and one which will require a significant amount of work to be undertaken in 2023, before the first iteration of Beazley's transition plan for underwriting can be published.

Operations & Investments

Beazley has also committed to aligning our decarbonisation targets with the Science Based Targets initiative (SBTi). The SBTi methodology is a well established framework by which Beazley can set a credible pathway for the decarbonisation of our operations and investments to near to net zero emissions by 2050. In accordance with the SBTi requirements, the plan will set a number of clear qualitative and quantitative targets, at a maximum of five year intervals, for both the operations and investments.

In brief, for the operations element, this will include the continued decarbonisation of the material GHG emissions generated by Beazley across our Scopes 1, 2 and 3. This plan will build on the GHG reductions the Group has already achieved, as reported within the Metrics section. For our investments, our initial transition plan will cover our approach for the decarbonisation of the relevant asset classes set out within the latest version of the SBTi finance sector guidance. This work will build on the metrics reported in the Metrics section of this report. We will of course, look to expand the reporting of the emissions arising from our investments as and when new guidance is published for asset classes not currently covered within existing methodologies, i.e. sovereign bonds.

For the elements of our transition plan which can be verified by the SBTi, Beazley has set the objective to achieve this verification by the end of 2023.

2.2.2 Climate risk strategy for underwriting

Our climate risk strategy forms the basis for the planning the actions the business will take, in the short term, to further embed climate change into our, business as usual, approaches. The strategy covers four key areas:

- embedding climate risk into underwriting;
- underwriting product opportunities;
- risk mitigation; and
- financial stewardship

Approach to embedding climate risk into underwriting

The CBES stress test conducted in 2021 has moved us forward in the work required to fully embed climate-related matters into underwriting and has triggered a series of key projects and activities, all of which are overseen by the CRWG. A summary of progress is as follows:

Initiative	Summary of progress and plan for 2023
1. Strengthen catastrophe modelling capabilities and develop forward looking view of risk	In 2022, we validated and implemented a US hurricane climate-change-conditioned model for use as our view of risk for 2023. This takes account of the fact that hurricane risk is elevated due to climate change and allows us to develop a forward-looking view of risk. This view of risk for US hurricane is implemented in portfolio management, pricing, and capital setting. We also validated the US wildfire model during 2022 and the model is planned to be implemented in 2023. In 2023, we are working to further review US hurricane climate change impacts including storm surge and tropical cyclone induced flooding to update our view of risk. For US wildfire and inland flood, we will continue evaluating the models and develop a forward-looking view of risk. We will also continue strengthening our modelling approach for other key perils.
2. Develop climate adjusted pricing for key perils	In 2022, we introduced key peril model calibration pricing. We introduced climate loss trends in pricing for US wildfire, US inland flood at the end 2022, and US hurricane in January 2023. In 2023, we are working to review and incorporate other key peril climate loss trends (US hail, US tornado, and US winter storm).
3. Develop underwriting climate change metrics	We developed a climate change metric on US hurricane risk during 2022 to be implemented in January 2023 into our key property pricing tool. This metric has been developed by using a third-party tool that provides climate change projections for a list of physical risk perils. The US hurricane climate change metric was validated and is to be implemented first, given that it is the most material peril. This metric will help underwriters understand future climate change impact in the assessment of their portfolio, which will support underwriting decision-making. At this stage it will not impact the modelled premium as this is already captured in the hurricane adjusted climate loss trends. This metric could also be shared with clients to support client engagement. During 2023, we are working embed this metric into the underwriting process and provide training to underwriting teams to understand uses of this metric and how it can be used in underwriting. Additionally during 2023, we also plan to review and evaluate the third-party climate-change-conditioned data and scores, and develop and incorporate into the pricing tool climate change metrics for other key perils.
4. Portfolio management: develop and implement catastrophe optimisation framework and tools	In 2022, we developed a catastrophe optimisation framework and tool. This framework and tool enables underwriters to optimise the US property risks portfolio using risk appetite metrics and performance metrics. This allows underwriters to manage their portfolios dynamically and make decisions on where we would like to expand or retract our exposure to optimise the overall portfolio. In 2023, we are working to implement this framework and tool and proactively manage the US property risks portfolio using the optimisation tool. We will consider how climate risk can be further incorporated into the framework and tool.
5. Climate litigation: scenario development	In 2022, we have developed an internal realistic disaster scenario on greenwashing to assess and quantify the potential impact of greenwashing and consider actions needed to mitigate this risk.
6. Wording analysis	An analysis of wording was carried out in 2022 to investigate if there were any potential ambiguities of peril coverage in underwriting policies.
7. Development of materiality assessment framework	To enhance our approach to defining material issues, Beazley is working to update its materiality assessment. The materiality assessment framework links materiality of the physical risk perils at present day as well as climate change impacts to the perils in the future. The materiality of the physical risk perils at present day was assessed based on premium, modelled losses, risk aggregation, and claims history. Climate change impacts to the perils in the future was based a thorough scientific literature review for all the material perils.

Underwriting product opportunities

It is important to consider climate risk impact on end-to-end insurance operations that will drive opportunities for new and changes to existing products and propositions. The processes we have in place, as discussed in section 2.1.3, will help facilitate the development of product opportunities.

In 2022, we undertook a review on how Beazley's current and planned product suite applies for industries and sub-industries that are key to carbon transition (i.e. green/clean tech). As part of the review, we gathered information from our underwriting teams on both their appetite and demand for coverage for these industries. There is clearly a demand for products and services for renewable energies (wind, solar, hydro-electric, wave & tidal, geo-thermal, and hydrogen), as well as being demand for green technology (carbon capture & storage, battery technology, recycling) and green services, (green consulting, technical services, green finance).

The exercise also enabled Beazley to identify the challenges to underwriting green/clean tech, which include:

- a lack of available historical data, such as claims performance, creating significant challenges for underwriting and pricing new products; and
- having difficultly in predicting which green technologies will prove most successful, or how quickly they will be adopted.

Risk mitigation services opportunities

We feel it is important to be able to support our clients in better understanding, mitigating and managing their climate risks. This work is to commence in the later part of 2023.

Financial stewardship

In 2023, work is commencing to investigate further how we can best support our clients during their transition to net zero. We wish to support as many of our clients as we can during their transition to net zero. We believe that this can be delivered through a combination of: education on the need for a smooth and just transition; knowledge sharing from the learnings we gain during our own transition journey; and the provision of products and services in this space.

For Beazley, a key part of the transition to net zero is to ensure it occurs in a just manner, and the short term social needs of energy security are balanced against the longer term needs to reach net zero by 2050. At the beginning of 2022, we adopted a policy of not underwriting any new thermal coal, oil tar sands, or arctic energy exploration projects, or businesses which generated more than 5% revenues from these areas. However, in November, due to the ongoing war in Ukraine, it was decided that the exclusion for thermal coal, would be revised. This revision applies only to our Marine and Political Risk underwriting classes, where Beazley is prepared, until June 2024, to insure new clients who are transporting thermal coal from existing coal mines. This approach was adopted in order to support the need for energy security, and the fact that a number of global countries are having to increase their use of thermal coal plants to provide electricity.

Working with brokers

Brokers are a key link between Beazley and our clients and therefore our relationship with our brokers will be central to our response on climate-related matters. We have recently begun working with external analytics teams to enhance our knowledge of the latest research of climate change impacts to physical risk perils, catastrophe models and tools, and climate scenario analysis. This will enhance our ability to model and manage climate risks, and allow us to keep abreast of latest market developments on catastrophe and climate risk analytics.

3. Scenario analysis

3.1 Climate Biennial Exploratory Scenario

In 2021, Beazley took part in the PRA's Climate Biennial Exploratory Scenario (CBES) stress test. The exercise covered modelling of physical, transition and liability (litigation) risk over a 30-year time horizon within three different scenarios – Early Action (EA), Late Action (LA), and No Additional Action (NAA). The scenarios were based on those established by the Network for Greening the Financial System (NGFS), with their key characteristics summarised in the table below:

	Early Action	Late Action	No Additional Action
Physical Risks	Limited	Limited	High
Mean global warming rise by end of scenario (since pre-industrial times)	1.8	1.8	3.3
Mean sea level rise in UK (m)	0.16	0.16	0.39
Transition risks	Medium	High	Limited
Transition begins	2021	2031	n/a
Nature of transition	Early and orderly	Late and disorderly	Only policies that were in place before 2021
Impact on output	Temporarily lower growth	Sudden contraction (recession)	Permanently lower growth and higher uncertainty.

The exercise focussed on both assets and liabilities, taking a view, based on end-of-year 2020 balance sheets, of what might happen depending on future climate-related policies, technological advancements and consumer behaviour to limit greenhouse gas emissions. A quantitative questionnaire also accompanied the qualitative exercise, asking for the disclosure of potential management actions to improve the management and mitigation of climate-related risks.

It was determined that the overall balance sheet impact is material over the long term, particularly in the NAA scenario which sees greater physical and transitional risk. However, in no scenario is Beazley rendered unviable as an organisation.

On physical risk, the biggest impact on loss occurs in the NAA scenario, specifically the US perils (i.e. US windstorm, US inland flood, US wildfire, US severe convective storm, and US winter storm). There is however, a range of reliability of climate data and this leads to significant uncertainty as to the impacts of climate change on individual perils and regions. As a result, the modelling of physical risk triggered a series of further actions on improving catastrophe modelling by developing climate change conditioned view of risk, incorporating climate risk trends for most material perils.

On transition risk, the largest asset portfolio loss occurs in the NAA scenario and the smallest in the EA scenario. The 'balance sheet shock' approach has its limitation, however we continue to decarbonise our investment portfolio.

The climate litigation risk scenarios have been useful to stimulate discussion, raise awareness, and consider timing of impact on industry sectors. The impact on the underwriting portfolio was estimated to be the highest for the greenwashing scenario. This led to development of an internal deterministic greenwashing scenario.

3.2 Post CBES actions

CBES has significantly moved us forward in embedding climate risk into our business and has triggered a number of actions, as discussed previously in section 3.1. From a scenario analysis perspective, our focus in 2022 was to develop a Beazley most likely future state climate scenario, a deterministic greenwashing scenario, and a plan for further scenario development in 2023. Progress on these matters is summarised in the section below.

Likely future state scenario

In 2022, we developed a 'likely future state' scenario which ensures that all areas of the business are aligned in terms of views on likely future scenarios and what 'degree world' we are operating in and planning for. This scenario has been developed to support internal business activities (e.g. view of risk selection, underwriting and pricing decisions, capital investment choices). The scenario is based on NGFS scenarios and the Intergovernmental Panel on Climate Change (IPCC) scenarios. The proposed 'Beazley most likely' scenario parameters are:

- a 3 degree celcius warmer world at 2050;
- a 0.6m sea level rise at 2050; and
- a very late and more aggressive policy transition. Assumes annual emissions do not decrease to 2030.

This corresponds to the NGFS 'Delayed transition' scenario and the IPCC RCP4.5 scenario. We also proposed stressed versions of the scenario, for both physical risk and transition and liability risk. The likely future state scenario will be reviewed on a regularly basis to ensure the continued appropriateness of the parameters.

The 'likely future state' scenario parameters have already been used to decide which view of risk we should take in our US hurricane climate-change-conditioned model, and also when developing climate change metrics for US hurricane for underwriters.

Deterministic climate litigation scenario

Post CBES, we found that one of the climate litigation scenarios merited further investigation internally, and this has resulted in the development of a deterministic greenwashing scenario to assess and quantify the potential impact of greenwashing and consider actions needed to mitigate this risk.

Scenario analysis progress and plan for 2023

On physical risk, we have already assessed the impacts on key perils in our CBES exercise. Recognising the need to continue carrying out such scenario analysis, however, we plan to keep developing short-term, medium-term, and long-term scenarios. We will link these to our business planning and decision making. We plan to link the future likely state scenarios

to individual perils when developing physical risk scenarios. This will enable Beazley to understand what the physical risk impacts would be under future likely state scenario, and the stressed version of the scenario.

On litigation risk, we are working with a third-party partner to review and challenge the way we undertook the CBES litigation scenario, and also our internal climate litigation scenario. This would potentially not only allow us to better understand and assess our climate litigation risk, but also refine/update the scenario and design more scenario(s) if necessary. The internal climate litigation scenario will be monitored on a quarterly basis, where we review the quarterly movement in scenario results linked to climate ligation claims and the risk landscape. This enables us to review the scenario and its use for decision making.

3.3 Climate-related issues and the financial planning process

The outputs from scenario analysis and risk modelling help to determine Beazley's capital allocation for risks. The risk modelling continues to be updated to reflect the latest consensus of scientific opinion. For example, the US hurricane model includes assumptions that are based on climate-conditioned output. The process also informs the amount of reinsurance which needs to be purchased to cover claims arising from climate-related issues. This work is conducted on an annual basis, as part of the business planning process, and ensures Beazley has sufficient capital to cover ongoing claims.

Strategy - closed ended questions answered in addition to the narrative

- Has the insurer taken steps to engage key constituencies on the topic of climate risk and resiliency? (Y/N)
- Does the insurer provide products or services to support the transition to a low carbon economy or help customers adapt to climate risk? (Y/N)
- Does the insurer make investments to support the transition to a low carbon economy? (Y/N)
- Does the insurer have a plan to assess, reduce or mitigate its greenhouse gas emissions in its operations or organizations? (Y/N)

Risk Management - narrative

3. Disclose how the insurer identifies, assesses, and manages climate-related risks. In disclosing how the insurer identifies, assesses, and manages climate-related risks, insurers should consider including the following:

- Describe how the insurer considers the impact of climate related risks on its underwriting portfolio, and how the company is managing its underwriting exposure with respect to physical, transition and liability risk.
- Describe any steps the insurer has taken to encourage policyholders to manage their potential physical and transition climate related risks, if applicable.
- Describe how the insurer has considered the impact of climate-related risks on its investment portfolio, including what investment classes have been considered.
    A. Describe the insurers' processes for identifying and assessing climate-related risks.

In describing the insurers' processes for identifying and assessing climate-related risks, insurers should consider including the following:

- Discuss whether the process includes an assessment of financial implications and how frequently the process is completed.
    B. Describe the insurer's processes for managing climate-related risks.
    C. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the insurer's overall risk management.

In describing how processes for identifying, assessing, and managing climate-related risks are integrated into the insurer's overall risk management, insurers should consider including the following:

- Discuss whether climate-related risks are addressed through the insurer's general enterprise-risk management process or a separate process and how frequently the process is completed.
- Discuss the climate scenarios utilized by the insurer to analyze its underwriting risks, including which risk factors the scenarios consider, what types of scenarios are used, and what timeframes are considered.
- Discuss the climate scenarios utilized by the insurer to analyze risks on its investments, including which risk factors are utilized, what types of scenarios are used, and what timeframes are considered.

Answer:

4. Risk management

4.1 Risk management framework

4.1.1 Overview of Beazley's risk management framework

Beazley's risk management framework establishes our approach to identifying, measuring, mitigating and monitoring the Group's key risks, including climate risk.

4.2 Identification and assessment of climate-related risks

We use the key mechanisms set out below to identify and assess a range of climate-related risks relevant to Beazley, whether that be by geographical location, sector or product line.

Scenario analysis

Scenario analysis includes stressing the scenarios of the first line or developing additional scenarios to consider climate related risks.

Natural catastrophe modelling

Beazley utilises physical damage catastrophe models, such as those created by Moody's proprietary modelling system RMS, to help understand the implications of physical events. The modelling of physical events with a climate-adjusted view, i.e. models that enable us to review potential changes in physical risk as a result of a changing climate, is a discipline in its infancy. The Group has licensed, and validated, the RMS climate-adjusted model for our most material peril and expects to review and validate more climate-adjusted models released in 2023.

The primary purpose of the tool is to gather data from the underwriting portfolio and provide loss-related information about pre-defined events, such as Lloyd's Realistic Disaster Scenarios (RDSs). However, it is also used to assist with determining rate adequacy and as a key input in portfolio management decisions; for example, in terms of diversification and geographical spread.

The modelling enables the impact of climate-related risk to be reviewed from the following perspectives:

- regional variation;
- different climate risk scenarios; and
- different loss perspectives

Beyond this modelling, we also engage with other data and tool providers to review potential changes in physical perils at an individual location level.

Deterministic scenarios

Beazley runs RDSs in order to determine the impact of different risks. The natural catastrophe RDS and climate litigation RDS are run on a regular basis. This modelling process is overseen by the exposure management team, who have developed a complex and emerging underwriting risks protocol. This sets out the activity in place to review potential,complex, and / or emerging risks relating to underwriting. There are approximately 60 Deterministic Realistic Disaster Scenarios (D-RDS) used to monitor the most significant.

These scenarios are either modelled, using data drawn from third-party modelling partners, or non-modelled, where experts across Beazley collaborate to determine the impact. An example of our approach to non-modelled risks is wildfires, an increasingly common event due to the impacts of climate change. The modelling approach, meanwhile takes into account the impact of sector, geography and business segment, in order to determine Beazley's exposure. This helps to determine the relative significance of the climate-related risk in relation to other risks. In turn this informs decision-making across the business.

Climate-related strategic risks

The Board identifies and analyses emerging and strategic risk on an annual basis for discussion at The Board level. In the context of climate-related matters, strategic risks relate to Beazley's approach overall to climate risk and behaving as a responsible business by seeking to minimise our environmental impact. This includes our approach to the transition to net zero, key disclosure requirements, and embedding climate risk and responsibility actions into business as usual approaches.

Strategic risks are also reviewed, twice a year, by the risk team as part of Beazley's risk assessment process. These reviews are a collaborative effort with all the business functions, and are an opportunity to identify emerging risk, review existing risks, and provide appropriate mitigation measures to reduce/manage the risk. This assessment is inward looking and primarily concentrates on operational processes, whilst helping to encourage open dialogue with risk owners. This assessment is also where Beazley's own response to climate change is noted, and the appropriate action to deliver improvements is documented.

Identification of emerging trends and regulatory requirements

Regular scanning of the horizon for emerging trends, regulatory requirements and stakeholder perspectives is undertaken. Key elements which are looked for include:

- Understanding the perspectives of stakeholders, whether they be investors, activists or our employees, through regular dialogue;
- Determining current and emerging legal requirements, whether they be mandated or voluntary. This includes compliance with regulatory demands and legislation. It also extends to voluntary initiatives Beazley is a member of, such as the UN Principles for Sustainable Insurance, or the Net Zero Insurance Alliance; and
- Understanding the evolving reputational risks associated with our activities.

Regular communication on these matters occurs across the teams identified in section 1.2 in order to ensure Beazley's approach to responsible business meets stakeholder expectations. Where necessary, proposals are put to the responsible business steering group for further discussion or clarification and recommendations for any appropriate action. Last year the Group committed to setting a net zero target for 2050.

4.3 Management of climate-related risks

4.3.1 Consideration of climate-related risk within the Risk Management Framework

The classification of climate-related risk has evolved at Beazley. The Board identified it as an emerging risk in 2019 before being reflected under enterprise risk which is a principal risk within the risk framework in 2021. However, enterprise risks including climate-related risks are pervasive and span multiple risk categories and risk owners.

A brief outline of how climate-related matters are reflected in the risk categories wider than enterprise risk, is outlined in the tables below.

Insurance risks

Risk type	Relevance to climate-related matters
Market cycle risks	This is the risk of systematic mispricing of the medium-tailed speciality risks business, which could arise due to a change in the US tort environment, changes to the supply and demand of capital, companies using incomplete data to make decisions. In the context of climate-related matters, liability risks could manifest themselves, especially in relation to accusations of greenwashing. Transitional risk may also play a part in claims arising from market cycle risks. The Group uses a range of techniques to mitigate this risk including sophisticated pricing tools, analysis of macro trends, analysis of claim frequency and the expertise of our experienced underwriters and claims managers.
Natural catastrophe risks events	This is the risk of one or more large events caused by nature affecting several policies and therefore giving rise to multiple losses. Given Beazley's risk profile, such an event could be a hurricane, major windstorm, earthquake or wildfire. This risk is monitored using exposure management techniques to ensure that the risk and reward are appropriate, and that the exposure is not overly concentrated in one area.
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 unanticipated liability risk 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, credit and liquidity risks

Risk type	Relevance to climate-related matters
Risk to earnings	This is a risk of investment loss, in any period, sufficient to impact capital and/or cause reputational damage. Beazley's investment portfolio could suffer detrimental returns following drops in the share prices of investments following a climate-risk-related incident. To mitigate this risk, an approved investment strategy is in place that provides guidance on appetite. In addition, adherence to the investment strategy is monitored through ongoing review, oversight and audit work.
Reinsurance credit risk	In the event material natural catastrophe events, there would be 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 cause a corresponding increase in 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 exercise which considers financial strength ratings, capital metrics, performance metrics and other considerations.
Liquidity risk	There is a risk that losses resulting from unprecedented natural disasters or extreme weather could erode our ability to pay claims in a timely manner, due to unavailability (or not having access to) the necessary financial resources to meet obligations.

Strategic risk

Risk type	Relevance to climate-related matters
Strategic decisions	The Group's performance would be affected in the event of making strategic decisions that do not add value. The Group mitigates this risk through the combination of recommendation and challenge from Non-Executive directors, debate at the Executive Committee and input from the Strategy and Performance Group (a group of 30+ senior individuals from across different disciplines at Beazley). In the context of climate-related matters, this relates to decision making around the transition to net zero across underwriting, investments and our operations.
Communication	Having the right strategy and environment is of little value if the strategy is not communicated internally so that the whole Group is heading in the same direction, or if key external stakeholders are not aware of Beazley's progress against its strategy. Beazley regularly communicates internally and externally on responsible business matters. This is underpinned by the responsible business strategy.
Senior management performance	There is a risk that senior management could be overstretched or could fail to perform, which would have a detrimental impact on the Group's performance. The performance of the senior management team is monitored by the CEO and Culture and People team, and overseen by the Nomination Committee. Climate-related objectives are built into senior management remuneration packages. This ensures progress can be measured and reported against.

Enterprise risk

Risk type	Relevance to climate-related matters
Climate financial risk	This relates to potential financial risks that may result from the physical impact and transition requirements of a changing climate on Beazley's underwriting and investment portfolios. This could be due to systemic mispricing of climate-related exposures, mismanagement of our aggregate exposures, or greater claims costs than expected resulting in financial loss and/or reputational damage. The Group mitigates this in a number of ways, including having a clearly defined and documented underwriting and investment strategy. There is training and guidance on related risks as part of the business planning process. Pricing models are regularly reviewed and updated to include/reflect climate-risk-related information. Exposure management processes are in place, including stress and scenario analysis.
Environmental, social, and governance (ESG)	ESG is the umbrella term for environmental, social and governance factors that are used to measure the sustainability and ethical impact of a business. The risk is that we fall short of the expected standard of ESG in relation to our stakeholders. For example, this could stem from failing to understand and keep pace with ESG related thinking (that continues to gain momentum) and consequently not taking appropriate actions to address Beazley's stance and exposure in those areas. This could result in actual, or a potential, material negative impact and/or reputation of Beazley, arising from an adverse sustainability impact. We mitigate this risk by ensuring there is a clearly defined and documented ESG strategy driven by the executive team, that includes targets and milestones which are communicated to all staff. This is primarily governed via the Responsible Business Steering Group to ensure we take a consistent approach across the Group. Sustainability initiatives are incorporated into the business planning process.
Reputation	Although reputational risk is a consequential risk, i.e. it emerges upon the occurrence of another risk manifesting, it has the potential to have a significant impact on an organisation. Beazley expects its staff to always act honourably by doing the right thing. From a climate-related risk perspective, reputational risk manifests itself in the decisions we make on climate matters. This includes our approach to the transition to net zero, our approach to underwriting and investments, particularly in carbon-intensive sectors, and performance against the objectives we have set within our Responsible Business Strategy.

Operational risk

Risk type	Relevance to climate-related matters
External event	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 interrupted client service in the event of a disaster.
Commercial management	The Group aims to minimise where possible the environmental impact of its business activities and those that arise from the occupation of its office spaces. As we operate in leased office spaces, our ability to directly influence the building's environmental impacts is limited. However, we do choose office space with climate change mitigation in mind, and engage with our employees, vendors and customers in an effort to reduce overall waste and our environmental footprint.
Regulatory and legal	Regulators, investors and other stakeholders are becoming increasingly interested in companies' responses to climate change. Failure to appropriately engage with these stakeholders and provide transparent information could result in the risk of reputational damage or increased scrutiny. The Group regularly monitors the regulatory landscape to ensure that we adhere to any changes in relevant laws and regulations. This includes making any necessary regulatory or statutory filings with regard to climate risk.

4.3.2 Processes for managing climate-related risks

Beazley's risk management philosophy is to balance the risks the business takes on with the associated cost of controlling these risks, whilst also operating within the risk appetite agreed by The Board. In addition, our risk management processes are designed to continuously monitor our risk profile against risk appetite and to exploit opportunities as they arise. As a specialist insurer, a number of classes of business that we underwrite are susceptible to the impact (or potential impact) of climate change. There are broadly four options that we have as an insurance company in relation to these risks: we can accept the risk, avoid the risk, mitigate the risk, or transfer the risk.

Tools to help manage climate-related risks

Beazley employs a variety of tools to help manage climate-related risks. These are as follows:

Tools used	Description of use
Stress and scenario framework	The stress and scenario framework is a key element of the risk management framework, enabling senior management to form an understanding of the vulnerabilities of the business model. There are two levels of stress and scenario tests conducted at Beazley, which ensures there is coverage of the key risks facing us and ownership at the appropriate management level. Single-pillar stress and scenario tests such as RDSs are performed as part of normal business processes, with RDSs for natural catastrophes run on a regular basis in order to determine the impact of different risks. In addition, multi-pillar testing is conducted as part of the Own Risk and Solvency Assessment (ORSA) process, to ensure that tests continue to develop and reflect the evolving risk environment.
Monitoring of aggregation of exposure	The Exposure Management team has the responsibility for developing approaches to monitor the aggregation of exposure to natural catastrophes. Part of this work involves assessing the latest views on climate change and reporting to the business on the impacts any changes could have to the insurance portfolios. The Exposure Management team reports to the Chief Underwriting Officer, who in turn provides regular updates to The Board on these matters. The Exposure Management team is supported by the Head of Financial Climate Risk.
Capital modelling	The Head of Capital provides an update to The Board, using modelled and non-modelled information, to help determine the impact of climate change on the business. An example of this is the internal modelling the capital team undertook to determine the impact of wildfires, which are becoming increasingly prevalent as a result of climate change. They also set out a view on the more material hurricane risk as part of this process.
Risk appetite	On an annual basis, Beazley's risk appetite is reviewed and is informed by outputs from the RDS, capital model, and credit risk assessment, as well as input from the trading teams. This helps guide the trading teams for the following year, before being reviewed against the capacity available. This appetite is agreed and set by The Board, before being tracked by the exposure management team on a monthly basis, who flag up to the business any areas where we are close to the limits the business has set. Capacity is obviously impacted by the number of physical weather events which occur throughout any given year, and therefore the impact of climate change is considered when deciding on risk appetite. During 2022, risk appetite statements and specific Board-level key risk indicators (KRIs) have been developed for climate-related financial risk, which includes investment and underwriting. These are being monitored from 2023 onwards.

Quantitative and qualitative assessment of climate-related risks within the Risk Management Framework

Specific Board-level key risk indicators (KRIs), as set out in the risk appetite statements, are being monitored, as part of the risk management framework from 2023 onwards. They are designed to provide triggers that through monitoring can be addressed through Beazley's governance structure. They set out tolerance levels using red, amber and green ('RAG') ratings to help indicate the extent to which a risk is inside or outside appetite and whether any escalation is required. The climate change-related KRIs will be as follows:

Area of the business	Key Risk Indicator
Underwriting	Phase 1 Climate change in underwriting and pricing objectives met
Investments	Compliance with responsible investment policy and transition risk
Operations	Reduction in carbon emissions for our operations compared to the 2019 baseline of 40% in 2022, and 50% in 2023.

Risk Management – closed ended questions answered in addition to the narrative

- Does the insurer have a process for identifying climate-related risks? (Y/N)
    - If yes, are climate-related risks addressed through the insurer's general enterprise-risk management process? (Y/N)
- Does the insurer have a process for assessing climate-related risks? (Y/N)
    - If yes, does the process include an assessment of financial implications? (Y/N)
- Does the insurer have a process for managing climate-related risks? (Y/N)
- Has the insurer considered the impact of climate-related risks on its underwriting portfolio? (Y/N/Not Applicable)
- Has the insurer taken steps to encourage policyholders to manage their potential climate-related risks? (Y/N)
- Has the insurer considered the impact of climate-related risks on its investment portfolio? (Y/N)
- Has the insurer utilized climate scenarios to analyze their underwriting risk? (Y/N)
- Has the insurer utilized climate scenarios to analyse their investment risk? (Y/N)

Metrics and Targets –narrative

4. Disclose the metrics and targets used to assess and manage relevant collateralized risks and opportunities where such information is material.

In disclosing the metrics and targets used to assess and manage relevant collateralized risks and opportunities where such information is material, insurers should consider including the following:

Discuss how the insurer uses catastrophe modeling to manage the climate-related risks to your business. Please specify for which climate-related risks the insurer uses catastrophe models to assess, if any.

A. Disclose the metrics used by the insurer to assess climate-related risks and opportunities in line with its strategy and risk management process.

In disclosing the metrics used by the insurer to assess climate-related risks and opportunities in line with its strategy and risk management process, insurers should consider including the following:

- In describing the metrics used by the insurer to assess and monitor climate risks, consider the amount of exposure to business lines, sectors, and geographies vulnerable to climate-related physical risks [answer in absolute amounts and percentages if possible], alignment with climate scenarios, [1 in 100 years probable maximum loss, Climate VaR, carbon intensity], and the amount of financed or underwritten carbon emissions)

B. Disclose Scope 1, Scope 2, and if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.

C. Describe the targets used by the insurer to manage climate-related risks and opportunities and performance against targets.

Answer:

5. Metrics

5.1 Enhancing our approach to climate-related matters

The creation of the CRWG in 2022 has enabled the Group to work to begin to enhance our approach to climate-related matters within underwriting. For 2022, there are two quantitative metrics which we can report against as a measure of initial progress.

Number of perils with climate- change- conditioned view of risk

Beazley is investigating the climate change conditioned models in the market and updating our understanding of climate change impact on physical risk perils from dedicated research, in order to develop a forward-looking climate-change-conditioned view of risk. We developed and introduced a climate change conditioned view of risk for US hurricane, our most material peril, in 2022, and plan to develop climate change conditioned view of risk for other key perils in 2023.

2021	2022
0	1 (US hurricane)

Number of perils with climate loss trends introduced into pricing model calibration

Beazley is in the process of incorporating climate trends for key perils into the model calibration for pricing. This is the first step in the process to fully embed climate loss trends for key perils into pricing. In 2022, we reviewed climate loss trends for US hurricane, US wildfire, and US inland flood. These were introduced into the key property pricing tool in December 2022 for US Flood and US Wildfire and January 2023 for US Hurricane. We plan to further embed these perils within pricing, whilst also reviewing and incorporating other key peril climate trends.

2021	2022
0	2 (US wildfire, US inland flood)

5.2 Underwriting

Net Estimate Premium Income arising from low and zero carbon technologies

The sum of net estimated premium income (net EPI) arising from low and zero carbon technologies underwritten in 2021 and 2022 is as outlined in the table below. The scope of inclusion is for estimated insurance premiums written for policies related to energy efficiency and low and net zero carbon technology, including renewable energy insurance, energy savings warranties, and carbon capture and storage insurance).

2021	2022
$4.5m	$8.0m

5.3 Investments

Beazley uses data from Standard & Poor's Market Intelligence Capital IQ pro (S&P CAP IQ pro) to help determine a number of metrics across our investment portfolio.

Total apportioned GHG emissions arising from our investments

This is the total Carbon Emissions apportioned to Beazley's portfolio of publicly listed equities, which are 1.8% of our overall holdings. The value of holdings is $159m. This metric is the starting point for carbon footprinting of our listed equity portfolios. It adopts the equity ownership approach, consistent with the GHG Protocol accounting standard, allocating emissions based on levels on equity ownership (market capitalisation) on an enterprise value including cash (EVIC) basis.

The GHG emissions data is based on Scope 1 and 2 emissions only. Data to complete the calculation has been sourced from S&P CAP IQ pro. The data was reported as at 1st January 2023, and is the first year we have reported this figure. This metric will form part of the suite of metrics Beazley will report on going forward.

	2022
Apportioned GHG emissions (tCO2e) arising from our investments (Publicly listed equities only)	2,359.29

Weighted average carbon intensity (WACI)

The weighted average carbon intensity (WACI) of our corporate bonds and equity portfolios is	2021	2022
WACI (tCO2e/$m sales) arising from our investments (Publicly listed corporate bonds (investment grade and high yield) and publicly listed equities)	75.50	49.92

Temperature alignment of our investment portfolio

The reporting of the temperature alignment of Beazley's portfolio is based on the methodology set out by the S&P Cap IQ. The methodology apportions the value of holdings with regards to the 'under/over 2°C budget' metric which is produced by S&P each year for every company. This is calculated by multiplying the 'under/over 2°C budget' figure by the investor's value of holdings and then dividing this value by the total market capitalisation of that particular company. The individual values are then summed across the entire portfolio in order to either give a negative figure (aligned) or positive figure (misaligned). The scope of the reporting is limited to the GHG emissions arising from our publicly listed corporate bonds (investment grade and high yield) and publicly listed equities. The data was reported as at 1 January 2023. Emissions have been reported for 90.23% of the portfolio. Work continues to source the missing data required to report on the remainder of the portfolio.

The reporting of Beazley's current pathway alignment is the starting point from which future comparisons will be made. Beazley has set an objective to align its investment portfolio with a 1.5 degree Celsius pathway and will continue to work towards this in 2023.

	2022
Current Temperature Pathway Alignment	2-3 degree Celsius

5.4 Beazley's operations

5.4.1 GHG emissions

The Greenhouse gas (GHG) emissions are calculated and in accordance with the Greenhouse Gas Protocol, Corporate Reporting and Accounting Standard including the amended GHG Protocol Scope 2 Guidance, and HM Government, Environmental Reporting Guidelines, using the applicable UK Government's (BEIS) GHG Conversion Factors for Company Reporting unless otherwise indicated. Beazley Group's (hereafter Beazley) GHG emissions are, where possible, calculated using emission factors for '$kgCO_2e$' (i.e. the sum of emission factors for carbon dioxide, methane and nitrous oxide). The full methodology for calculating the GHG emissions is available on Beazley's website. The exceptions to this are:

1. Emissions associated with refrigerants, which are reported as GHG dioxide equivalent (tCO_2e) emissions;
2. GHG emissions for company cars are calculated using information provided on: the yearly mileage agreement, make, model, registration and fuel type. Consumption has been based on the maximum agreed mileage for the car in 2022, as set out in the lease agreement.
3. GHG emissions associated with the Dublin office electricity use are calculated using information reported by the Sustainable Energy Authority of Ireland (SEAI) and reported as gCO_2/kWh (NCV). The $kgCO_2e$ emission figure was calculated by adding BEIS NO_2 and CH_4 emission factors to SEAI's $kgCO_2$ figure.
4. Due to data coverage, US office electricity use and heating energy (Scope 2) are estimated using the office floor area and the 2021 CIBSE Guide F for Energy Benchmarking.
5. US office electricity use (Scope 2) and US grid electricity transmission and distribution (Scope 3) where the Environment Protection Agency (EPA, 2020) EPA US State emission factors are used
6. US office business travel by rental car, personal car, air and rail (Scope 3) where the US Environment Protection Agency (EPA, 2020) emission factors are used.
7. Where emissions factors are not listed by BEIS for the country of hotel stay, then data from the Cornell Hotel Sustainability Benchmarking (CHSB) index is applied
8. Emission figures for electricity used in 'ROW' offices (Barcelona, Dublin, Munich, Montreal and Paris) are country emission factors sourced from Carbonfootprint's GHG Footprint emissions document
9. Car hire for business use has been estimated, as data is unavailable to assess the mileage travelled as part of the rental period. Calculations have been based on an assumption that the user would travel 100 miles per day as part of the rental.

The parameter of Scope 1 and Scope 2 reporting in 2022 includes 16 sites covering London (UK), Birmingham (UK), Dublin (Ireland), Munich (Germany), Paris (France), Barcelona (Spain) and Atlanta, Boston, Chicago, Dallas, Farmington, New York,

San Francisco, Philadelphia, Miami (USA) and Montreal (Canada) and two third party data centres. Additional offices are located across the globe, many of which are considered shared space or serviced office suites. Beazley pays a service charge for their use, however, has no control over the operation or use of utility provisions. Responsibility for energy consumption and carbon emissions, therefore, falls to the landlord, and is considered out of scope for the purpose of these calculations. The global emissions reported do not include data for the following office locations: Houston, Los Angeles, Denver, Singapore, Rio de Janerio, Shanghai, and Vancouver. These offices make up 8% of Global FTE in 2022. This equates to 94% of Beazley employees including contractors. The 2022 reporting scope is comparable with the GHG emissions reported for 2019 to 2021. Beazley's two subsidiaries, Lodestone & BHI, are excluded due to data quality and will aim to be incorporated in future reporting.

Reporting is based on operational control. Beazley Group does not have operational control over the building infrastructure and plant at its offices due to the presence of facility management companies and shared tenancy; as a result, emissions primarily fall within Scope 2 and 3 of the Greenhouse Gas Protocol.

5.4.2 Location- based GHG emissions

Our Green House Gas (GHG) emissions normalised for Beazley's full-time equivalent (FTE) were 2.49 tonnes carbon dioxide equivalent (tCO_2e/ FTE) in 2022. This equates to an 55% reduction when compared to our 2019 baseline. This sizeable reduction is a reflection of the actions taken over the last three years, which have included the relocation of our office in London to more energy efficient premises at 22 Bishopsgate, the outsourcing of our data centres, and a reduction in business travel.

Location- based GHG Emissions (tCO2e)	2019	2020	2021	2022
Scope 1	21.08	16.50	8.23	65.20
Scope 2	2,010.84	1,773.92	1,412.87	1,144.79
Scope 3	6,735.91	1,647.04	807.37	4,073.96
Total tCO2e	8,767.83	3,437.46	2,228.46	5,283.00
Total tCO2e/FTE	5.52	2.09	1.22	2.49

5.4.3 Market- based GHG emissions

Beazley Group's market-based GHG reporting for 2022, taking into account the procurement of 538,589.43 kWh of electricity from certified renewable sources, is summarised in the table below. Renewable energy was procured for our Dublin, Barcelona, Paris and London offices, and equates to renewable energy being 53.46% of Beazley's overall in scope energy use. The procurement of renewable energy resulted in a saving of 116.63 tonnes of CO_2 equivalent. The contribution of renewable energy to our overall energy consumption is lower than the 65.55% saving achieved in 2021. This is because we were reporting energy arising from both our new and old London offices whilst in the process of relocating. Both offices used renewable energy, and therefore both our overall energy consumption and the contribution from renewable energy was temporarily higher than in a normal operating year.

The market-based emissions, which take into account the carbon emission reductions achieved through the use of renewable energy in four of Beazley's offices, are set out in the table below.

Market-based GHG Emissions (tCO2e)	2021	2022
Scope 1	8.23	65.20
Scope 2	1,038.22	1,027.79
Scope 3	776.12	4,066.63
Total tCO2e	1,822.57	5,158.65
Total tCO2e/FTE	1.00	2.43

Metrics and Targets – closed ended questions answered in addition to the narrative

- Does the insurer use catastrophe modeling to manage your climate-related risks? (Y/N)
- Does the insurer use metrics to assess and monitor climate-related risks? (Y/N)
- Does the insurer have targets to manage climate-related risks and opportunities? (Y/N)
- Does the insurer have targets to manage climate-related performance? (Y/N)