IAIS

INTERNATIONAL ASSOCIATION OF INSURANCE SUPERVISORS

SUSTAINABLE INSURANCE FORUM

Public

Application Paper on the Supervision of Climate-related Risks in the Insurance Sector

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About the IAIS

The International Association of Insurance Supervisors (IAIS) is a voluntary membership organisation of insurance supervisors and regulators from more than 200 jurisdictions. The mission of the IAIS is to promote effective and globally consistent supervision of the insurance industry in order to develop and maintain fair, safe and stable insurance markets for the benefit and protection of policyholders and to contribute to global financial stability.

Established in 1994, the IAIS is the international standard setting body responsible for developing principles, standards and other supporting material for the supervision of the insurance sector and assisting in their implementation. The IAIS also provides a forum for Members to share their experiences and understanding of insurance supervision and insurance markets.

The IAIS coordinates its work with other international financial policymakers and associations of supervisors or regulators, and assists in shaping financial systems globally. In particular, the IAIS is a member of the Financial Stability Board (FSB), member of the Standards Advisory Council of the International Accounting Standards Board (IASB), and partner in the Access to Insurance Initiative (A2ii). In recognition of its collective expertise, the IAIS also is routinely called upon by the G20 leaders and other international standard setting bodies for input on insurance issues as well as on issues related to the regulation and supervision of the global financial sector.

About the SIF

The Sustainable Insurance Forum (SIF) is a leadership group of insurance supervisors and regulators working together to strengthen their understanding of and responses to sustainability issues facing the insurance sector. The long-term vision of the SIF is a global insurance system where sustainability factors are effectively integrated into the regulation and supervision of insurance companies. This SIF is convened by the United Nations Environment Programme (UNEP), which serves as its Secretariat. The SIF works closely with the International Association of Insurance Supervisors (IAIS), delivering collaborative projects and research on climate change issues. As of October 2020, the SIF has 30 jurisdictions as members.

Application Papers provide additional material related to one or more ICPs and/or ComFrame, including actual examples or case studies that help practical application of supervisory material. Application Papers could be provided in circumstances where the practical application of principles and standards may vary or where their interpretation and implementation may pose challenges. Application Papers can provide further advice, illustrations, recommendations or examples of good practice to supervisors on how supervisory material may be implemented.

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Acronyms

A2ii	Access to Insurance Initiative
ACPR	Autorité de Contrôle Prudentiel et de Résolution
ALM	Asset-liability management
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht (Federal Financial Supervisory Authority)
BMA	Bermuda Monetary Authority
BNM	Bank Negara Malaysia
CSR	Corporate social responsibility
ComFrame	Common Framework for the Supervision of Internationally Active Insurance Groups
DNB	De Nederlandsche Bank (Dutch Central Bank)
EIOPA	European Insurance and Occupational Pensions Authority
ERM	Enterprise risk management
ESG	Environmental, social and governance
EU	European Union
FSB	Financial Stability Board
GHG	Greenhouse gas emission
IAIS	International Association of Insurance Supervisors
IAIG	Internationally active insurance group
ICP	Insurance Core Principle
IDF	Insurance Development Forum
IPCC	Intergovernmental Panel on Climate Change
IST	Industrywide Stress Test
ND-GAIN	Notre Dame Global Adaptation Initiative Index
NGFS	Network for Greening the Financial System
OECD	Organisation for Economic Co-operation and Development
ORSA	Own risk and solvency assessment
PACTA	Paris Agreement Capital Transition Assessment
SIF	Sustainable Insurance Forum
TCFD	Task Force on Climate-related Financial Disclosures
UK PRA	United Kingdom Prudential Regulation Authority
UN	United Nations
UNEP	United Nations Environment Programme
US NAIC	United States National Association of Insurance Commissioners

1 Introduction

1.1. Context and objective

1. Climate change is recognised as an overarching global threat. It impacts human, societal, environmental and economic systems, through rising temperatures, rising sea levels and an increasing frequency/severity of natural catastrophes and extreme weather events. Climate change, as well as the global response to the threats posed by climate change (eg the reduction of greenhouse gas emissions (GHG) and adaptation programmes) may have wide-ranging impacts on the structure and functioning of the global economy and financial system.

2. There is growing recognition that climate change and climate-related risks are a source of financial risk,[1] having an impact on the resilience of individual financial institutions, including insurers, as well as on financial stability. Therefore, supervisors should identify, monitor, and assess the impact of climate change risk on the insurance sector, as well contribute to the mitigation of this risk, with the ultimate objective of protecting policyholders and contributing to financial stability (in line with two of the three objectives of insurance supervision, as stated in ICP Standard 1.2).

3. Climate change presents not only risks but also opportunities for the insurance sector. The insurance industry plays a critical role in the management of climate-related risks in its capacity as a risk manager, risk carrier and investor, and is uniquely qualified to understand the pricing of risks. Insurers can also help build resilience through (inclusive) insurance.[2] By supporting these initiatives, supervisors can help to promote the maintenance of a fair, safe and stable insurance market (in line with the third objective of insurance supervision, as stated in ICP Standard 1.2).

4. This Application Paper aims to support supervisors in their efforts to integrate climate risk into the supervision of the insurance sector. It provides background and guidance on how the IAIS supervisory material can be used to manage the challenges and opportunities arising from climate-related risks. Application Papers do not establish standards or expectations, but instead provide additional guidance to assist implementation and provide examples of good practice. This Paper thereby also aims to promote a globally consistent approach to addressing climate-related risks in the supervision of the insurance sector. This, however, is an iterative and dynamic process given that the understanding of the challenges and opportunities presented by climate-related risks will improve and evolve as the guidance provided is increasingly embedded in supervisory practices.

1.2. Related work by the SIF and IAIS

5. Since initiating a strategic partnership with the Sustainable Insurance Forum (SIF) in 2017, the International Association of Insurance Supervisors (IAIS) has identified climate risk and sustainability as a strategic focus. In July 2018, the SIF and the IAIS released a joint Issues Paper on Climate Change Risks to the Insurance Sector ("2018 Issues Paper"). As a follow-up, the SIF and IAIS published a second Issues Paper in February 2020 on the

[1] See NGFS (2019), First comprehensive report: A call for action, Climate change as a source of financial risk; and BIS / Banque de France (2020), The green swan, Central banking and financial stability in the age of climate change.

[2] See Access to Insurance Initiative (A2ii), https://a2ii.org/en/knowledge-center/climate-riskdisaster-insurance.

implementation of the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) in the insurance sector ("2020 Issues Paper").[3]

1.3. Proportionality

6. IAIS Application Papers should be read in the context of the proportionality principle, as described in the Introduction to ICPs: "Supervisors have the flexibility to tailor their implementation of supervisory requirements and their application of insurance supervision to achieve the outcomes stipulated in the Principle Statements and Standards."[4] When reading the advice, illustrations, recommendations or examples of good practice provided in this Paper, it is important to keep proportionality in mind. Where appropriate, this Paper provides practical examples of the application of the proportionality principle.

1.4. Terminology

7. In this Application Paper, all terms have the same meaning as set out in the IAIS Glossary and the Introduction to the ICPs. To facilitate the understanding of the Paper, definitions of terms that are used frequently and are not part of the IAIS Glossary, are shown in the table below.

Table 1: List of climate-related terms

Term	Definition
Climate change	Change of climate (as represented by global average surface temperature) that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods.
Sustainability risk	Risks associated with environmental, social or governance factors. Climate-related risks are a subset of sustainability risks.
Environmental risk	Risks posed by the exposure of an insurer to activities that may potentially cause or be affected by environmental degradation.
Climate-related risk / climate risk	Risk posed by the exposure of an insurer to physical, transition or liability risks caused by or related to climate change. Both terms are used interchangeably in this Paper.
Physical risk	Risk arising from increased damage and losses from physical phenomena associated with both climate-related trends (eg changing

[3] The 2018 and 2020 Issues Papers are available at https://www.iaisweb.org/page/supervisory-material/issues-papers/.

[4] "Implementation - proportionality allows the ICPs to be translated in to a jurisdiction's supervisory framework in a manner appropriate to its legal structure, market conditions and consumers.
Application - proportionality allows the supervisor to increase or decrease the intensity of supervision according to the risks inherent to insurers, and the risks posed by insurers to policyholders, the insurance sector or the financial system as a whole. A proportionate application involves using a variety of supervisory techniques and practices which are tailored to the insurer to achieve the outcomes of the ICPs. Such techniques and practices should not go beyond what is necessary in order to achieve their purpose."

	weather patterns, sea level rise) and events (eg natural disasters, extreme weather).
Transition risk	Risk arising from disruptions and shifts associated with the transition to a low-carbon economy, which may affect the value of assets or the costs of doing business.
Liability risk	The risk of climate-related claims under liability policies, as well as direct actions against insurers, for failing to manage climate risks.

1.5. Scope

8. Climate-related risks may affect the supervision of insurers in many ways and therefore, an Application Paper on this topic could theoretically deal with a great number of ICPs. For the purpose of focusing the content of the Paper, the following topics are in scope:

- ICP 9 (Supervisory Review and Reporting);
- ICP 7 (Corporate Governance);
- ICP 8 and 16 (Risk Management);
- ICP 15 (Investments); and
- ICP 20 (Disclosures).

9. The ICPs listed above all contain ComFrame standards (Common Framework for the Supervision of Internationally Active Insurance Groups (IAIGs)), with the exception of ICP 20. ComFrame builds on, and expands upon, the high-level standards and guidance set out in the ICPs. The ICPs generally apply to the insurance sector as a whole, both on a legal entity and group-wide level, and both to primary insurers and reinsurers. The primary aim of this Paper is to provide guidance for supervisors in implementing the ICPs.

10. The SIF and IAIS recognise that several ICPs that are not in scope for this Paper, do have relevance for assessing and mitigating climate-related risks. These may be covered in future work, or are already covered by other work and include:

- ICPs 14 and 17 (Valuation and Capital requirements): Since ICPs 14 and 17 are scheduled to be revised in the coming years (during the monitoring period of the Insurance Capital Standard Version 2.0), developing an Application Paper related to these ICPs at this time would not be appropriate;
- ICP 19 (Conduct of business): Conduct of business is especially relevant in terms of possible reputational risk and the risk of "green washing".[5] Inclusion of ICP 19, however, does not naturally fit with the other identified topics, which instead all relate to prudential supervision. For the purpose of this Paper, it is therefore out of scope; and
- ICP 24 (Macroprudential supervision): Climate change has system-wide implications. Supervisory (macroprudential) stress testing is one tool to measure the potential impact of climate change on the insurance sector as a whole. At the time of this Paper's development, the IAIS is also developing an Application Paper specifically dealing with ICP 24; therefore, this ICP is not in scope. That Paper provides examples of the various

[5] Greenwashing refers to the process of conveying a false impression or providing misleading information about how a company's products or services are more environmentally sound, eg spending more on the marketing around it than on actually reducing its environmental impact.

macroprudential tools that a supervisor may use, many of which are helpful to assess climate-related risks.

11. Another important area not in scope relates to the availability and affordability of insurance due to an increase in weather-related events and natural catastrophes. To reduce its exposure to climate-related risks, an insurer may stop offering insurance to a certain group of policyholders, or significantly increase premiums. While justifiable from a microprudential perspective, this outcome may potentially introduce undesirable socio-economic results in the near-term. New forms of public-private partnerships are emerging that can help jurisdictions absorb the financial consequences of catastrophic weather-related events. Supervisors can act as a bridge and communication catalyst between policymakers, the insurance industry and consumers. Bodies such as the Insurance Development Forum (IDF) and the Access to Insurance Initiative (A2ii) are actively engaging insurers and supervisors in this area.

2 Role of the Supervisor

12. As noted in the Introduction, climate-related risks are a source of financial risk, which may translate into prudential risks to insurers – ie may affect the resilience of insurers (see Table 2). It is recommended for supervisors to assess the extent to which climate-related risks are likely to be material to insurers operating in their jurisdiction and to determine how these risks may be transmitted to their economies and financial sectors more broadly.[6] Supervisors should identify how climate-related risks are relevant to their supervisory objectives. In recent years, some supervisors have expanded their objectives to include sustainability.

Table 2: Climate-related risks and selected prudential risks

Prudential risks	Potential impact from climate change
Underwriting risk	Climate change is already affecting the frequency, severity and concentration of high impact natural catastrophes around the world, leading to increases in weather-related insurance claims.
Investment risk	The value of an insurer's investment portfolio may be affected if invested in sectors or assets, which may be at risk from either physical or transition-related factors.
Liquidity risk	A lack of reliable and comparable information on climate-sensitive exposures could create uncertainty and cause procyclical market dynamics, including fire sales of carbon-intensive assets, and hence reduce liquidity of these markets.
Operational risk	Physical climate impacts may affect the insurer's own assets (including property, equipment, IT systems and human resources), leading to increased operating costs, inhibited claims management capacity, or potentially stoppages of operations. It may also impact outsourced activities.

[6] For a further elaboration on how climate-related risks and environmental risks may translate into risks for the financial sector and real economy, see NGFS (2020), *Guide for Supervisors on Integrating climate-related and environmental risks in prudential supervision,* https://www.ngfs.net/sites/default/files/medias/documents/ngfs_guide_for_supervisors.pdf

Reputational risk	Negative publicity may be triggered by insurers underwriting, or investing in, sectors perceived as contributing to climate change. This is exemplified by social movements calling for divestment from fossil fuels and the cessation of underwriting of coal-fired power infrastructure. Further, reductions in affordability or availability of insurance cover as insurers respond to climate risk may also lead to negative reputational impact.
Strategic risk	Physical or transition-related climate events, trends and uncertainty about future scenarios may present strategic challenges to insurers, which could inhibit or prevent an insurer from achieving its strategic objectives

Sources: 2018 IAIS/SIF Issues Paper and Network for Greening the Financial System (NGFS) (2020), *Guide for Supervisors on Integrating climate-related and environmental risks in prudential supervision*.

2.1. Preconditions and resources

13. As highlighted in the ICP Assessment Methodology,[7] an effective system of insurance supervision requires a number of preconditions to be in place. Although beyond the influence of the supervisor, such preconditions can be taken into account in the development of supervisory practices as they relate to climate-related risks. The following categories of preconditions may be of particular relevance:

- Sound and sustainable macroeconomic and financial sector policies, eg the impact on asset prices of the introduction of a globally-agreed carbon pricing system;
- A well-developed public infrastructure, eg the existence of levees against rising sea levels as part of adaptation programmes;
- Efficient financial markets, eg the adoption of a taxonomy or classification of assets or activities against a set of sustainability goals; or
- Effective market discipline in financial markets, eg the extent to which non-financial private sector participants have implemented climate-related disclosures.

As indicated in paragraph 53 of the Assessment Methodology, where shortcomings exist, the supervisor should make its government aware of these and their actual or potential repercussions for the achievement of supervisory objectives.

14. Sufficient resources are important to enable effective supervision (see ICP 2 (Supervisor)). In terms of a rapidly evolving risk, such as climate risk, this entails providing adequate training opportunities for supervisory staff. As capability to assess climate risk is still developing, supervisors may find it of assistance to use external resources, including materials produced by international organisations (eg the NGFS, A2ii, IAIS and SIF) or collaborate with external stakeholders (eg Non-Governmental Organisations, think-tanks, government departments, environmental and climate science experts or financial sector participants).

15. Different approaches may be used to embed climate risk into the organisation of the supervisor. The NGFS distinguishes between three approaches that could be considered, depending on the circumstances:

- Internal network approach: establishing flexible structures such as internal networks, which can promote knowledge sharing and improve coordination. This structure would

[7] See https://www.iaisweb.org/page/supervisory-material/insurance-core-principles-and-comframe

typically involve staff from different departments for which climate risk is only part of their responsibilities, and hence is least resource-intensive;

- Hub & spokes approach: with a central team or unit working full-time on climate-related risks and one or more contact persons in each of the relevant departments to facilitate feedback loops and dissemination of information across the supervisory authority; or
- Dedicated unit approach: creating a dedicated unit as the main source of general expertise on climate risk, with the mandate to coordinate issues related to climate and/or sustainability across all departments.

16. For example, the French Autorité de Contrôle Prudentiel et de Résolution (ACPR) has set up a sustainable finance network in order to exchange information regularly between it and the central bank. The German Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) set up an internal sustainable finance network, which facilitates information exchange across the different sectors and helps achieve a consistent approach. The Bermuda Monetary Authority (BMA) has a standing, internal working group on environmental, social and governance (ESG) issues that has dedicated sub-projects with clear overarching targets beyond collaboration and information exchange. The Bank of England's Prudential Regulation Authority (UK PRA) set up a Climate Hub to lead on the Bank's policy response to the risks from climate change and embed climate risk within the supervisory approach. The Hub takes a strategic and coordinating role and, in collaboration with the various directorates, contributes to the Bank's involvement in national and international initiatives. Finally, Bank Negara Malaysia (BNM)'s climate strategy is supported by seven internal workstreams across different aspects of central banking namely supervisory, regulatory, macrosurveillance, monetary policy and treasury operations as well as the Bank's own operations. A regulator-industry platform has been formed to drive and support readiness of the financial sector in managing risks associated with climate risk and in supporting the transition to a low carbon economy.

2.2. Supervisory review and reporting

17. ICP 9 (Supervisory Review and Reporting) focuses on the general processes and procedures supervisors should have in place with respect to supervisory review and reporting. ICP 9 thus provides for a natural starting point for supervisors who want to integrate climate-related risks into their supervisory framework, in terms of integrating this into supervisory plans, obtaining the necessary qualitative and quantitative information on climate-related risks and methods for supervisory feedback and follow-up.

18. Guidance in ICP 9.1 notes the need for the supervisory review and reporting framework, including the supervisory plans, to be reviewed and take account of evolving risks. It is clear that climate risk is an example of such an evolving risk and should be considered. As indicated above, the starting point would be the assessment of the materiality of climate-related risks to individual insurers and the insurance sector as a whole. Common practice is for supervisors to assess the impact of climate risk on other prudential risk classes rather than as a separate risk category (see Table 2 for examples).

2.2.1. Information gathering

19. For a proper assessment of the risks, supervisors should have qualitative information on climate risk management and quantitative information on the exposure to physical, transition and liability risks (see Box 1 for illustrative examples). Relevant public data may come from TCFD-aligned disclosures or reporting in line with the Principles for Responsible Investment Initiative. Relevant information from existing reporting requirements may come

from evaluating an insurer's business strategy or risk management and governance documentation, detailed data on asset exposures, or outcomes of stress and scenario testing exercises.

20. It should be acknowledged that there are significant limitations to data availability and comparability of existing climate-related reporting and disclosures. As per ICP 9.4, the supervisor "requires more frequent reporting and/or additional information from insurers as needed". To assess climate risks, many supervisors have found it useful to collect supplementary information on an ad hoc basis such as through surveys and targeted requests. This allows for a rapid and iterative approach to gathering information. Given the importance of understanding this risk, the supervisor should decrease its reliance on ad hoc information requests and move towards integration of climate risk information needs into the regular reporting requirements over time.

21. As it relates to the supervision of insurance groups, information sharing and cooperation with other involved supervisors on climate-related risks through existing mechanisms, such as the IAIS Multilateral Memorandum of Understanding (MMoU), is crucial. For example, supervisory colleges may discuss the use of natural catastrophe models and assumptions to account for climate change, including in stress scenarios. Such information sharing and cooperation will support a group-wide assessment of the risks posed to the group as a whole, including by considering aggregate risk exposures, peer-group analysis and other relevant supervisory tools (see ComFrame integrated in ICP 9.2). Cross-border cooperation on supervisory review and reporting may also help streamline information gathering and avoid a group being confronted with multiple information requests from several involved supervisors.

2.2.2. Supervisory feedback and follow-up

22. Given the rapid evolution of this risk, clear two-way communication between the supervisor and the supervised entities is essential. Supervisors are typically using a combination of industry-wide and insurer-specific communication approaches to increase awareness and promote transparency around the supervisor's expectations of the insurer's approach to climate-related risks. Also, the supervisor may host workshops for the financial and/or insurance sector to exchange information and promote awareness.

Box 1: Illustrative examples of relevant indicators

Examples of relevant indicators and sources of information that supervisors may consider asking insurers, inter alia based on guidance published by the SIF and United States National Association of Insurance Commissioners (US NAIC),[8] include:

Qualitative questions:

General

- What are the environmental, economic, social, political, technological, or reputational issues related to climate change that are relevant for your business?

[8] See also:
- SIF (2020), Question Bank on Climate Change Risks to the Insurance Sector;
- NAIC (2013), Financial Condition Examiners Handbook (which was updated to reflect climate-specific aspects, including templates to be used as a starting point when interviewing an insurer).

- Has your organisation implemented or planned any substantive changes to its business model, strategy and/or risk appetite in response to current and potential future climate-related risks?
- Are there governance structures in place in your organisation through which Board Members may have oversight over climate-related risks? Is there a specific Board Member identified to deal with these risks?

Physical risk

- Does your organisation expect that physical risks will materially affect business performance, in terms of market demand, claims experience, or other factors?
- Does your organisation expect that physical risks will materially affect the valuation of financial assets in your investment portfolio, and how do you expect these risks to materialise over the short, medium, and long term?
- What are the most material domestic physical hazards from extreme events and from gradual changes in climate?

Transition risk

- Does your organisation expect that transition risks will materially affect underwriting business performance, in terms of market demand, claims burden, or other factors?
- To what extent does the investment strategy include climate-related considerations, and does the insurer comply with its stated strategy?

Liability risk

- Has there been a legal judgement awarded in your jurisdiction relating to liability for climate change damages?
- Does your organisation consider that it may be exposed to liability risks stemming from climate change, either now or into the future?

Quantitative information:

General

- Carbon-intensity of sectors for both asset and liability exposures; or
- ESG/climate scoring, if available (internally developed or from third parties).

Physical risk

- The vulnerability to climate change by jurisdiction, for instance according to the Notre Dame Global Adaptation Initiative (ND-GAIN) Index or Standard & Poor's methodology;
- Percentage of fossil-fuel based power plants locations that are exposed to various levels of water stress, flood, and wildfire risks (from Paris Agreement Capital Transition Assessment (PACTA) model);
- Exposure to flood risk, or exposure of real estate investments to perils;
- Agricultural insurance with exposure to drought, variations in weather patterns and other climate change impacts; and
- Outputs from catastrophe models.

Transition risk

- Distribution of energy performance labels in insurers' commercial real estate and/or residential real estate portfolios;
- carbon intensity ratings of various assets and proportion of assets that are exposed to carbon intensive industries; and

- Implied warming of the portfolio such as through the PACTA model.

Liability risk

- General insurance for coal, oil and gas energy operations with exposure to climate litigation;
- Portfolio of relevant insurance liability covers such as for Directors and Officers.

3 Corporate Governance

23. ICP 7 (Corporate Governance) sets out requirements for the establishment and implementation of a corporate governance framework. This section looks at oversight and management responsibilities, business objectives and strategies, the role of the Board, duties related to risk management and internal controls, as well as remuneration through a climate risk lens (ICP 7.1, 7.2, 7.5 and 7.6). ICP 7 also discusses issues around supervisory review and communications, but these are covered in sections 2 and 6 respectively.

3.1. Appropriate allocation of oversight and management responsibilities

24. Given that climate risk is an evolving risk area, the relevant roles and responsibilities assigned to the Board, Senior Management and Control Functions should continue to adapt. This includes the need to have greater clarity on information and reporting needs (quantitative, qualitative), resourcing, skill sets and budgets. By assigning responsibility, there is greater accountability for mapping, monitoring and controlling the risk. In this way, an insurer obtains a more accurate picture of how climate risks affect their business and how these might evolve. That might lead insurers to adapt their risk management (and potentially governance) in light of new information. The Application Paper on Proactive Supervision of Corporate Governance can help supervisors identify governance-related issues in terms of management of climate-related risks.[9]

25. One way some insurers address evolving risks, including climate risk, is to have an internal risk committee that has the objective of identifying the changing risk landscape as well as potential ways to address the risk. Supervisors may want to encourage insurers to establish such a committee or other suitable structures with appropriate expertise, if they do not have one already.

26. The evolution of climate risk governance is reflected in some jurisdictional examples. In Canada, one insurer recently created the Chief Climate Risk Officer role responsible for assessing the financial exposures related to climate risk in its insurance portfolio as well as systemic impacts. The United Kingdom Prudential Regulation Authority (UK PRA) requires insurers to identify a person holding a Senior Manager Function to hold this responsibility and for this to be detailed in this person's formal Statement of Responsibilities document.

3.2. Business objectives and strategies of the insurer

27. Insurers should incorporate and assess climate risk as part of the annual financial planning and the long and short-term strategic planning processes. It is important for insurers' strategic planning periods to build on the risks of their insurance portfolio (eg long-term products utilise longer periods and are generally more prone to transition risk while non-life

[9] See https://www.iaisweb.org/page/supervisory-material/application-papers/file/80572/application-paper-on-proactive-supervision-of-corporate-governance

insurers writing short duration products are likely to be more impacted from physical and liability risk).

3.3. The role of the Board

28. The Board has a role in maintaining effective oversight of climate-related risk management, including incorporating climate-related considerations into the insurer's risk appetite, strategies and business plans.

29. There should be appropriate understanding of, and opportunity to discuss, climate risk at the Board and Board committee levels, including within the audit committee and the risk committee.

30. In order to enhance the skillset amongst its Board Members, insurers should take actions to facilitate the understanding and discussion of climate risks at Board and Board committee levels and, where necessary, providing appropriate training for Board Members. Additionally, the overall Board succession or Board renewal plans could be used as a way to help add skills and understanding on climate risk to the Board, if needed.

3.4. Duties of Senior Management

31. Senior Management is responsible for implementing the policies related to climate risk and/or incorporating climate risk related elements into relevant operational and business policies. The Board relies on Senior Management to provide advice on the organisational objectives, plans, strategic options and policies as they relate to climate risk, including the establishment and use of relevant tools, models and metrics to monitor exposures to climate-related risks. Senior Management should set out information, options, potential trade-offs and recommendations to the Board in a manner that enables the Board to focus on key issues and make informed decisions in a timely manner as it relates to climate risk.

3.5. Duties related to remuneration

32. The alignment of compensation with prudent risk-taking should take into consideration climate-related risks, as appropriate, since risk adjustments should account for all risk types relevant to the insurer.

33. Remuneration can indeed be used as an incentive to integrate climate-related risks in the risk management framework. As part of this, the attribution of variable remuneration could be linked to embedding climate-related risk management within the insurer (eg through staff training, or asset categorisation and performance). Also, the evolution of the non-financial performance of investee companies can be a relevant indicator for the variable remuneration.

4 Risk Management and Internal Controls

34. ICP 8 (Risk Management and Internal Controls) sets out requirements on systems of risk management and internal controls, including of the Control Functions. This section provides guidance on how supervisors could integrate climate-related risks into their supervisory expectations around the risk management system (ICP 8.1), and for each of the Control Functions (ICP 8.3 – 8.6). Finally, it discusses the supervision of outsourced functions in relation to climate risks (ICP 8.8). Box 2 provides examples of supervisory practices.

35. When addressing climate-related risks, it is expected that insurers fully integrate these risks into the overall corporate governance framework, which includes the systems of risk

management and internal controls. It is recommended that those insurers still using an approach that mainly addresses climate change from a reputational risk perspective[10] transition to a more fully integrated approach that considers the risks more holistically (including not only the reputational aspect, but also the impact on assets, liabilities and the overall business model).

4.1. Integrating climate-related risks into the scope of the risk management system

36. Climate risks relate to existing risk categories and affect the valuation of insurers' assets and liabilities as well as its business plan and strategic objectives. Life insurers in particular may incur increased losses due to an increase in mortality rate from climate events like heat waves (eg impact on term life products) or in some areas of the world an increase of longevity due to more moderate temperature (eg impact on annuity products). Non-life insurers may be affected by the increased frequency and severity of natural catastrophes on their products like property insurance, transport insurance or liability insurance. Transition risks manifest for instance through a decrease in the value of assets affected by ecological transition and may result in "stranded assets". Stranded assets relate to sectors likely to shrink due to measures taken to transition to a low-carbon economy (eg increase in carbon pricing) or to a shift in consumer or investor's preferences (eg away from airplane transportation).

37. Given the potential impact of climate-related risks on an insurer's solvency position, it would be expected that they are considered within the existing categories of risks and lead to a review of the risk management framework in case of material change in these risks. This means that the insurer should consider and document in the risk management policies how climate-related risks could materialise within each area of the risk management system, in particular in the investment and underwriting policies.

38. In order to identify, monitor, assess and manage these climate-related risks as well as their interaction with other identified risks, insurers should develop tools to collect reliable quantitative and qualitative data. This also allows the insurer to perform aggregated analysis of various elements of climate-related risks.

39. The potential impact on business continuity due to climate-related events should be considered in the risk management system.

4.2. Consideration of climate-related risks by the Control Functions

40. In performing its duties, Control Functions should take proper consideration of climate-related risks and should have the appropriate resources and expertise to support that. The Control Functions should identify, measure, and report on the insurer's risks, assess the effectiveness of the insurer's risk management and internal controls, and determine whether the insurer's operations, results and climate risk exposures are consistent with the risk appetite as approved by the Board.

<u>Risk management function</u>

41. The risk management function, an independent role from the business units that own the risk, should monitor and provide necessary resources to the business units to ensure proper identification, assessment and management of climate-related risks. This should be integrated into the risk management framework and in line with the Board-approved risk

[10] Often referred to as a "Corporate and Social Responsibility" approach.

appetite statement. The following risk management areas may be particularly affected by climate-related risks: asset-liability management (ALM), investment risk management, underwriting and reserving, reinsurance and other risk-mitigating techniques, operational risk and reputational risk management.

42. The risk management function should use a range of quantitative and qualitative methods and metrics to monitor progress against the insurer's overall business strategy and risk appetite, and ensure consistency within the insurer. For instance, the underwriting and investment functions should have aligned criteria when identifying sectors that are more exposed to climate change. The methods and metrics should be updated regularly to support decision making by the insurer's Board and/or relevant committees.

43. An example of a method for managing climate-related risks is defining investment limits to specific companies, sectors, regions, jurisdictions, etc. This may be based on certain criteria, such as the percentage of income stemming from mining, processing or burning fossil fuels. On the liability side, risk limits could also be defined, for instance a maximum exposure to policyholders in coastal areas in order to limit the risk exposure to flood risk. The use of "heat maps" or ESG scoring that highlight climate-related risks may also be a helpful method to get a better understanding of, and monitor, the impact of these risks.

Compliance function

44. The compliance function should then identify the compliance risks the insurer can face and the steps being taken to address them. In performing this task, the compliance function should take into account the legal risk and legal change risk (eg failure to appropriately disclose information on climate-related exposure) stemming from climate change. Accordingly, the compliance function should ensure that internal policies and internal control procedures are compliant with the important standards, directives, charters, or codes of conduct related to ESG principles the insurer committed to respect.

Actuarial function

45. It is expected that the actuarial function takes into account climate-related risks because they can potentially have an impact on the valuation of assets and on the calculation of insurance liabilities and capital requirements. To assess physical risks, the actuarial function could, for example, consider the impact of wind- and storm pattern shifts, increased frequency of hot weather, hail, high winds, extreme precipitation, drought and flooding. To assess transition risks, the actuarial function could consider the insurer's exposure to companies likely to be affected by a transition to a carbon-neutral economy.

46. In performing its duties, the actuarial function should pay particular attention to the assessment of the quality and completeness of underlying data. Historical analysis may not be sufficient to enable the appropriate calibration of premiums or reserves to reflect climate-related risks, in particular with regard to fast-evolving risks.

Internal audit function

47. The internal audit function should review the risk management process to ensure it is adequate and effective. As part of the review, it should assess whether all material risks, including climate risk, that may have an impact on insurer's resilience, are being considered and, where relevant, mitigated.

4.3. Fitness and propriety of Control Functions on climate-related issues

48. In order to ensure sufficient knowledge for the Control Functions while identifying, assessing, monitoring, managing and reporting climate-related risks, insurers should adapt their internal policies and implement training programmes to ensure they have a sufficient understanding on climate-related issues and their impact on the risk-profile of the entity. Insurers should ensure that persons who perform Control Functions have relevant experience in understanding the climate risk in insurance policies they underwrite and associated investments.

49. As an example, the European Insurance and Occupational Pensions Authority (EIOPA) also deems that "depending on their specific investment strategy, their risk profile and their size, the recruitment of dedicated experts may be needed for some undertakings. In any case, insurance and reinsurance undertakings should be requested to build-in the necessary expertise with particular consideration of the proportionality principle".[11]

50. Within the various Control Functions involved, a person with appropriate skills and knowledge in climate risks, or a dedicated unit, may be identified as primarily responsible for climate-related aspects in order to ensure that climate-related risks remain in scope and the necessary attention is allocated. However, this does not remove the need to integrate climate risk into all relevant parts of the business.

4.4. Integrating climate-related risks in outsourcing decisions

51. Insurers that decide to outsource any material activity should ensure their ability to manage risks and to ensure the continuity of their activities in case of a failure of the outsourcing provider. Physical risks could disrupt the insurer's operations, for example should severe weather events affect the premises of their outsourced business functions. To manage this risk, business continuity plans should include climate-related risks, where material. It may also be useful for insurers to conduct scenario analyses. In practice, some insurers with outsourced functions have used physical risk scenarios such as those published by the Intergovernmental Panel on Climate Change (IPCC). Insurers may increasingly include insured loss data as part of this analysis, as well as examining recent historical climate trends in key locations.

Box 2: Examples of supervisory practice on Risk Management and Internal Controls

Germany

BaFin published a Guidance Notice on Dealing with Sustainability Risks[12] that considers details of strategies, responsible governance and business organisation. BaFin recommends a strategic assessment of sustainability risks. The management board should have overall responsibility for the business and risk strategy and its communication and implementation within the entity, as well as for maintaining an appropriate business organisation with the responsibilities, processes, resources and functions to address the risks.

The central focus of the Guidance Notice is risk management. It considers risk identification, management and control processes together with traditional methods and

[11] See EIOPA (2019), Technical Advice on the integration of sustainability risks and factors in the delegated acts under Solvency II and IDD.
[12] See BaFin (2020), Guidance Notice on Dealing with Sustainability Risks.

procedures, with specific reference to sustainability risks. It also highlights specific features relating to insurance. In addition, the Guidance Notice considers issues regarding stress tests including scenario analyses. Finally, BaFin takes a stance on questions relating to outsourcing, group issues and the use of sustainability ratings.

Japan

Given recent significant loss experience from natural disasters among Japanese insurers, the Japan FSA has conducted thematic reviews on natural disaster risk management for non-life insurers. The reviews include retention and reinsurance strategy, group reinsurance policy, claim management, protection gap among small and medium-sized enterprises for water-related disasters and risk amount of large natural disasters. Climate change risk is added to the themes of this year's review and Japan FSA has started to discuss with insurers regarding risk management related to climate changes.

United Kingdom

The UK PRA stipulates the following expectations for insurers and reinsurers to address financial risks from climate change through their risk management frameworks.[13] It is expected that insurers and reinsurers should understand the financial risks from climate change and how they will affect their business model. To do so, they should:

- develop scenario analysis and stress testing, using all possible data in addition to historical data (eg future trends in catastrophe modelling) to identify correctly the short-and long-term financial risks to their business model from climate change;
- develop quantitative and qualitative tools to monitor their exposure to financial risks from climate change exposure (eg monitor the potential impact of physical risk factors on outsourcing arrangements and supply chains) and to monitor progress against their overall business strategy and risk appetite;
- define a credible plan or policies for mitigate and managing the exposures to financial risks from climate change (eg any action to reduce the concentration of these risks such as the necessity to take into account the potential and future impacts of the physical and transition risk factors on their clients, counterparties, and organisations in which the firm invests or may invest).

5 Enterprise Risk Management for Solvency Purposes

52. ICP 16 (Enterprise Risk Management for Solvency Purposes) sets out supervisory expectations on how insurers coordinate their risk management, strategic planning and capital management processes. This section discusses how climate-related risks can be integrated in an insurer's underwriting policy and underwriting processes, as well as in the Own Risk and Solvency Assessment (ORSA) process (with a focus on stress testing and scenario analysis). This covers Standards ICP 16.2, 16, 7, 16.10 – 16.14. ICP 16 also covers areas relating to the insurer's ALM and investment policies, which is covered in section 6. Box 3 provides examples of supervisory practices around ORSA and stress testing.

[13] See UK PRA (2019), Supervisory Statement SS 3/19 on Enhancing banks' and insurers' approaches to managing the financial risks from climate change. In July 2020, the PRA issued a Dear CEO letter which gives a timeline of by the end of 2021 for firms to be embedding all of the PRA climate-related requirements.

5.1. Underwriting policy

53. Physical, transition and liability risks arising from climate change can have an impact on the business risk profile, underwriting strategy and underwriting processes of insurers. When material, supervisors should expect insurers to identify the relevant physical, transition and liability risks inherent in their business portfolios, assess the implications for their underwriting strategy, and develop policies and procedures to integrate the management of these risks as part of their Enterprise risk management (ERM) framework as well as the risk appetite statement.

5.1.1. Consideration of climate-related risks in the underwriting policy

54. Insurers should have internal guidance on how the assessment and monitoring of such risks are embedded in the underwriting process. Hence, supervisors should require insurers to incorporate the consideration of climate-related risks in the underwriting policy. This may include the description of:

- Geographical areas, economic sectors[14] or lines of business that are assessed to have higher climate-related risks;
- processes to identify and assess climate-related risks inherent in new business applications and in the in-force portfolio; and
- the use of climate research reports, climate risk models and other analytics tools in the underwriting decision-making process, where applicable.

5.1.2. Consideration of climate-related risks in the underwriting assessment

55. Insurers have a thorough understanding of the potential losses from natural catastrophe events through their use of natural catastrophe modelling and analytics tools. It is possible that over time, insurers will also have a more precise understanding of the physical risks of climate change. However, this requires that sufficient data becomes available to incorporate weather scenario analysis into their catastrophe models, which would allow for the estimation of both the likelihood of events as well as the associated potential losses.

56. The integration of climate-related risks in the underwriting assessment involves enhancement of underwriting practices due to the need to consider the relevant liability, transition and reputational risks. As such, supervisors should encourage insurers to include the assessment of climate-related risks as part of their underwriting assessment for each client where material. Where relevant, the underwriting assessment should be enhanced to consider:[15]

- The track record and commitment of the client in managing climate-related risks[16];

[14] The evaluation criteria for such sectors may include the level of greenhouse gas emissions, vulnerability to extreme weather events, and linkages to unsustainable energy practices, deforestation and pollution. Examples of such sectors may include agriculture, chemicals, defence, forestry, infrastructure and mining.

[15] Both historic and forward looking considerations should be taken into account in underwriting assessments.

[16] Especially in case of material exposure to liability as well as reputational risk and where the terms and conditions of the insurance policy do not set out mitigating obligations on the client to manage climate-related risks or the fulfilment of such contractual obligations would be difficult to verify after a claim.

- The ability and willingness of each client to mitigate the identified climate-related risks associated with the transaction;
- The duration of the policy; and
- The need to impose underwriting conditions[17] to require clients that are assessed to pose higher climate-related risks to take steps to mitigate those risks.

57. Insurers may choose to use ratings developed by external parties or develop their own climate risk assessment methodology to incorporate climate-related risks in the underwriting assessment. For transactions that are assessed to involve higher climate-related risks, it may be appropriate for supervisors to expect insurers to perform additional due diligence procedures[18] to obtain a more informed understanding of the climate-related risks associated with the transaction. It may also be appropriate for insurers to incorporate climate-related risk exposures into the underwriting authority grid, such that transactions that are assessed to involve higher climate-related risks require internal escalation for approval.

5.1.3. Monitoring of underwriting exposure to climate-related risks

58. Climate change is already causing changes to the frequency and severity of loss events, which in turn may increase the risk profile of an insurer's business portfolio. For instance, changes in weather patterns could increase the physical risks of certain geographical areas. Additionally, certain non-life policies may face increased liability risks as a result of evolving legal approaches and increased litigation linked to climate-related risks.

59. Hence, supervisors should encourage insurers to develop appropriate tools and metrics to monitor their underwriting exposures to climate-related risks. Such tools and metrics may be used, for example, to monitor underwriting exposures to and concentrations in geographical areas or sectors that are assessed to pose higher climate-related risks (such as peril regions). This would enable insurers to take appropriate mitigating measures to manage any potential build-up in concentration of exposures to geographical areas or sectors with higher climate-related risks.

5.2. Own Risk and Solvency Assessment (ORSA)

60. The unique business strategy, investment portfolio and risk profile of each insurer will affect the degree of impact arising from climate-related risks. The nature and materiality of the relevant insurance, credit, market, concentration, operational and liquidity risks will vary depending on the climate-related risk exposures of each insurer. Hence, the ORSA is a particularly useful tool for insurers to assess the adequacy of their ERM and capital position. Supervisors should expect insurers to consider all material physical, transition and liability risks arising from climate change in its ORSA process, and adopt the appropriate risk management actions to mitigate the identified risks accordingly.

61. As part of the ORSA, the insurer assesses its risk management and financial resources over a longer time horizon than used to determine regulatory capital requirements. However, depending on the business mix, this typically still only covers a 3 to 5 year period. For some pure non-life insurers with short duration contracts, the horizon might be shorter than 3 years. Some climate change risks may take longer to fully materialise, and therefore it would be

[17] Such conditions may include the development of a sustainable transition strategy and the adherence to relevant environmental certification standards.
[18] Such procedures may include on-site visits to the client or risk location or external expert review.

expected that the ORSA also includes appropriate scenarios that use a more extended time horizon, where relevant.

5.2.1. Stress and scenario testing of climate-related risks

62. As part of the ORSA, an insurer is required to perform a continuity analysis to assess its ability to manage its risks and meet its capital requirements under a range of plausible adverse scenarios with a forward-looking perspective in mind. When material, this analysis should include the identification and assessment of the direct and indirect impact of climate-related risks, including as part of the scenario analysis and (reverse) stress testing process. This would enable insurers to assess their resilience to financial losses with respect to climate risks. This process should incorporate an assessment of physical, transition and liability risks:

- Physical risks use catastrophe modelling including a number of different scenarios (eg 1-100 to 1-500 or 1-1000 year events). This may also include the identification of a scenario that could potentially cause insolvency;
- Transition risks may include an assessment of how increases in carbon taxes, stricter environmental regulations and a low-carbon economy would impact both assets and technical provisions; and
- Liability risks involve assessments of the risks resulting from potential changes in societal, litigation and judicial environments. Insurers offering claims-made policies should have an understanding of the potential impact on their liability risks as a result of increasing pressure on Boards to manage their companies in a responsible manner, especially as it relates to the environment, and should consider appropriate exclusions and/or limits.

63. Parameters and assumptions for climate-related stress testing scenarios may be adopted from modelling work performed by meteorological agencies, regulators or other external experts. For example, there are statistical models to determine the frequency of flooding events, and modified economic models to estimate the economic or financial impact of various climate shocks. Supervisors should encourage insurers to adopt the relevant models that are pertinent to their geographical scope and nature of business. It is important for insurers to fully understand these models and their underlying assumptions and methodologies when deciding on their relevance.

64. If climate-related risks are assessed to be not material by an insurer, this should be clearly documented and explained in the ORSA documentation to allow for a supervisory review.

Box 3: Examples of supervisory practice on ORSA and stress testing

Canada

In Canada, certain IAIGs have included a climate risk scenario in stress testing in the last two years. In 2019, it included both first-order impacts (loss of value in physical assets in high-risk flooding regions) and second-order impacts on the asset portfolio due to a shift to green industries and reduced market value of securities related to fossil fuels businesses.

Chinese Taipei

The Financial Supervisory Commission (FSC) will require insurers to assess the impact of climate change in the 2020 ORSA Supervisory Report, including risk identification of

climate change, major risk exposure status, risk assessment methods and related response strategy.

The Netherlands

In its Good Practice and Q&A document,[19] *De Nederlandsche Bank* formulates principles on how insurers should integrate climate-related risks in the ORSA based on the outcomes of an analysis of ORSAs submitted in 2018. These are summarised below.

On the asset side of the balance sheet, insurers were asked to consider the following:

Physical risks

- Damage to collateral, such as real estate, investments or exposure to other real estate investments; and
- Write-down of bonds and equities of companies whose property or processes are exposed to physical effects of climate change.

Transition risks

- Write-down of loans to and investments in companies with large carbon footprints that are sensitive to an energy transition (stranded assets);
- Write-down of mortgage loans and investments in non-sustainable real estate; and
- Increasing risks for mortgage loans, bonds and businesses that are vulnerable to an energy transition, which means higher capital buffers are required for such assets.

When designing climate-related scenarios for the ORSA, insurers were asked to consider the following:

- Use of country-specific scenarios (eg scenarios developed by regulators or meteorological agencies);
- Adopt the relevant principles of climate-related stress tests performed by regulators; and
- Integrate indirect effects of climate-related risks that may lead to an increase in claims into scenario and impact analyses, such as potential health risks and increased mortality rates.

The following examples mainly relate to supervisory stress testing but may nevertheless provide valuable examples related to defining relevant scenarios, and setting up stress testing exercise.

France

In 2020, a first climate risk evaluation will be carried out by the ACPR in the banking and insurance sector. The exercise aims to take stock of the availability of data and the suitability of current modelling approaches, and more broadly to improve understanding of the interactions between climate change and the macro-financial realm.

To link climate and policy shocks with their financial impacts, the *Banque de France* has adapted the National Institute Global Econometric Model (NiGEM) to yield macroeconomic shocks at the country level following an increase in carbon prices. The baseline scenario for the exercise assumes that the emissions goals of the Paris Climate Agreement will be achieved, with three variants:

[19] See https://www.toezicht.dnb.nl/en/binaries/51-237999.pdf and https://www.toezicht.dnb.nl/en/3/50-237997.jsp.

- A disorderly transition without favourable technological developments;
- A €200 per ton carbon tax implemented in 2025; and
- A €300 per ton carbon tax implemented in 2030 with accompanying shocks to productivity levels.

Insurers will carry out projections for 2025 using a static balance sheet from 2020, while further horizons (2030 and 2040) can integrate management decisions intended to mitigate financial risks, in line with the insurer's previous communication. The ACPR expects to publish the results of the exercise by the end of Q1 2021.

Singapore

The Monetary Authority of Singapore (MAS) regularly conducts Industry-Wide Stress Tests (IWST) for selected direct insurers representing at least 80% of the market.

MAS included a climate variability scenario in the 2018 IWST, to raise the insurance industry's awareness of the financial impact of climate change on the insurers' capital positions, so as to enable insurers to consider the relevant climate-related risks as part of their ERM framework.

The climate variability scenario required direct general insurers to estimate the impact of severe flooding in Singapore (at an average depth of 600 millimetres) by assessing the impact on their exposures through insured properties (by considering a list of flood-prone areas in Singapore). Insurers were also required to provide qualitative assessments on the possible implications on their business lines such as motor and public liability insurance. The introduction of climate variability scenario helped to raise the industry's awareness on the impact of climate-related risks to their business portfolio, and provided MAS with a deeper understanding of the industry's flood-risk exposure.

MAS is working on refining future stress test scenarios relating to climate risks such as lengthening the stress test time horizon and to broaden the scenarios to include assessment of transition risks. Through the introduction of climate-related stress scenarios in the IWSTs, MAS aims to raise industry awareness about climate-related risks relevant to the Singapore insurance industry and encourage insurers to adopt relevant stress scenarios (where applicable) in their ORSAs.

United Kingdom

The Bank of England ("the Bank") conducts biennial industry-wide insurance stress tests (IST) for the UK's largest regulated life and general insurers representing more than 70% of the market. In 2019 the IST included an exploratory climate scenario assessing the impacts to assets and liabilities arising from physical and transition risks. The exercise included three scenarios that explored a range of potential greenhouse gas transitions including the Paris Agreement, a disorderly transition and a high physical risk scenario.

Despite being voluntary, all firms completed the exercise, enabling the Bank to (i) raise the climate agenda at Board level; and (ii) identify and understand weaknesses in the current capabilities, tools and data available in assessing the potential impacts from climate change.

In 2021, informed by the findings from IST 2019, the Bank will test the resilience of the UK financial system to the physical and transition risks associated with different climate pathways over a number of decades. The desired outcomes are to (i) size the financial exposures of participating firms and the financial system more broadly to climate-related risks; (ii) understand the challenges to participants' business models, and investigating interdependency between insurers and banks; and (iii) assist participants in enhancing

their management of climate-related financial risks, including encouraging firms to take a strategic, long-term view to addressing climate risks and highlighting data gaps that need to be filled for effective disclosure.

United States

US ORSA requirements as described in the NAIC ORSA Guidance Manual,[20] require insurers to explain how they identify, assess, monitor, prioritise and report all material and relevant risks. To the extent that an insurer deems climate-related risks material to its business strategy and operations, these risks should be disclosed in the annual ORSA Summary Report filing with the regulator. The determination as to whether climate-related risks are material is made in the first instance by the insurer and later reviewed by the supervisor. The supervisor has the authority to require the insurer to incorporate climate-related risks into its ORSA and/or require changes in assumptions and scenarios utilised by the insurer in this area.

The California Department of Insurance has initiated multiple efforts and partnerships since 2015, developing new strategies to test insurer exposures to fossil fuel investments and climate-related transition risks. For example, the Department partnered with 2 Degrees Investing Initiative, which conducted a comprehensive financial stress test analysis for the insurance sector.[21] In addition to this scenario analysis stress test, the Department also developed a database for insurer investment information related to fossil fuels.[22] Both the scenario analysis stress test and the database provide a foundation for future policy work.

6 Investments

65. The Introductory Guidance in ICP 15 (Investments) explains how quantitative and qualitative requirements should take account of the risks that insurers face through their investments, in order to ensure that assets are "sufficient to cover technical provisions and capital requirements".[23] Additionally, certain standards within ICP 16 require the insurer's ERM framework to include an explicit asset liability management (ALM) policy and an ERM framework that addresses risks from investments.[24]

66. Physical and, especially, transition risks can have complex and non-linear impacts on insurers' investments. These risks must be taken into account regardless of whether the insurer invests directly or through a third-party asset manager or investment advisor. This section provides guidance related to supervisory expectations on investments. Box 4 includes examples of relevant supervisory practice.

67. Both transition and physical risk have the potential to affect investments via credit/counterparty default risk (eg an increase in the probability of default or loss given default), market risk (eg a change in the value, trend, or volatility of an asset or derivative, in particular equity, property or spread risk) as well as liquidity risk (eg as a result of a sudden unexpected increase in claims as a result of a natural catastrophe or pandemic). This also includes second-order effects such as indirect losses in insurers' investments due to the

[20] See https://content.naic.org/sites/default/files/inline-files/prod_serv_fin_recievership_ORSA-2014_1.pdf
[21] See https://interactive.web.insurance.ca.gov/apex_extprd/f?p=250:70
[22] See https://interactive.web.insurance.ca.gov/apex_extprd/f?p=250:1:0
[23] See ICP 15.1.1
[24] See ICP 16.5 and 16.6

devaluation of financial counterparties that have high exposures to those climate-sensitive sectors, or the impact of changing investor sentiments on market values.

68. ICP 15.1.1. states that the quality and characteristics of an insurer's asset portfolio and the interdependence between the insurer's assets and its liabilities are central to the assessment of an insurer's solvency position and, therefore, are an important aspect to be addressed by the supervisor and for an insurer to manage. In assessing the risks attached to the asset, it is also prudentially relevant for supervisors to enquire as to the impact of the insurer's investment from climate change as it has the potential to impact the risk-return characteristics of a portfolio.

Asset liability management

69. ICP 15 requires insurers to invest in assets that are secure and available, so that payments to policyholders or creditors can be made as they fall due and assets are adequately diversified. ICP 16 requires insurers to include an ALM policy within their ERM framework, which helps insurers asses the ability to pay policyholders or creditors on a timely basis.

70. Climate change can negatively affect the matching of assets and liabilities primarily through transition risk as many insurers use longer-term bonds to match the liability cash flows. Due to the long-term nature of the bonds, insurers should consider the potential that individual firms or an entire sector, could be significantly impacted over the matching period when constructing their investment portfolios. Correlation between different asset classes would also be an important consideration.

71. The time horizon is an essential component as the impact of climate change on insurer's investment portfolios may fully materialise over an extended period and therefore impact either the value or expected cash-flows from financial assets only in the long-term. Transition risks, arising from political decisions, regulatory policies, changing demand or investor expectations, can happen at any time and suddenly, and thus require undertakings to think about their investment strategy now. Therefore, the time horizon is an essential component for defining the investment strategy. ALM would be particularly important for long-tail business given the long duration of their liabilities coupled by climate change risks that can materialise over an extended period.

Risk assessment of investments

72. ICP 15 requires insurers to invest only in assets for which it can properly assess and manage the risks.[25] For that reason, a forward-looking view with quantitative and qualitative data, as well as the use of scenarios, can help overcome potential limitations of historical and market data and help insurers consider how their investments may be impacted in different climate scenarios.[26]

73. External credit ratings can assist the insurer in determining the credit risk of an investment. However, insurers should ensure that the rating methodology is sufficiently transparent to allow them to understand the ratings provided for their investments. Insurers should also consider the extent to which climate risk has been factored into the rating as well as the time horizon of the assessment.

[25] See ICP 15.4

[26] See NGFS (2019).

Stewardship

74. Certain institutional investors, including insurers, apply engagement strategies to steer the activities of the assets they are holding (where their shareholders' rights allow). This is one aspect of stewardship by which investors would act to influence the strategy and business of the firms in which they are investing to progress towards sustainable economic activities.

75. Some supervisors promote such stewardship, for example EIOPA, as indicated in its opinion on integrating sustainability risks within Solvency II,[27] deems that "the transition towards a more sustainable economy should rely on this principle. From a prudential point of view, this can greatly contribute to the management of sustainability risks." This may include insurers' active engagement with investees to achieve sustainable investment outcomes through voting strategies or other investment strategies such as, for example, exclusions (negative screening), norms-based screening, integration of ESG factors, best-in-class (positive screening), sustainability themed investments or impact investing.

76. In order to be effective, an engagement strategy with the investee company may include exercising voting rights as a shareholder, sending letters to or attending meetings with the management of investee companies, setting up documented and time-bound engagement in actions or shareholder dialogue with specific sustainability objectives, planning escalation measures in case those objectives are not achieved, including reductions of investments or exclusion decisions.[28]

Box 4: Examples of supervisory practice on Investments

Chinese Taipei

The FSC has required insurance associations to incorporate climate change issues in investment-related specification as a tool to encourage insurance companies to pay close attention to climate change issues. The insurance industry should review whether the lenders are doing their best to protect the environment, conduct business with integrity and social responsibility, and the overall investment policy formulated by the insurance industry should include projects for environmental protection, corporate integrity and social responsibility.

European Union

In the EU, the prudent person principle, which is the overarching principle under Solvency II and requires that undertakings only invest in assets whose risks they can properly identify, measure, monitor, manage, control and report on, could be revised. The EIOPA 2019 technical advice on integrating sustainability risks and factors within Solvency II advises on a change of the regulation to consider mention that undertakings should consider sustainability risks in the process of assessing the security, quality, liquidity and profitability of the investment portfolio, as required by the "prudent person principle". The European Commission is preparing legal changes based on EIOPA's technical advice.[29]

[27] See EIOPA (2019), Opinion on Sustainability within Solvency II.
[28] See ESMA (2020), Joint Consultation Paper on ESG disclosures.
[29] *https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/11961-Integration-of-sustainability-risks-and-factors-in-relation-to-the-business-of-insurance-and-reinsurance*

7 Public Disclosure

77. The objective of ICP 20 (Public Disclosure) is to require insurers to disclose relevant and comprehensive information in a timely manner in order to give policyholders and market participants a clear view of their business activities, risks, performance and financial position, which enhances market discipline.[30] Public disclosures on emerging(ed) risks, including climate change, are of primary relevance to this objective. In establishing disclosure requirements for climate risks, the supervisor should take into account proprietary and confidential information that could negatively influence the competitive position of an insurer if made available to competitors.

78. ICP 20 requires insurers to provide information on all material risks faced by the company and its management. If climate-related risks are material to the insurer, it follows from ICP 20 that information thereon must be disclosed. The level and type of information disclosed may depend on the line of business; for example, disclosures on climate-related risks on an insurers' investment portfolio are likely to be more extensive for life insurers with long duration insurance contracts, while non-life insurers that write one-year contracts are likely to focus relatively more on their underwriting and risk management considerations of climate risk. However, this does not mean that the investments of non-life insurers are not exposed to climate risk, and that this risk should be neglected.

79. Supervisors that are considering the introduction of mandatory climate risk disclosure requirements may wish to consider a range of approaches, recognising the iterative nature of disclosure processes and early stages of certain aspects of climate risk assessment methodologies. In addition, as ICP 20 allows supervisors to meet the standard through public general-purpose financial reports, supervisors may want to consider allowing insurers to augment those disclosures with relevant climate-related information, if applicable, rather than requiring duplicative disclosures for regulatory purposes.

80. Supervisors may also use the Financial Stability Board (FSB) TCFD Framework when designing best practises or as input for setting their own supervisory objectives. Going forward, supervisors may seek to adopt or make reference to various aspects of the TCFD framework in their interpretation of the various ICPs discussed in this Paper, in particular ICP 20.

81. The remainder of this section discusses those Standards of ICP 20 that are deemed most relevant in determining how comprehensively insurers have publicly disclosed the interplay between climate change and their business. Box 5, on page 31, provides several examples of supervisory practice around climate-related disclosure requirements.

7.1. General disclosure requirements

82. Enhancing the availability and quality of climate-related information is now widely understood to be a foundational component of market and policy action to address climate-related risks. Insurers should incorporate in their disclosure the extent to which their risk profile exposes them to the impacts of climate-related risks. Insurers should disclose the metrics used to assess climate-related risks and opportunities in line with their strategy and risk management process and how the metrics are set, tracked and rewarded across the organisation. They should also describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.

[30] This includes existing and potential investors, lenders and other creditors.

83. Insurers that perform climate-related scenario analysis on their underwriting activities should disclose a description of the climate-related scenarios used, including the critical input parameters, assumptions and considerations, and analytical choices. Insurers should also indicate how the assumptions and parameters align with their risk appetite and strategic business direction.

7.2. Company profile

84. Insurers should describe the climate-related risks and opportunities the insurer has identified over the short, medium and long term, the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.

85. The information should include supporting quantitative information where available, on their core businesses, products, and services, including information at the business division, sector, or geography levels. Insurers should also disclose how the potential impacts of climate-related risk influence client, cedent, or broker selection, and whether specific climate-related products or competencies are under development, such as insurance of green infrastructure, specialty climate-related risk advisory services, and climate-related client engagement.

86. Insurers should provide information on how their business impacts the environment and climate to enable users to both understand the impact of climate change on the insurer as well as the impact to the environment from the insurer.

7.3. Corporate governance framework

87. Disclosures should describe the Board's oversight and Senior Management's role in assessing and managing climate-related risks and opportunities. Insurers should also describe the organisation's processes for identifying and assessing climate-related risks, and describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management. They should also describe how risk and opportunities are communicated internally (eg management reports) across the company and where they are communicated externally (regulatory filings, company reports, TCFD, etc.) and what efforts are made to engage key stakeholders on the topic of climate change.

7.4. Insurance risk exposures

88. Insurers should disclose the process by which they have identified, assessed and managed climate-related risks and opportunities. Insurers should be able to evidence this in their written risk management policies, management information, and Board risk reports. Insurers should set out the process for undertaking scenario analysis, taking into consideration different climate-related scenarios, including physical, transition and liability risk scenarios, and the rationale and limitations of the chosen approach. Insurers should disclose the process for integrating climate-related risks and opportunities into underwriting processes across the business (considering relevance to the nature of the business) over the short, medium and long term. They should also describe the actions taken as reaction to climate change risks, which could include, for example, new exclusion policies, an updated risk appetite statement, new underwriting targets and client engagement efforts. Where third party models have been used, the insurer should provide a description of how they have vetted the design and calibration of the model, and how it ensures the ongoing validation with the underlying data.

7.5. Financial investments and other investments

89. Insurers should disclose how climate-related risks and opportunities are factored into relevant investment strategies. This could be described from the perspective of the overall investment strategy or individual investment strategies for various asset classes.

90. Insurers should disclose how investment decisions assess and address assets, such as real estate and mortgage-backed investments, which are more vulnerable to rising ocean levels, coastal flooding and storms, drought, wildfire and other natural disasters. They should describe how climate risks are factored into investment decisions and processes, and the potential impact of any high-carbon assets on capital adequacy. They should also disclose any considerations for investing in funds focused on innovation, clean technologies and biofuels or in companies committed to climate resilience, how the current investment diversification and geographical asset allocation addresses climate risk, and the efforts to diversify or divest against climate risk and any resulting financial impact.

Box 5: Examples of supervisory practice on disclosure requirements

See also the IAIS/SIF 2020 Issues Paper for further case studies from various SIF/IAIS Members taking a range of actions to strengthen climate risk disclosures.

European Union

In December 2019, Regulation (EU) 2019/2088 on sustainability-related disclosures in the financial services sector, was published and will be directly applicable in all EU Member States from 10 March 2021. It will apply to financial market participants and financial advisers, including insurers. It lays down harmonised rules on transparency with regard to the integration of sustainability risks, the adverse impact on the investment portfolio and the transparency on ESG characteristics of products marketed as “green” or “social” products. With this regulation, sustainability-related disclosure within the EU should improve considerably.

France:

According to article 173 of the French law on ecological transition and green growth, passed in August 2015, French insurers are required to disclose how they take into account ESG criteria in their investment decisions.

ACPR published in April 2019 the main findings of the review of these reports, with the view to call upon insurers to better take into account and manage ESG risks, primarily by developing a prospective approach and making use of appropriate scenarios:

- 76% of the sample issued a dedicated report and 24% included this information in a pre-existing report, such as the annual report;
- All insurance groups described their consideration of ESG criteria and labels used. Almost all insurers implemented an exclusion or divestment policy, mostly on the basis of environmental criteria (for instance, divestment from coal mining) and have an investment policy in green bonds;
- The measure of carbon intensity of assets is the most widespread metric for these investment decisions. Other metrics used come from credit rating agencies or public institutions; and
- Only half of the sample specifies whether the climate-related risks to their business are physical or transition risks, whereas article 173 requires financial institutions to report on their exposure to climate risks, especially the GHG emissions of the assets they own (transition risk). Little information is published on how ESG risks

are managed. Some groups indicate they use stewardship to influence ecological transition of undertakings they invest in. Some groups also set up a team dedicated to social responsible investment.

Japan

According to the Act on Promotion of Global Warming Countermeasures and the Act on Rationalizing Energy Use, it is mandated for companies emitting GHGs above certain thresholds to report to the government, which collects and discloses the information. Additionally the Corporate Governance Code, which was adopted by listed companies on a comply-or-explain basis, calls for broader stakeholder engagement highlighting the importance of ESG.

Furthermore, Japan has the highest number of TCFD supporters in the world amounting to 273 institutions (as of May 2020). This includes 12 insurers, which covers more than 70% of the total assets of the sector. The TCFD Guidance, which is to be revised by the TCFD Consortium this summer, will include specific guidance for life and non-life insurers to further enhance their climate-related disclosure.

Switzerland

At the regulatory level, the Swiss Financial Market Supervisory Authority FINMA is reviewing approaches for improved disclosure of financial climate risks by major financial institutions, in order to improve transparency and market discipline. *Note: This input will be updated after the public consultation.*

United Kingdom:

In 2015, Mark Carney, in his capacity as chair of the FSB, established the TCFD. The Bank of England ("the Bank") and Mark Carney, in his capacity as its Governor, has promoted the importance of clear and reliable climate disclosures to regulated firms, including insurers.

In 2019, the Bank strengthened its support for climate-related financial disclosures by setting out expectations in a supervisory statement[31] that PRA-regulated firms "develop an approach to disclosure on the financial risks from climate change". This asked firms to:

- Consider whether further disclosures (beyond existing requirements) are necessary to enhance transparency on their approach to managing the financial risks from climate change;
- Develop and maintain an appropriate approach to disclosure of financial risks from climate change; and
- Engage with wider initiatives on climate-related financial disclosures, such as TCFD, and to take into account the benefits of disclosures that are comparable across firms.

To help inform the Bank's view of best practice, beyond what it has stated in the 2019 supervisory statement, the PRA has established the Climate Financial Risk Forum jointly with the Financial Conduct Authority. The objective of this industry forum is to build capacity and share best practices to advance financial sector responses to the financial risks from climate change. The forum has set up four technical working groups to produce practical

31 https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/supervisory-statement/2019/ss319.pdf?la=en&hash=7BA9824BAC5FB313F42C00889D4E3A6104881C44

tools and guidance; one of the four working groups is focused on disclosure. The outputs from the Forum were published at the end of June 2020.[32]

Finally, the UK Government's Green Finance Strategy sets an expectation for publicly listed and large asset owners to disclose in line with the TCFD Recommendations by 2022. To help operationalise this expectation, the Bank is a member of a joint taskforce of UK regulators, chaired by the Government, to examine the most effective way to approach disclosure, including exploring the appropriateness of mandatory reporting.

United States:

In the US, the Climate Risk Disclosure Survey was adopted by the NAIC in 2010. Currently, the survey is being administered in a multi-state initiative that includes California, Connecticut, Minnesota, New Mexico, New York and Washington. The survey's eight questions ask insurers to provide a description of how they incorporate climate risks into their mitigation, risk-management, investment and business plans and identify steps taken to engage key constituencies and policyholders on the topic of climate change.

Responses are collected annually from insurance companies with direct written premiums over USD 100 million (about 1,200 individual insurers representing over 70% of US direct written premium) and annual responses are organised into a publicly accessible database, located on the California Department of Insurance website.

Insurers were encouraged to incorporate FSB TCFD guidelines when answering the survey in 2019, which could effectively align the survey with the TCFD guidelines. For the 2020 Climate Risk Disclosure Survey, participating insurers will be allowed to submit a TCFD report.[33]

[32] https://www.bankofengland.co.uk/climate-change/climate-financial-risk-forum

[33] More about the survey, including all survey responses over the past ten years, can be found at the following link: http://www.insurance.ca.gov/01-consumers/180-climate-change/ClmtRskDsclsrSrvy.cfm