

Climate change ORSA guide

Capturing climate change in the ORSA

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Climate change is an emerging risk that has got everyone's attention. Companies are announcing their intentions of being a "good corporate citizen" and regulators are enhancing their supervision and disclosure requirements. In this paper, we discuss how insurance companies can consider the impact of climate change through their ORSA.

The ORSA and climate change

The Prudential Regulation Authority (PRA) has a strategy to promote good practice about how firms manage climate-related financial risk internally, encourage firms to better prepare for the crystallisation of climate risks, facilitate understanding, and move towards mitigation of physical and transitional climate risks. The PRA has said that firms, as part of the Own Risk and Solvency Assessment (ORSA), should at a minimum consider the following items:

- All material exposures relating to the financial risks from climate change
- An assessment of how they have determined the material exposure(s) in the context of their business

The PRA has an expectation that by the end of 2021 firms should be demonstrating how they have embedded climate risk management within their frameworks to identify, measure, monitor, manage and report on their exposure to climate risks against a well-defined risk appetite, considering the current balance sheet and business model risk.

The ORSA process provides the framework for insurance companies to understand, evaluate and quantify their risk profile. With climate change impacts ranging from the short-term to the long-term, insurers must consider what climate risks should be included in the ORSA.

Climate risks are often categorised as either physical or transition risks.

PHYSICAL RISK

Physical risk encompasses the risks associated with climate-related changes to the environment over a prolonged period. This includes event-based and trend changes such as severe single weather events, deaths at extreme temperatures and the operational risks of supply chain interruption.

TRANSITION RISK

Transition risks are the risks associated with a changing economic environment as a result of moving to a low-carbon economy. Drivers include changing regulations, advancements in technology, incentives around various asset classes, changing consumer demands, legal requirements and reputational risks.

Climate change within business planning

The baseline for the ORSA stress and scenario testing is the three- to five-year forecast of expected financial performance and solvency. Companies will be required to take a best estimate view of climate change when outlining their central business forecast, taking into consideration both physical and transition risks. It can be difficult to understand what, if any, physical risks can have a material impact over the business planning horizon, and therefore it is important for firms to perform stress testing to explore the risks that could be particularly adverse for the company and its stakeholders, as these risks could encompass more low-frequency high-severity events.

There must be careful consideration of transition risks which can have shorter-term to medium-term impacts, with an emphasis on medium-term, as the effect of transition risk could sit outside the business planning horizon even though the window for action might sit within it.

A comprehensive risk review should ideally draw attention to all climate risk exposures (over all timeframes) in describing risk exposures, with noted materiality of each risk.

Whilst the specificities of transition risk considerations may vary for life, health and general insurance, the key risks to look at include:

- Regulatory considerations
- Legal requirements
- Reputational risks
- Changes to consumer behaviour

HOW WILL THE INSURANCE INDUSTRY BE IMPACTED?

Climate risks will have an impact on both the assets and liabilities of an insurance company's balance sheet, although the impacts will vary for life, health and general insurance.

Insurance underwriting risk

Insurance underwriting risk arises from both physical and transition risk.

Transition risks emerge from policy changes, technology innovation and market changes that are associated with the transition to a low-carbon economy.

Physical risks will affect insurance sectors in different ways:

- For general insurers, the physical risk caused by extreme weather events may lead to higher claim costs, particularly for insurers writing property insurance and motor insurance. As the frequency and severity of extreme weather events increases, and, as global temperatures rise, it is expected that there will be greater physical damage to vehicles and properties.
- For life insurers, the physical risks will have both a direct and indirect impact on mortality. Natural disasters may have a direct impact on mortality, especially with the increase in frequency and severity of such events. However, there are many indirect impacts, such as the changing weather patterns which can cause difficult living conditions, changing crop yields which can cause malnutrition, and an increase in vector-borne diseases which people may not have the ability to fight.
- For health insurers, physical risks may impact morbidity risk. In the way that natural disasters and changes in weather patterns may affect mortality for life insurers, the same events could impact the frequency, severity and types of morbidity experienced in a particular region.

The uncertainty associated with climate change causes additional underwriting risk, due to the uncertainty around longer-term pricing and modelling assumptions.

Market risk

Physical risk can impact the market value of assets in an insurer's portfolio. This would be particularly relevant to insurers that have invested heavily in property, real estate and infrastructure. The value of these assets could be impacted by the potential physical risks caused from floods and other severe weather events.

Transition risk will impact asset values as a result of policy changes and changing consumer preferences. Policy changes may impact particular asset classes more severely, such as carbon-intensive sectors, but are likely to affect the market as a whole. For example, sudden policy changes can affect asset portfolios and constrain market growth. Asset portfolios may

need to be rebalanced to align with changing consumer preferences, which may pose challenges if there are a limited number of suitable alternatives.

Credit risk

As asset portfolios are rebalanced, there might be a knock-on risk to the creditworthiness of certain issuers. There could be credit downgrades, higher risks of default and higher levels of depreciation.

Operational risk

There has been an increased level of regulation around the financial risks associated with climate change, with additional reporting and modelling obligations for insurers. All lines of business need to increase their resource allocation to understand and incorporate climate change in their models and financial reporting output. With the enhanced level of disclosures related to climate change, there may be an increased risk of a breach or reporting delay which can have legal or regulatory impacts.

Physical risks can directly impact business continuity, and supply chains would be interrupted if the operations of a firm were affected by a severe weather event.

Climate change stress test scenarios

A central component of the ORSA process is forward-looking assessment of own risk, which includes stress and scenario tests. These tests should be used to incorporate climate change impacts. Insurers should aim to consider a wide range of plausible scenarios to understand how resilient they would be to climate change effects. When considering scenarios, insurers will need to identify those related to both physical and transition risk.

TRANSITIONING TO A LOWER-CARBON ECONOMY

In its 2021 Biennial Explanatory Scenario (BES) Report,¹ the Bank of England has highlighted three distinct scenarios related to the transition to a lower-carbon economy, which would be useful for firms to consider as part of their ORSA. The scenarios listed below, which are further explored by the Network for Greening the Financial System (NGFS),² consider the speed and manner of the transition to a lower-carbon economy:

- **Orderly transition:** The BES Report defines this type of scenario as an "early policy action scenario." Under this scenario, transition to a lower-carbon economy is started early and the transition is achieved smoothly over a longer timeframe. The global average temperature increase under this scenario is limited to below 2°C in accordance with the Paris Agreement. Transition risk would be lower under this scenario, as policy measures are introduced at

¹ Bank of England (18 December 2019). The 2021 Biennial Exploratory Scenario on the Financial Risks From Climate Change: A Discussion Paper. Retrieved 11 February 2021, from <https://www.bankofengland.co.uk/paper/2019/biennial-exploratory-scenario-climate-change-discussion-paper>.

² NGFS Publications (24 June 2020). NGFS Climate Scenarios for Central Banks and Supervisors. Retrieved 11 February 2021 from <https://www.ngfs.net/en/ngfs-climate-scenarios-central-banks-and-supervisors>.

an earlier stage, and increase steadily over the longer timeframe. Physical risk would be lower under this scenario, but would still arise from the global average temperature increase.

- **Disorderly transition:** The BES Report defines this type of scenario as a “late policy action scenario.” Under this scenario, transition to a lower-carbon economy is delayed and action is taken in a sudden manner within a much shorter timeframe. The transition would need to be more severe to ensure that the global climate goals are achieved within the desired timeframe. Transition risk would be higher under this scenario given the unanticipated nature of the action that is taken.
- **No transition:** The BES Report defines this type of scenario as a “no additional policy action scenario.” Under this scenario no additional measures are taken to transition to a lower-carbon economy and global emissions are therefore not reduced. Physical risks would be more severe under this scenario as global average temperatures will continue to rise.

All companies should look at their investment portfolios to understand their risk exposures under each of these scenarios.

Companies have typically focused on transition scenarios to date that impact the asset side of the balance sheet. However, there have also been physical risk scenarios considered, related to extreme weather conditions, and how they impact the liabilities of the insurer. For example, general insurers writing property business may have considered how higher global temperatures would impact the frequency and severity of storms, which would lead to greater property damage and higher claim costs. Life and health insurers might have considered how extreme temperatures have impacted the mortality and morbidity rates.

Insurance companies will have considered scenarios that have been developed as part of the PRA’s Life Insurance Stress Test (LIST)³ and General Insurance Stress Test (GIST)⁴ exercises.

The Life Insurance Stress Tests focus on the asset side of the balance sheet, with the following scenarios included:

- Scenario A: The “disorderly transition” to a low-carbon economy over a medium-term business planning timescale, involving significant transition risks and asset repricing.
- Scenario B: The “orderly transition” to a low-carbon economy over a longer timescale with reduced transition risks relative to Scenario A.
- Scenario C: The “hothouse” scenario with no transition risk but physical risk maximised.

These scenarios are the same types of scenarios as listed in the BES Report.

The General Insurance Stress Tests focus on both the asset and liability sides of the balance sheet. They include an asset shock, four natural catastrophes scenarios and a reserve deterioration scenario.

SCENARIO ANALYSIS

Climate scenarios that are plausible need to be carefully defined as there are many channels that can allow transition to a lower-carbon economy. Different scenarios should be modelled to identify how the risks will differ with the transition pathways. Scenarios should cover both the short-term and long-term time horizons. Long-term analysis is important for firms, although it doesn’t sit within the ORSA business planning period. Firms also need to ensure that the scenarios consider the impact upon the key goals and strategies of the company. For example, there is a risk of lower sales volumes if an insurer is seen to be “un-green,” or if there are economic challenges associated with transitioning to a low-carbon environment in territories where there is a high reliance on non-environmentally friendly industries (e.g., coal). There may also be higher expenses associated with increased regulations and fines for not achieving climate-related targets.

Climate scenarios that are plausible for physical risks will need to be considered, although these scenarios may be easier to model using the catastrophe (CAT) risk models that companies are familiar with from Solvency II.

In addition to identifying the impact of a particular set of conditions going forward, companies could use an alternative approach of deciding what the outcome of the scenario analysis is and then identify how this outcome could occur. For example, if companies wanted to test a physical hit on properties, what would that look like? Similarly, if they want to test a business interruption scenario, what would that look like?

Orderly transition and disorderly transition scenarios can be developed using several steps:

- **Identify exposures:** Identify areas of vulnerability through looking at the strategy, business profile and risk register. Vulnerabilities can arise through changes to government policies, technological trends, geographical dependencies and changes to consumer preferences.
- **Assess exposures:** For transition risk, the assets should be classified into geography, class, sector and industry to assess climate risk. Counterparties can be assessed to ensure their goals align to a lower-carbon economy.

³ Bank of England & PRA (18 June 2019). Life Insurance Stress Test 2019: Retrieved 11 February 2021 from <https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/letter/2019/life-insurance-stress-test-2019-scenario-specification-guidelines-and-instructions.pdf>.

⁴ Bank of England & PRA (18 June 2019). General Insurance Stress Test 2019: Retrieved 11 February 2021 from <https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/letter/2019/general-insurance-stress-test-2019-scenario-specification-guidelines-and-instructions.pdf>.

- **Visualise a scenario:** A “what if” approach can be used to qualitatively consider what drivers and pathways would achieve a lower-carbon economy, where pathways should relate to future strategies and be feasible. This may reflect a reduction in the number of carbon emissions already produced, or represent a shift to renewable sources.
- **Model the scenario:** The modelling approach taken will be based on the pathway considered. The model might project the evolution of carbon emissions, future asset performance or impacts on the balance sheet. The key drivers of business performance should be included, alongside the climate, financial and macroeconomic variables.

Over the long term, physical impacts will become more pronounced and cause implications on investment performance. Transition scenarios should reflect cascading events that can happen over the longer time frame horizon.

SCENARIO CALIBRATION

An immediate challenge in calibrating a climate change scenario arises from the lack of available data. For the physical risks, data is often fragmented, there are differences in the level and quality of exposure data across regions and the complexities associated with the physical events may not be captured. For transition risk, it is not possible to tell the extent of climate risks already captured in asset valuations and there is a lack of consistency across the markets.

In modelling the scenarios, the following four types of variables are used:

- **Climate variables:** Carbon price, carbon emissions, sea levels, weather patterns.
- **Financial variables:** Yields, equity prices, interest rates.
- **Macroeconomic variables:** Inflation, unemployment, gross domestic product (GDP).
- **Additional "soft" variables:** Perceptions, policy decisions, competitor actions.

The data for the financial variables are widely available, but the historical data will not give a good indication of the future, hence future estimates will be subject to uncertainty. Expert judgement is required for calibrating on a forward-looking basis. However, government reports, academic research, financial reports and public data can help to inform this judgement. Plausible assumptions will need to be made about future developments, so questions could be asked about:

- **The development of climate policies:** Will there be a direct carbon tax imposed? Will there be regulation on efficiency? Will there be explicit disclosures for carbon emissions? How fast can policy changes be imposed?
- **The rate of technology innovation:** How much funding will be given to research and development? Can all energy sources be made more efficient? Can technologies reduce the level of carbon in the atmosphere? How quickly will technology changes be adopted?

- **Changes in energy mix:** How will the proportions of renewable and non-renewable energy change? Will all countries increase renewable energy consumption?
- **Changes to strategy:** How ambitious are the goals to reducing energy consumption and transitioning to environmentally friendly supplies? How can stakeholders be engaged to support positive change? Under what timescales can meaningful change happen?
- **Changes in society:** What will be the secondary effects of changes to the way people live and work? How will people’s attitude towards climate change alter?

When considering these questions it is important to remember that the ORSA generally looks at the “worst case” scenarios that could materially impact a company’s solvency position. For transition risk, firms could consider the orderly, disorderly, or no transition scenarios listed above and test for what the impact of each could be if they happened over the business planning cycle.

Climate change strategy and risk management

Many insurance companies have noted the importance of being a “good corporate citizen” with respect to sustainability and climate change, and have embedded it into their business strategy. This in turn means that companies are increasingly focusing on managing the risks to their business from climate change. The ORSA process should be used to explore:

- The circumstances and events which might endanger or compromise the ambition of being a “good corporate citizen.” This could result in some frictional costs. For example, if a company chooses to only source “green” it could cost significantly more than “brown” alternatives. Companies could therefore test a short-term shock on operating costs. Companies could also consider reputational risk in the ORSA, as not sourcing “green” may lead to reputational damage.
- The consequences of pursuing the ambition of being a “good corporate citizen” on the firm’s other strategic objectives and on its risk profile.
- The consequences of targeting strategies to manage climate risk on the firm’s other strategic objectives and on its risk profile.

MANAGEMENT ACTIONS

As part of the ORSA, companies must identify the proposed management actions that would be taken if the climate risk exposure fell outside the risk appetite.

Management actions for climate risk can typically be considered from two lenses:

- Actions to manage the financial risks to the business from climate change
- Actions to be a “good corporate citizen”

Managing the financial risks

Supervisory Statement (SS) 3/19⁵ states that the PRA expects firms to show evidence how they will mitigate financial risks from climate change, and expects firms to have credible plans, or policies, in place for managing exposures. Plans should reflect the distinctive elements of the financial risks from climate change, and firms should consider whether these plans are realistic, credible, consistent with regulatory expectations and achievable.

Management actions relating to the financial risks to the business will mainly relate to transition risk. Transitioning to a lower-carbon economy may see certain issuers or sectors being sought after while some are avoided. Assets that are perceived well for transitioning to a lower-carbon economy will be targeted. There will be constraints to the management actions permitted in terms of:

- **Perceived asset value:** Assets that are “green” may be seen favourably, but they may be less suitable in other aspects, or issued by companies that may be less favourable to do business with.
- **Availability of assets:** There may be a limited amount of “green” alternatives that are affordable and provide comparable returns. Lack of availability could lead to an increase in the concentration risk and reduced diversification.
- **Liability duration:** There may be limited availability of assets with the appropriate duration to match the liabilities.
- **Restrictions:** It may not be possible to change asset portfolios. For example, for companies that have approval for the Matching Adjustment (MA), the assets in the MA portfolio are expected to be held until maturity.
- **Asset management:** Investments may be with an asset manager as part of a pooled portfolio and there may be limited scope to change the assets included.
- **Availability of counterparties:** There may not be a suitable alternative provider, in terms of reinsurance companies, outsourcing providers, distribution partners, suppliers and other third parties.
 - Reinsurance companies: There may already be a limited choice of providers that offer the required cover and it may not be possible to find a better company to provide the same bespoke offering. Additionally, reinsurers may have had exposure to natural catastrophe events leading to a downgrading of their credit ratings, which means that the reinsurer doesn’t meet the internal policy of the company.
 - Outsourcing providers: It may not be possible to change outsourced provider as the costs associated with changing provider may not be justifiable compared to the associated transition risk.

- **Reliability:** The scenario analysis has a lot of uncertainty and limitations. The scenario analysis results should be taken sceptically.

Being a “good corporate citizen”

To be a good corporate citizen, the company must demonstrate social responsibility and ethical responsibility. Insurance companies can demonstrate this in various ways, for example:

- Insuring innovative projects that contribute to reduced emissions
- Investing in buildings, infrastructure projects and companies to reduce emissions
- Engaging with suppliers, distribution partners and outsourced providers by encouraging them to focus on “green” initiatives

The ORSA is the natural place to investigate some of the impacts of these decisions on over the company’s business planning horizon.

RISK MANAGEMENT CONSIDERATIONS

By the end of 2021, the PRA expects firms to demonstrate how they have embedded climate risk management within their frameworks to identify, measure, monitor, manage and report on their exposure to climate risks against a well-defined risk appetite, considering the current balance sheet and business model risk. One way for firms to achieve this is to integrate it into the ORSA process. There is also the intention for all firms by 2025 to be reporting climate change, with a significant portion of mandatory requirements in place by 2023.⁶

The PRA has noted that smaller firms may not have the resources available to develop as sophisticated an approach as some of the larger firms. However, they are not immune to climate risk and must take proportionate approaches.

Climate change integration

Firms must be able to demonstrate that they have fully considered the impact of internal and external risks when presenting their business strategy. Qualitative and quantitative scenario analysis can be used to support a climate change strategy, and allow that strategy to be refined for better alignment with the well-defined risk appetite and risk preferences. Scenario analysis is a useful tool to test:

- The impact of adopting a climate change pathway on the existing strategic objectives, business plan and risk profile
- The potential opportunity created by pursuing a climate change pathway
- The conditions for which achieving the strategic options would become challenging

⁵ PRA (April 2019). Supervisory Statement SS3/19: Enhancing banks’ and insurers’ approaches to managing the financial risks from climate change. Retrieved 11 February 2021 from <https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/supervisory-statement/2019/ss319>.

⁶ HM Treasury (November 2020). Interim Report of the UK’s Joint Government-Regulator TCFD Taskforce. Retrieved 11 February 2021 from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/933782/FINAL_TCFD_REPORT.pdf.

It is important to also be able to monitor progress on delivering the strategy. A framework must be developed to measure progress and monitor the risks associated with the strategy, in addition to monitoring the climate risk exposures as a whole.

Climate risk needs to be integrated into other relevant areas of the business. In pricing, for example, insurers need to consider how climate risks will impact the catastrophe loading that they apply to their premium rates. Additionally, insurers need to take into account any systemic effects from climate as they will affect prior assumptions of diversification.

Climate risk metrics

Risk metrics are a useful tool to monitor risk exposures as part of day-to-day reporting. The PRA letter reviewing the thematic feedback of SS3/19⁷ stated that metrics and quantification were identified as the most challenging aspect of assessing climate-related financial risks.

When choosing risk metrics, it is important to ensure they are forward-looking to capture the evolving nature of climate change. They must reflect the estimation of risks over different time horizons to reflect the long-term nature, and non-linear nature, of climate risks, as some transition risks could materialise today whilst others could take 30 to 50 years. They must also reflect how these risks will change over time. The PRA has noted that reasonable proxies and assumptions are expected to be made where a suitable metric does not exist. However, it is possible for companies to construct metrics using unstructured data to monitor softer factors such as market or consumer sentiment.

A red/amber/green (RAG) system can be used to monitor risk metrics and define whether a risk is currently within the risk appetite. Firms can then define sets of actions enabling them to transition from the current metric to the point at which the metric status becomes “green.”

Risk policies

Climate risk is usually treated as a “cross-cutting” risk, meaning it will manifest through established risk types rather than as a standalone risk. The scenario analysis can identify the risk types impacted and allow climate change to be integrated into the appropriate elements of one risk framework.

Climate change should be included in the risk appetite. SS3/19 sets out the PRA expectations that the risk appetite should reflect the climate change strategy, with evidence that the climate risk is monitored and managed in line with the risk appetite statement. The PRA expects the risk appetite statement to include the risk exposure limits and thresholds for the financial risks that the firm is willing to bear, taking into account factors such as:

- The long-term financial interests of the firm, and how decisions today affect future financial risks
- Results of stress and scenario testing, for shorter and longer time horizons
- Uncertainty around the timing and the channels through which the financial risks from climate change may materialise
- Sensitivity of the balance sheet to changes in key risk drivers and external conditions

The PRA has stated the expectation in SS3/19, which has been further analysed by Milliman,⁸ that under the Prudent Person Principle (PPP) firms should consider whether there are excessive accumulations of financial risks from climate change in their investment portfolios, and consider mitigants when this is the case. If the scenario analysis highlights this to be true, then the investment policy may need to be updated in light of any changes to investment objectives, investment strategy or strategic asset allocations.

RISK MANAGEMENT AND GOVERNANCE

It is difficult to integrate climate risks into the ORSA process without also considering the company’s overall risk management and governance systems. Companies will also need to review their existing risk management and governance systems to ensure that climate risks are integrated into these frameworks and the ORSA process is complementary to them.

The World Economic Forum is a global organisation committed to improving the state of the world. It wrote the report “How to Set Up Effective Climate Governance on Corporate Boards,”⁹ which discusses the guiding principles for effective climate governance.

⁷ Woods, S. (1 July 2020). Managing climate-related financial risk – thematic feedback from the PRA’s review of firms’ Supervisory Statement 3/19 (SS3/19) plans and clarification of expectations. PRA. Retrieved 11 February 2021 from <https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/letter/2020/managing-the-financial-risks-from-climate-change.pdf?la=en&hash=A6B4DD1BE45B2762900F54B2F5BF2F99FA448424>.

⁸ Nicholson A. & Zhu, S. (October 2020). Climate Change and the Prudent Person Principle. Milliman White Paper. Retrieved 11 February 2021 from <https://us.milliman.com/en/insight/climate-change-and-the-prudent-person-principle-the-implications-of-climate-change-on-ppp-compliance#:~:text=that%20guide%20us-,Climate%20change%20and%20the%20Prudent%20Person%20Principle%3A%20The%20implications,climate%20change%20on%20PPP%20compliance&text=The%20Solvency%20II%20Prudent%20Person,which%20would%20include%20climate%20risk.>

⁹ World Economic Forum (January 2019). How to Set Up Effective Climate Governance on Corporate Boards. Retrieved 11 February 2021 from http://www3.weforum.org/docs/WEF_Creating_effective_climate_governance_on_corporate_boards.pdf.

FIGURE 1: GUIDING PRINCIPLES FOR EFFECTIVE CLIMATE GOVERNANCE

Climate accountability on boards	The board is ultimately accountable to shareholders for the long-term stewardship of the company. Accordingly, the board should be accountable for the company's long-term resilience with respect to potential shifts in the business landscape that may result from climate change. Failure to do so may constitute a breach of directors' duties.
Command of the (climate) subject	The board should ensure that its composition is sufficiently diverse in knowledge, skills, experience and background to effectively debate and take decisions informed by an awareness and understanding of climate-related threats and opportunities.
Board structure	As the stewards for long-term performance and resilience, the board should determine the most effective way to integrate climate considerations into its structure and committees.
Material risk and opportunity assessment	The board should ensure that management assesses the short-, medium- and long-term materiality of climate-related risks and opportunities for the company on an ongoing basis. The board should further ensure that the organisation's actions and responses to climate are proportionate to the materiality of climate to the company.
Strategic and organisational integration	The board should ensure that climate systemically informs strategic investment planning and decision-making processes and is embedded into the management of risk and opportunities across the organisation.
Incentivisation	The board should ensure that executive incentives are aligned to promote the long-term prosperity of the company. The board may want to consider including climate-related targets and indicators in their executive incentive schemes, where appropriate. In markets where it is commonplace to extend variable incentives to nonexecutive directors, a similar approach can be considered.
Reporting and disclosure	The board should ensure that material climate-related risks, opportunities and strategic decisions are consistently and transparently disclosed to all stakeholders—particularly to investors and, where required, regulators. Such disclosures should be made in financial filings, such as annual reports and accounts, and be subject to the same disclosure governance as financial reporting.
Exchange	The board should maintain regular exchanges and dialogues with peers, policy-makers, investors and other stakeholders to encourage the sharing of methodologies and to stay informed about the latest climate-relevant risks, regulatory requirements etc.

Accountability

The board will have the ultimate accountability for climate risk. However, there should be accountability in all areas of the company. For climate risk to be embedded, it will require cross-functional engagement amongst different teams.

SS3/19 states that the PRA expects firms to have clear roles and responsibilities for the board and its relevant sub-committees in managing the risk from climate change. The PRA requires the board to identify a senior management function (SMF) as responsible for managing financial risks from climate change, with the roles and responsibilities clearly included within the Statement of Responsibilities of the SMF.

Governance disclosures

The Task Force on Climate-related Financial Disclosures (TCFD) develops voluntary recommendations for climate-related financial disclosures around governance, strategy, risk management and metrics and targets. The TCFD recommends that companies disclose the governance around climate-related risks and opportunities, with the recommended disclosures:¹⁰

- Describe the board's oversight of climate-related risks and opportunities
- Describe management's role in assessing and managing climate related risks and opportunities

Board's oversight of risks and opportunities

The TCFD has recommended a discussion of the following:

- The processes and frequency by which the board and/or board committees are informed about climate-related issues
- Whether the board and/or board committees consider climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, annual budgets and business plans as well as setting the organisation's performance objectives, monitoring implementation and performance and overseeing major capital expenditures, acquisitions and divestitures
- How the board monitors and oversees progress against goals and targets for addressing climate-related issues

Management's role in assessing and managing climate-related risks and opportunities

The TCFD has recommended including the following:

- Whether the organisation has assigned climate-related responsibilities to management-level positions or committees; and, if so, whether such management positions or committees report to the board or a committee of the board and whether those responsibilities include assessing and/or managing climate-related issues
- A description of the associated organisational structure(s)
- Processes by which management is informed about climate-related issues, and how management (through specific positions and/or management committees) monitors climate-related issues

¹⁰ TCFD. Governance: Recommended Disclosures. Retrieved 11 February 2021 from <https://www.tcfhub.org/governance/>.

Although these are voluntary recommendations, it is important that companies consider climate change in their governance arrangements. A sufficient level of knowledge around climate risks must be ensured at the board level, with the sufficient tools and support made available by the governance structure.

Summary of framework

In conclusion, we have discussed the considerations that are relevant to insurers attempting to understand how climate change will impact their risk management, how to embed climate change into their business strategy, and how this can be achieved using the ORSA.

When considering climate change, insurers should:

- Consider the impacts of both physical and transition risk on the business strategy and risk appetite.
- Develop a set of stresses and scenarios that could be used to explore the physical and transition risk over short-term and long-term time horizons.
- Incorporate climate change into risk management processes and their business strategy.
- Consider the management actions needed in order to align the climate risk exposure to the risk appetite.
- Monitor climate risk and use the ORSA to track progress and brainstorm potential impacts as new risks emerge. Climate risk is still developing, and the ORSA is a useful tool to ensure that firms effectively manage these risks.

How we can help

Our deep expertise in climate change and Solvency II derives from our cutting edge research and practical experience of working with clients to assist them with their risk management and modelling needs. Our clients know that they can have confidence in us to provide an excellent service and innovative, effective and dynamic solutions that fully meet their needs. We don't believe that all companies are the same, so our approach enables us to ensure that the solution each client receives is tailored to precise circumstances and maturity levels.

In respect of ORSAs and climate, we offer assistance with:

- Review of existing ORSA frameworks
- Review of ORSA scenarios, and related modelling
- Development of risk appetite statements and articulating them in terms of impact tolerances

If you have any questions or comments on this paper, or on any other issues affecting ORSAs or risk management, please contact any of the consultants below or your usual Milliman consultant.



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