

Insurance Industry Perspectives on Regulatory Approaches to Climate Risk Assessment



Issue brief

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**The Geneva Association Task Force
on Climate Change Risk Assessment for the Insurance Industry**

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Abstract

Since 2017, following the release of the Financial Stability Board's Task Force on Climate Related Financial Disclosures (FSD-TCFD), climate risk assessment and related disclosures are gaining momentum among financial services and insurance regulators and standard-setting bodies. This report offers a broad overview of benefits and challenges associated with current regulatory approaches to climate change risk assessment and scenario analysis. The development of climate risk assessment methodologies and tools, such as scenario analysis, that would produce meaningful and decision-useful information is a work in progress. Much work lies ahead because of the quickly evolving nature of climate science as well as other factors that will influence transition efforts. Achieving consensus will take time. This report also highlights additional benefits that could be realised from further strengthened collaboration between the insurance industry and regulatory and supervisory bodies as well as among regulators from different jurisdictions, globally.



1. Executive summary

Since 2017, following the release of the Financial Stability Board's Task Force on Climate-Related Financial Disclosures (FSD-TCFD), climate risk assessment and related disclosures are gaining momentum among financial services and insurance regulators and standard-setting bodies. Efforts by a number of international, regional and national regulatory and standard-setting bodies have been underway to experiment and share experiences related to methodologies and approaches for forward-looking climate risk assessment and scenario analysis.

The use of scenario analysis for climate risk assessment is an explicit recommendation of the TCFD. Scenario analysis allows for a systematic process for making strategic decisions in the face of significant uncertainties. Climate risk analysis intrinsically requires a forward-looking approach and needs to be designed with concrete objectives for the exercise in mind. Furthermore, the interpretation of the output needs to take into consideration the inherent uncertainties associated with how physical and transition risks will evolve over future time horizons.

Climate risk analysis requires a forward-looking approach and needs to be designed with concrete objectives for the exercise in mind.

Development of climate risk assessment methodologies and tools, such as scenario analysis, that would produce meaningful and decision-useful information is a work in progress. Despite some actions by stakeholder groups (e.g. re/insurers, financial institutions, regulatory and standard-setting bodies, international organisations, commercial data providers, consulting firms and academia), initiatives remain fragmented and considerable work lies ahead because of the quickly evolving nature of climate science as well as other factors that will influence transition efforts. Achieving consensus will take time.¹

The Geneva Association Task Force on Climate Risk Assessment for the Insurance Industry (hereafter referred to as the GA Task Force) in its first report recommended that climate risk analysis should be anchored in a holistic decision-making framework for both sides of the balance sheet, taking into consideration physical and transition risks and two time horizons for business (short term) and strategic (long term) decisions. It also stressed that inherent uncertainties associated with transition risk (i.e. public policy, legal, technology and market risks) across future time horizons should be considered in the design of the scenarios and interpretation of the results. It further noted that a combination of qualitative and quantitative approaches for assessing climate change risk would be required, based on the time horizons. Particularly over long-term horizons (e.g. to 2050 or beyond), qualitative

¹ The Geneva Association 2021a. Author: Maryam Golnaraghi et al.

approaches may be more appropriate for strategic steering. It highlighted the need for further experimentation, sharing expertise and lessons learned. The GA Task Force is also proactively engaging with other key stakeholders, including regulatory and standard-setting bodies and the scientific community.

A combination of qualitative and quantitative approaches for assessing climate change risk is required, based on the time horizons and taking into consideration transition uncertainties.

In this report, based on the review of the activities of a number of international, regional and national financial services regulatory bodies, we offer a broad overview of the benefits and challenges associated with current regulatory approaches in climate change risk assessment and scenario analysis. The report also highlights additional benefits that could be realised from further strengthened collaboration between the insurance industry and regulatory bodies as well as across regulatory and standard-setting bodies globally. Key findings of this report are highlighted below:

Key findings

- 1. There is growing action by financial services' regulatory and supervisory bodies to understand the potential impact of climate change.** Much of the regulatory focus to date has been on transparency supported by public disclosure; however, regulatory interest in climate change risk assessment and scenario analysis is growing at the international, regional, national and sub-national levels. Actions by a wide spectrum of regulators are relevant to re/insurers, given the highly regulated nature of the insurance business.
- 2. While regulators' initiatives in climate risk assessment have been helpful in promoting dialogue on climate change risk, raising risk awareness and encouraging new thinking, there are a number of challenges with and proposed considerations for the status quo:**
 - a. The objectives of many climate-focused regulatory exercises and stress tests need to be clearly stated.
 - b. Regulatory exercises need to be designed to produce meaningful results that clearly tie back to the objective(s) to ensure the best use of stakeholders' resources. Methods considered for the analysis should be clearly linked to the objective with an explanation of how that approach will deliver meaningful and decision-useful output. This explanation should address key challenges of climate modelling: e.g. breadth/magnitude of transition and physical risks, extended/uncertain time horizons and weaknesses in many climate economic models when modelling 'more extreme scenarios'.
 - c. Specifically, use of prescriptive quantitative approaches to examine impacts over longer time horizons can dilute the decision usefulness of results as the inherent uncertainties associated with the analysis are not inherently considered in the interpretation. For example, the physical risks of climate change are largely evolving and re/insurers will be able to employ a wide range of risk mitigation measures, which can be difficult to account for in a quantitative manner, to reduce exposures that emerge over longer time horizons.
 - d. A variety of data-related issues pose challenges with comparability and reliability of the analyses, particularly for quantitative exercises over long-term horizons. Examples include the need for considering the inherent uncertainties associated with markets, public policy, litigation and technology; non-linearities and feedback mechanisms within the climate system; accessibility and consistency of exposure and vulnerabilities of assets; and adaptation and mitigation measures undertaken by various stakeholders such as governments that may impact a company. Furthermore, the identification of decision-relevant risk metrics needs to be supported by defining relevant indicators and materiality thresholds (i.e. what needs to be analysed for risk).
 - e. Depending on the objective, some exercises may warrant a more holistic approach, accounting for the interaction between both sides of the balance sheet, as well as the interplay of all aspects of climate change risks, i.e. physical and transition risks by line of business (LoB), and for distinct time horizons.

3. **The wide variety of initiatives undertaken leads to duplication of efforts and potentially inefficient use of scarce resources** (including that of highly specialised experts). Better coordination among the regulatory bodies would greatly benefit all stakeholders.
4. **It is important to be agile as climate science and the methods for assessing the impacts of climate change on re/insurers' assets and liabilities are evolving quickly.** As such, regulators should consider the feasibility of lighter-touch reviews instead of deeper, more extensive studies that may become outdated quickly.
5. **Further strengthened collaboration between the insurance industry and regulatory and supervisory bodies, as well as among the regulatory community globally is critical** and can expedite exploring, evaluating and developing best practices in this field. Regulators are undertaking a variety of different approaches to engage with the financial sector and insurance companies, such as setting up industry-led forums and processes, public consultations, conducting surveys and calling for voluntary disclosure of climate risks. Platforms such as the FSB, Network for Greening the Financial System (NGFS), the International Association of Insurance Supervisors (IAIS) and the Sustainable Insurance Forum

(SIF) offer mechanisms to enable collaboration among regulatory bodies and other stakeholders.

Over time, the collective experiences of the industry and regulatory community can inform convergence of best practices. There is a need for global alignment and collaboration. To help achieve this, the Geneva Association Task Force recommends the following:²

- a. Strengthened engagement of regulators and the insurance industry would accelerate lessons learned and access wider expertise. The industry has intensified its efforts on methodologies and approaches to assess how climate change risks may affect their underwriting and investment decisions. The sector and its stakeholders would be best served by expanding the current levels of collaboration between the insurance industry and the regulatory community with focus on exploring and developing best practices in the field.
- b. Coordination among the global regulatory community is also vital. As climate change is a global phenomenon, cross-jurisdictional regulatory discussions would increase awareness and understanding of the potential risks climate change presents, allow for sharing of lessons learned and alignment.



² IIF 2021.



2. Introduction

The insurance industry is working at the forefront of understanding and assessing emerging risks and developing risk management solutions to mitigate these risks. The risks associated with climate change are one such topic and the industry has been proactively engaging in various intra- and inter-sectoral projects and leading in a number of areas.³

Climate risk assessment and scenario analysis is essential for assessing emerging risks related to climate change, under uncertainty.⁴ The analysis of such risks intrinsically requires forward-looking 'scenarios', which is conceptually different from statistical probabilistic approaches such as catastrophe risk models that are traditionally used by re/insurers.⁵ Contrary to the probabilistic approach, which is supposed to provide the full spectrum of outcomes in all possible scenarios, a scenario describes only one 'deterministic' situation, which is specified by a set of assumptions. In the most general case, the probability of a given scenario occurring is zero, insofar as a scenario is nothing other than a 'state of the world'



3 The Geneva Association 2021a. Geneva Association Task Force, and The Geneva Association 2018a. Author: Maryam Golnaraghi.

4 TCFD 2017, 2020.

5 The Geneva Association 2018b. Authors: Maryam Golnaraghi et al.

among the many possible states constituting ‘the universe’. Therefore, the scenario needs to be designed with concrete objectives in mind and the interpretation of the output needs to take into consideration the inherent uncertainties associated with the unknowns (e.g. uncertainties associated with the transition to a low-carbon economy such as public policy, markets, technology and litigation) over the future time horizons.

Despite many initiatives by various stakeholders (e.g. re/insurers, regulators and standard-setting bodies, United Nations Environment Programme Finance Initiative (UNEP-FI), commercial climate data providers, consulting firms) considerable work still lies ahead to converge on best practices for conducting forward-looking climate risk assessment and scenario analysis. Converging to best methodologies and tools will require continued innovation, experimentation, sharing of experiences, and integration of the latest developments in climate change science.

Specifically, since the release of TCFD recommendations,⁶ efforts by a number of international, regional and national regulatory and standard-setting bodies have been underway to explore approaches to forward-looking climate risk assessment and scenario analysis; for example, the International Association of Insurance Supervisors (IAIS) together with the Sustainable Insurance Forum (SIF), the Network for Greening the Financial System (NGFS), the European Insurance and Occupational Pension Authorities (EIOPA), Prudential Regulation Authority (PRA) at the Bank of England (BoE), French supervisory authority (ACPR), De Nederlandsche Bank (DNB), Monetary Authority of Singapore (MAS), Australian Prudential Regulation Authority (APRA), National Association of Insurance Commissioners (NAIC) and various state insurance regulators (e.g. New York Department of Financial Services), the Commodities Futures Trading Commission (CFTC) and in Canada, the Office of the Superintendent of Financial Institutions (OSFI) and Bank of Canada.⁷ In the U.S., as part of the Biden Administration’s climate change agenda,⁸ the Securities and Exchange Commission (SEC) and the Department of Treasury and its Federal Insurance Office have also launched various initiatives in this area.

The Institute of International Finance (IIF) has offered a review of the rapidly evolving supervisory and regulatory approaches to climate and environmental risks facing the banking and insurance sectors.⁹ IIF offers perspectives on what an appropriate and efficient approach could look like

and specifically stresses that the focus of governments should be on creating the right incentives for a transition to a low-carbon and more sustainable economy, without relying unduly on the financial sector to achieve broader policy goals. IIF makes a case that regulatory and supervisory objectives should focus on resilience and system-wide alignment with future climate pathways.

Against this backdrop, this issue brief prepared by the GA Task Force offers a broad overview of the benefits and challenges associated with current regulatory approaches in climate change risk assessment and scenario analysis, based on a review of activities of 12 international, regional, national and sub-national financial services regulatory bodies. The report also highlights additional benefits that could be realised from further strengthening of collaboration between the insurance industry and regulatory bodies as well as among regulatory and standard-setting bodies, globally.

Section 3 provides a brief discussion of regulatory considerations and analysis of the regulatory landscape related to climate risk assessment and scenario analysis. Section 4 offers recommendations for further strengthening multi-stakeholder engagement and collaboration and highlights the benefits that could be realised.

6 TCFD 2017.

7 An analysis of these initiatives are provided in this report.

8 The White House 2021a-c.

9 IIF 2021.



3. Regulatory activities related to climate change

Financial and insurance regulatory and supervisory objectives related to climate change span a wide range of issues, although specific regulatory priorities may differ by jurisdiction. Examples of such objectives include:

1. **Protection of Policyholders:** Ensuring climate change risk does not adversely impact the economic interests of an insurer's policyholders over both the short and long term.
2. **Insurability and affordability of re/insurance** associated with physical risks from climate change: For natural catastrophes (e.g. weather-related extremes), the question of insurability and affordability in some regions is a growing concern for re/insurers and regulators alike. Rising physical risks associated with extreme weather in some regions may lead to higher prices and potentially, insurability or affordability issues in the long-run, particularly in the absence of active climate mitigation and adaptation measures by governments, communities, businesses and households.
3. **Development of insurance markets:** Regulators could have additional objectives, including to develop the insurance market or 'contribute to the development of the national economy and promoting reputation and professional standards in the industry',¹⁰ raising the level of insurance penetration, for example through new product development.
4. **Raising risk awareness,** involving promoting broader recognition and understanding of the risk and, where needed, actions to address material exposures.
5. **Environmental stewardship,** for example, in addition to the primary objective of policyholder protection, some supervisors seek to actively contribute towards a shift to more sustainable economic activities through supervision and regulation of insurer investment and underwriting activities.
6. **Financial stability** with the focus on understanding the intersection between a climate-related disruption to financial stability and the re/insurance sector.

10 OECD 2020.

Since the release of TCFD recommendations,¹¹ regulatory and standard-setting bodies at international, regional, national and sub-national levels are engaging in initiatives related to assessing climate disclosures and public reporting activities. In this section, we offer a broad review of current financial and insurance regulatory activities and approaches with focus on:

- Mechanisms regulators have established for engaging with other regulatory bodies and the industry in addressing climate change;
- Current regulatory approaches to climate risk assessment and scenario analysis;
- Benefits that have been realised from regulatory engagements and exercises; and
- Challenges with status quo approaches in producing meaningful and decision-useful climate risk information.

Our findings are summarised in Table 1 and the Annex, and further described below:

- 1. Through platforms such as the NGFS, FSB, IAIS and SIF, regulators are establishing mechanisms for intra- and inter-regulatory engagement and collaboration, globally.** For example, NGFS started with eight central banks at the Paris 'One Planet Summit' in December 2017, but the membership has grown rapidly to include a broad range of central banks and prudential regulatory authorities, as well as 'observer' standard-setting organisations and multilateral development banks.¹² The SIF is the global network of insurance supervisors and regulators who are working together on sustainability challenges facing the insurance sector with a strong focus on climate change issues.¹³

- 2. Regulators are taking a variety of different approaches to engage with financial institutions and insurance companies.** Specifically, these involve:

- a. *Setting up industry forums*** to bring representatives from across the financial and insurance sectors to advance the thinking, develop guidance, share experiences and discuss good practices for dealing with climate-related risks, assessing the practicality of methodologies for assessment and scenario analysis and related recommendations from the industry. Examples include the Climate Financial Risk Forum (CFRF),¹⁴ established by the Bank of England-Prudential Regulation Authority (BoE-PRA) and Financial Conduct Authority (FCA) and the FSB-TCFD, which has been instrumental in engaging actors from different segments of the financial and insurance sectors as well as supervisory bodies and rating agencies, for development of the TCFD guidelines.¹⁵
- b. *Taking the public consultation route***, seeking feedback from stakeholders in the financial and insurance sectors on proposed opinions, approaches, methodologies and tools; for example IAIS,¹⁶ EIOPA¹⁷ and APRA.¹⁸
- c. *Undertaking survey exercises to gather*** quantitative and qualitative information related to climate change risks and strategic responses from the industry, for example BoE,¹⁹ Bank of International Settlements (BIS)²⁰ and the National Association of Insurance Commissioners (NAIC).²¹
- d. *Calling for voluntary data from the industry*** around certain scenarios, for example ACPR.²²
- e. *Mandating industry*** response to providing climate risk information with the goal to engage the industry at scale; for example, BoE's mandatory reporting of TCFD recommendations in 2022.²³

11 TCFD 2017.

12 About NGFS: <https://www.ngfs.net/en>

13 To undertake its work, SIF's Secretariat is supported by the IAIS, the United Nations Environment Programme (UNEP), and the United Nations Development Programme (UNDP).

14 <https://www.bankofengland.co.uk/climate-change/climate-financial-risk-forum>

15 About TCFD: <https://www.fsb-tcfid.org/>

16 IAIS and SIF 2018 and 2020.

17 EIOPA 2021, 2020a-d and 2019.

18 APRA 2021.

19 <https://www.reuters.com/article/us-climate-change-boe-markets-idUSKBN2711DZ>

20 BIS 2020.

21 NAIC 2020.

22 ACPR 2018, 2020.

23 <https://www.bankofengland.co.uk/news/2020/november/interim-report-and-roadmap-for-implementing-recommendations-of-taskforce-on-climate-related>

3. An assessment of regulators' overall approaches to climate risk assessment and scenario analysis leads to the following categorisation:

a. Prescriptive quantitative approaches based on a scenario that focuses on physical risk, transition risk or both (e.g. using physical risk for the liability side and transition risk for the investment side); for example, BoE, ACPR, DNB, BaFin and APRA.²⁴ These exercises include quantitative single scenario approaches for long-term horizons. It should be noted that when looking at longer-time horizons, the inherent uncertainties associated with the transition and economic development can present a challenge for establishing a sufficiently detailed holistic scenario to guide the exercise. To the extent that regulators advance quantitative approaches, it is critical that the aforementioned inherent uncertainties be adequately recognised when interpreting the results of climate risk assessment exercises. Marrying the results in a holistic manner across the different pillars of an enterprise (e.g. different lines of business, liabilities versus investments) presents another challenge. As a result, while such an endeavour may be beneficial for stimulating discussion on the subject, the decision-usefulness and meaningfulness of the results produced is likely to be highly limited and

would need to be interpreted as such by the firm and/or regulators.

b. Phased, consultative approaches with the industry.

Following the TCFD recommendations, some regulatory bodies are taking a more phased approach that includes engaging in consultations and seeking feedback from the industry. These consultations are of utmost importance to collect industry perspectives and should continue over the years ahead, as knowledge, experience and expertise related to climate change continue to improve.

Regulatory initiatives have been helpful in promoting dialogue on climate change risk; however, knowledge of how climate change and societal responses will affect the financial system and companies is still in its infancy.

4. Regulators' initiatives have been helpful in promoting dialogue on climate change risk, raising risk awareness and encouraging new thinking across



24 BOE 2019, 2020; ACPR 2018, 2020a-b; DNB 2020a-b; BaFin 2020.

various stakeholders; however, overall the knowledge of how climate change and societal responses will affect the financial system and companies is still in its infancy. The development of climate risk assessment methodologies and tools, such as scenario analysis, that would produce meaningful and decision-useful information is a work in progress.

The fast evolving landscape of climate science and other factors such as national public policy and regulations related to the transitioning of economic sectors, technological developments, market response and climate change litigation will have profound impacts on the future scenarios. Further innovation, experimentation, sharing experiences, building on lessons learned and the integration of the latest scientific knowledge are essential to advance the forefront of methodologies and tools and to achieve consensus.²⁵ Further work is also needed to understand the different effects climate change will have on various sectors, geographies and assets, as well as the climate system's tipping points (e.g. changing climate zones, changing ocean circulation, impacts on trade winds, jet stream and gulf stream) and a myriad of other indirect effects such as biodiversity loss and ecosystem degradation.

Finally, the impact of transition risk will be driven by less predictable external forces such as public policy action (policy risk), court rulings (litigation risk), consumer/societal pressures (market risk) and technological advances (technological risk), which need to be considered.

The fast-evolving landscape of climate science, as well national public policy and regulations related to the transitioning of economic sectors and climate change litigation, will have profound impacts on the future scenarios.

5. A number of challenges can be identified with the 'status quo' regulatory initiatives:

a. The objectives of many regulatory exercises need to be further clarified. For the assessment of both short-term and long-term time horizons, anchoring the design of an exercise to a clear decision objective is critical for ensuring the outcomes will achieve the original purpose.

With 'status quo' regulatory initiatives, data issues pose a major challenge, particularly for quantitative exercises; there is no one-size-fits-all methodology, tool or scenario; and there is a lack of coordination across regulatory bodies.

b. Prescriptive quantitative approaches may provide decision-useful results for short-term time horizons, while longer-time-horizons merit a qualitative approach due to the inherent uncertainties associated with physical and transition risks.²⁶

c. Data issues pose a major challenge particularly for quantitative exercises. For example:

- The need to take into consideration the inherent uncertainties;
- Non-linearities and feedback mechanisms within climate systems;
- Accessibility and consistency of exposure and vulnerabilities of assets; and
- Adaptation and mitigation measures being undertaken by various stakeholders that may impact a company.

Furthermore, development of decision-useful risk metrics need to be underpinned by relevant risk indicators and materiality thresholds.

d. There is no one-size-fits-all methodology, tool or scenario, in fact, a variety of approaches (i.e. quantitative and qualitative approaches) and range of scenarios may be appropriate depending on the objectives and time horizons of the exercise.

e. Lack of coordination across regulatory bodies is leading to duplication of efforts. Companies, particularly those operating in many jurisdictions, are investing significant resources in regulatory-driven scenario analysis. Greater coordination across supervisory bodies would enable both insurers and regulators to deploy resources more efficiently.

²⁵ IIF 2021 and The Geneva Association 2021a. Authors: Maryam Golnaraghi et al.

²⁶ The Geneva Association 2021a.

Table 1: Summary of regulatory bodies' current approaches to climate risk assessment and scenario analysis

Organisation	Type of risk	Time horizon	
International Association of Insurance Supervisors (IAIS) and Sustainable Insurance Forum (SIF)	<ul style="list-style-type: none"> Physical Transition Liability 	The Application Paper indicates that 'it is expected that the ORSA also includes appropriate scenarios that use a more extended time horizon' but does not specify	
Network for Greening the Financial System (NGFS)	<ul style="list-style-type: none"> Physical Transition 	2050 and beyond	
European Insurance and Occupational Pensions Authority (EIOPA)	<ul style="list-style-type: none"> Transition (introduction of carbon tax, technological breakthrough, market expectations towards transition to low-carbon economy) Physical (changes in frequency, severity, distribution of extreme weather events) 	<p>Longer than currently considered in the ORSA, e.g. an order of magnitude of decades</p> <ul style="list-style-type: none"> Short term: a higher level of precision is expected in order to help determine whether overall solvency needs improvement 	
Bank of England	<ul style="list-style-type: none"> Physical Transition 	30-year modelling horizon (2020–2050 with five-year intervals)	
	<ul style="list-style-type: none"> Climate litigation 	–	
De Nederlandsche Bank (DNB)	<ul style="list-style-type: none"> Physical Transition 	No specific time horizon references are made	
Banque de France	<ul style="list-style-type: none"> Physical Transition 	2020–2050 (using five-year intervals)	
Federal Financial Supervisory Authority (BaFin)	<ul style="list-style-type: none"> Transition Physical 	Long time horizon (no specifics determined yet)	
Monetary Authority of Singapore (MAS)	<ul style="list-style-type: none"> Physical 	Short term	
	<ul style="list-style-type: none"> Physical Transition 	Short term Long term	

	Methodology (quantitative and qualitative approaches)	Nature of engagement with the industry/other activities
	No specific prescriptive approaches	<ul style="list-style-type: none"> Seeking feedback to papers/reports/plans
	Focus on quantitative analysis	<ul style="list-style-type: none"> Engagement through publication of reports and events Ahead of COP26 NGFS aims to collaborate with industry to ensure the scenarios are suitable for wider use
	<p>Qualitative approach: insight in the relevance of the main drivers of climate change risks in terms of prudential risks</p> <p>Quantitative approach: assess exposure of assets and underwriting portfolios to physical and transition risk, forward looking</p> <p>If not deemed material, explanation required</p>	<ul style="list-style-type: none"> Seeking feedback to papers/reports/plans
	<p>Quantitative and qualitative.</p> <ul style="list-style-type: none"> Qualitative: impact on business models <p>The first part of the BES is quantitative: quantification of change in value of assets and liabilities for each scenario.</p> <p>The second part of the BES is qualitative: description of how business models would change</p> <ul style="list-style-type: none"> Reporting frequency: firms need to submit projections at every five-year point in the test horizon 	<ul style="list-style-type: none"> Seeks feedback to papers/reports/plans Engages the industry through working groups and task forces
	Quantitative (general insurers only)	<ul style="list-style-type: none"> Seeks feedback to papers/reports/plans Engages the industry through working groups/task forces
	Mainly a quantitative exercise	<ul style="list-style-type: none"> Seeking feedback to papers/reports/plans
	Quantitative approach	<ul style="list-style-type: none"> Seeks feedback to papers/reports/plans Engages the industry through working groups/task forces
	Mainly quantitative, depending on the supervised entity, they can be on a qualitative basis	<ul style="list-style-type: none"> Seeks feedback to papers/reports/plans
	Quantitative exercise	<ul style="list-style-type: none"> Seeks feedback to papers/reports/plans Industry engagement
	Stress testing and scenario analysis, both using quantitative and qualitative methodologies	<ul style="list-style-type: none"> Seeks feedback to papers/reports/plans Industry engagement

Table 1: Summary of regulatory bodies' current approaches to climate risk assessment and scenario analysis

Organisation	Type of risk	Time horizon	
<p>Australian Prudential Regulation Authority (APRA)</p>	<ul style="list-style-type: none"> • Physical • Transition 	<p>Short term (current business planning cycle)</p> <p>Long-term (2050 and beyond)</p>	
<p>Bank of Canada</p>	<ul style="list-style-type: none"> • Transition 	<p>Up to 2100 (using NGFS scenarios)</p>	
<p>National Association of Insurance Commissioners (NAIC)</p>	<ul style="list-style-type: none"> • Physical • Transition 	<p>Qualitative</p>	
<p>New York State Department of Financial Services (DFS)</p>	<ul style="list-style-type: none"> • Physical • Transition 	<p>Short term (current business planning cycle)</p> <p>Long term (in the order of decades)</p>	

Source: The Geneva Association

	Methodology (quantitative and qualitative approaches)	Nature of engagement with the industry/other activities
	<p>In its draft, Prudential Practice Guide CPG 229 on Climate Change Financial Risks APRA states it expects the use of scenario analysis and stress testing for climate risks to be proportionate to an institution's size, business mix and complexity. Depending on the firm, it expects qualitative and quantitative scenarios to be developed. It proposes several temperature increase as well as transition pathway scenarios to be considered. Insurers are expected to consider both physical and transition risks within each scenario.</p>	<ul style="list-style-type: none"> • Seeks feedback to papers/reports/plans
Quantitative		<ul style="list-style-type: none"> • Seeks feedback to papers/reports/plans
	<p>—</p>	<ul style="list-style-type: none"> • Seeks feedback to papers/reports/plans • The Financial Examiner's Handbook is used by state insurance regulators to conduct audits of insurance companies. • Climate-change related questions added to the Financial Examiner Handbook. • In 2020 NAIC's Executive Committee created a new task force focused on Climate & Resiliency. • The Climate & Resiliency (EX) Task Force has been charged with coordinating all of the NAIC's domestic and international efforts on climate-related risk and resiliency issues, including dialogue among regulators and with industry, consumers and other stakeholders. In addition, the group will consider appropriate climate risk disclosures; evaluate financial regulatory approaches to climate risk and resiliency; consider innovative solutions to climate risk and resiliency; identify sustainability, resilience and mitigation issues and solutions related to the insurance industry; as well as take into consideration pre-disaster mitigation and resiliency and the role of insurance regulators in resiliency, as it makes recommendations.
	<p>In its proposed Guidance to New York Insurers on Managing the Financial Risks from Climate Change, DFS states that climate change scenario analysis should be undertaken and look at both transition and physical risks. It considers these not to be a precise forecast but rather a qualitative (and potentially quantitative) exercise used to inform strategic planning and decision making.</p>	<ul style="list-style-type: none"> • Seeks feedback to papers/reports/plans



4. Recommendations for the way forward

There are opportunities to further enhance inter- and intra-sectoral engagements for developing climate risk assessment and scenario analysis for the financial and insurance sectors. Our findings lead us to the following recommendations for financial and insurance regulatory and supervisory bodies:

For well-designed regulatory climate change risk assessment and scenario analysis, the instigating regulatory body should explain how that approach will deliver meaningful and decision-useful outputs.

- 1. A well-designed regulatory climate change risk assessment and scenario analysis should consider the following four key issues:**
 - a.** The objective(s) of the exercise must be clearly defined.
 - b.** The methods adopted for the initiative should clearly link back to the objective, and the instigating regulatory body should explain how that approach will deliver meaningful and decision-useful outputs.
 - c.** This explanation should address key challenges of climate modelling, e.g. the magnitude of transition and physical risks, extended uncertain time horizons, weaknesses in many climate economic models when modelling 'extreme scenarios'. More specifically:
 - i.** Designing the assessment should be done in a manner that acknowledges limitations presented by the inherent uncertainties associated with physical and transition risks (particularly in long time horizons). Furthermore, prescriptive quantitative approaches may provide decision-useful results for short-term time horizons. However, longer time horizons merit a qualitative approach.
 - ii.** Proportionality is key, in other words the exercise should be developed, keeping in mind the risk exposures and opportunities that the re/insurers are subject to.
 - iii.** Thinking of how the exercise fits into the broader effort to understand the implications of climate change risks on re/insurers is another key consideration.

- d. Efforts to design scenarios should leverage the latest climate and environmental sciences, as well as extensive efforts being undertaken by the insurance industry²⁷ and various regulatory bodies.

It is important to be agile and adaptable as climate science, the methods for assessing climate change impacts and re/insurers' understanding of these impacts on assets and liabilities are evolving quickly.

2. **It is important to be agile and adaptable as climate science, the methods for assessing climate change impacts and re/insurers' understanding of these impacts on assets and liabilities are evolving quickly.** Staying abreast of these latest developments and incorporating them are foundational for convergence on best and most robust methodologies over time. As such, regulators could consider lighter touch exercises compared to more extensive ones that may become outdated quickly as the continuum of a company's decisions alters its physical and transition risk profile.
3. **Strengthened collaboration and information sharing 1) across the industry, 2) among the insurance industry, regulatory and scientific communities; and 3) among the financial services regulators and supervisory bodies globally, could expand the potential pool of information to draw from while serving as useful means for promoting further development of climate risk assessment.**

For regulators and rating agencies, industry-level collaboration could offer an opportunity to access a wealth of information, expertise and innovation to draw from; ensure decision usefulness of different methodologies for different time-horizons to meet both regulatory and industry's objectives; and, stay on track with the practicality of the assessments and ultimately convergence on best practices.

More broadly, such partnering would serve as a more efficient use of time and resources for both the industry and regulators than turning to the standardised, one-size-fits-all quantitative and prescriptive approach that is regularly employed for more predictable risks. Furthermore, this would serve as an effective means for identifying common challenges that are inhibiting progress in this

field including those that regulators may be well-positioned to promote progress on – e.g. broadly accepted definitions, taxonomies, and pathways that stakeholders could leverage as appropriate for their respective needs. To this end:

- a. *In 2020, the insurance industry has taken steps to strengthen industry-level collaboration globally, through the Geneva Association Task Force on Climate risk Assessment*, which aims to innovate and advance the forefronts of climate risk assessment and scenario analysis to produce meaningful and decision-useful information. Efforts are focused on:
 - i. Developing a detailed matrix of decisions, for both sides of the balance sheet, for P&C and life insurers, taking into consideration physical and transition risks and two time horizons;
 - ii. Defining relevant indicators and materiality thresholds (i.e. what needs to be analysed for risk):
 - iii. Designing most relevant scenarios for insurers (for P&C and life separately), with examples;
 - iv. Assessing what tools are available and what needs to be developed by way of qualitative and quantitative tools for scenario analysis for different time-horizons.

Strengthened collaboration of regulators and the insurance industry will help expedite the development of and convergence on best practices.

- b. *Further strengthened collaboration of regulators and the insurance industry (beyond consultations) enables leveraging expertise and lessons learned and helping expedite the development of and convergence on best practices:* Understanding how risk emerges is a cornerstone of the insurance industry. A number of companies across the re/insurance industry have already taken first steps in conducting both qualitative and quantitative risk assessment exercises. However, the industry is in the experimentation and innovation phase and far from achieving a set of decision-useful analysis tools, which could lead to best practices. While still in the early stages, the industry has already intensified its industry-level collaborations

27 The Geneva Association 2021a-b.

towards advancing methodologies and approaches to assess how climate change risks may affect their underwriting and investment decisions.^{28,29}

Collaboration among regulators from different jurisdictions is vital to bring engagement with the financial and insurance sectors to the global level.

- c. *Collaboration and coordination among regulators are also vital to enable alignments and convergence on best practices:* In addition to engagement with the industry, supervisors should engage in cross-jurisdictional discussions and sharing lessons learned to increase awareness and understanding of the potential risks climate change presents. For example, the collaborative model adopted by the NGFS, involving central banks and various regulatory bodies, may be further expanded.

Specifically, the NGFS and IAIS could start an industry-led platform (building on similar concepts as the Climate Financial Risk Forum in the U.K.) to bring the expertise, know-how and engagement with the financial and insurance sectors to the global level. More structured and formal engagement with industry stakeholders could lead to more benefit for all stakeholders. Over time, we believe the experience of the industry and regulatory community can inform convergence of best practices and system-wide alignment.

28 UNEP-FI PSI 2021

29 The Geneva Association 2021a-b.

Annex:

Summary of regulatory activities in climate risk assessment and scenario analysis

(international, regional, national and sub-national)

IAIS and SIF³⁰

The Application paper (AP) on supervision of climate-related risks (May 2021) states: 'As part of ORSA insurers are required to perform a continuity analysis to assess its ability to manage 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'.

The final application paper was published on 25 May 2021. In the section dealing with ORSA, it is indicated, '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 exposure to climate change 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. Insurers may consider the risks on both a qualitative and quantitative basis, with the understanding that quantitative capabilities should improve over time as the ability to access the necessary data is improved'.

NGFS³¹

The purpose of the network is to help strengthen the global response required to meet the goals of the Paris Agreement and to enhance the role of the financial system to manage risks and mobilise capital for green and low-carbon investments in the broader context of environmentally sustainable development. The network

defines and promotes best practices to be implemented within and outside NGFS membership.

The NGFS scenarios explore the transition and physical impacts of climate change under varying assumptions, with the aim of providing a common reference framework for central banks and supervisors.

NGFS delivered its phase I scenarios in June 2020, providing a set of harmonised transition pathways, chronic climate impacts and indicative economic impacts for each of the NGFS scenarios. Its phase II scenarios were launched in June 2021 and provide more granularity on the country level by incorporating countries' commitments to reach net-zero emissions. These scenarios also provide a set of macroeconomic variables. Six scenarios were published:³²

- **Orderly**
 - **NetZero 2050** limits global warming to 1.5°C through stringent climate policies and innovation, reaching global net zero CO₂ emissions around 2050. In this scenario, some jurisdictions reach net zero for all GHGs.
 - **Below 2°C** gradually increases the stringency of climate policies, giving a 67% chance of limiting global warming to below 2°C.
- **Disorderly**
 - **Divergent Net Zero** reaches net zero around 2050 but with higher costs due to divergent policies introduced across sectors leading to a quicker phase out of oil use.
 - **Delayed transition** assumes annual emissions do not decrease until 2030. Strong policies are needed to limit warming to below 2°C. CO₂ removal is limited.

30 IAIS 2021.

31 NGFS 202a-c.

32 NGFS 2021.

- **Hot house world**
 - **Nationally Determined Contributions** (NDCs) includes all pledged policies even if not yet implemented.
 - **Current Policies** assumes that only currently implemented policies are preserved, leading to high physical risks .

EIOPA³³

In its Opinion on Sustainability, released in 2019,³⁴ EIOPA indicated that Pillar 1 prudential capital requirements aim to ensure that insurers can survive severe unexpected shocks and still meet their obligations over a one-year period. In light of this, it stated that as climate change-related risks are expected to emerge over a longer time horizon, there are practical challenges for integrating them into the pillar 1 capital requirements. In this document, EIOPA pointed out that scenario analysis and stress testing would be more appropriate to capture the impacts of climate change. EIOPA suggested embedding such analysis into the ORSA. Following this, EIOPA has issued several documents in which it lays out how this could be done. A consultation on the opinion on the supervision of the use of climate change risk scenarios in ORSA was launched in 2021.

Discussion paper (DP) on methodological principles of insurance stress testing (June 2020): sets out methodological principles to incorporate climate change-related risks in a stress-testing framework which can be used when developing future EIOPA bottom-up stress tests on climate change risks. The paper presents a range of principles for scenario narratives as well as a set of modelling approaches for both transition risk and physical risk. As to transition risk, a distinction is made between government bonds, corporate bonds, equity, property/real estate and infrastructure investments, which all have their own suggested methodology with corresponding granularity level. For physical risk, the following assumptions are considered: 1) event-based scenario; and 2) changes to severity, frequency and correlation.

- **Assess climate change risk in the short term**
 - **Physical** (changes in frequency, severity, distribution of extreme weather events)
 - **Transition** (introduction of carbon tax, technological breakthrough, market expectations towards transition to low-carbon economy)

- **Assess long-term risks of climate change using scenario analysis**
 - **Objective:** inform strategic planning and business strategy
 - **Time horizons:** longer than currently considered in the ORSA, e.g. an order of magnitude of decades

EIOPA also published a sensitivity analysis of climate-change related transition risks. The report explores current holdings of corporate bonds and equity that can be related to key climate-policy relevant sectors such as fossil fuel extraction, carbon-intensive industries, vehicle production and the power sector. It also quantifies potential climate-change related transition risks and presents insights into possible impacts on these investments as economies transition away from fossil fuel-dependent energy production and carbon-intensive production.

Bank of England³⁵

BoE conducts biennial industry-wide insurance stress tests (IST). The 2019 stress test included 'an exploratory climate scenario assessing the impacts to assets and liabilities arising from physical and transition risks', in which three scenarios were tested. For 2021, the BoE plans to test the resilience of the U.K. financial system (BES) to the physical and transition risks associated with different climate pathways over a longer time horizon. The resilience of insurers and banks will be tested against the following three scenarios:

- Early policy action scenario – where the transition to a carbon-neutral economy starts early – global temperature increase stays below 2°C
- Late policy action scenario – global climate goal is met but transition delayed; hence more severe to compensate for the late start
- No additional policy action scenario – hence insufficient transition to meet climate goals

In December 2020 the BoE published an updated methodology for the Climate BES. The update sets out key areas where the Bank has revisited the proposed approach as described in the 2019 Discussion Paper. New in the methodology is an acknowledgement of climate litigation risk as a third major category of climate risk. The bank is proposing a quantitative approach for general insurers, which will be focused on assessing exposure and

33 EIOPA 2021, 2020a-b.

34 EIOPA 2019.

35 BoE 201 and 2020.

supporting risk management in relation to seven possible adverse legal rulings. For other financial institutions, BoE expects to only include a set of qualitative questions.

De Nederlandsche Bank (DNB)³⁶

DNB expects insurers to take climate risks into account in the ORSA by analysing and describing the influence of these risks on their risk profile. If the different climate risks are material, the insurer is expected to develop a scenario for these risks within the ORSA.

The following principles need to be followed when setting out climate-related risks in an ORSA scenario:

- The insurer considers the impact of physical and transition risks on the asset sides (cross-sectoral) and liability side (sector-specific with a main focus on non-life) of the balance sheet
- **Physical risks**
 - **Consider damage** to collateral
 - **Consider 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
 - **Write-down of mortgage loans** and investments in non-sustainable real estate
 - **Increasing risks** for mortgage loans, bonds and businesses that are vulnerable to an energy transition
- Further reference to EIOPA (2018) and PRA (2019) stress testing principles is made
- DNB put forward in a 'DNB occasional studies' document an energy transition risk stress test for the financial system, including four proposed scenarios:
 - **Policy shock scenario:** includes a set of policies designed to reduce CO₂ emissions, which is abruptly implemented, leading to a large increase in the carbon price

- **Technology shock scenario:** unanticipated technological breakthrough, allowing share of renewable energy in energy mix to double in five years
- **Double shock scenario:** a combination of the first two
- **Confidence shock scenario:** uncertainty regarding government policies, causing a drop in the confidence of consumers, producers and investors

Governance: From 2021 onwards, the fit and proper testing (ex ante) of Board members will also take into account their knowledge of climate risk in relation to insurance.

Disclosure: Not mandatory yet. DNB thinks that it should be mandatory and reporting requirements should be harmonised across the globe.

Banque de France³⁷

In 2018, ACPR performed a scenario analysis on each line of assets held by French insurers. The study assessed both the value of insurers' investments in countries deemed vulnerable to physical risks as well as investments in sectors exposed to transition risks. The study found that between 10–20% of securities held by French insurers were potentially exposed to transition risk.

In 2020, Banque de France conducted its first bottom-up (pilot) climate-related risk assessment (joint ACPR/ industry working groups). Taking part in the pilot is voluntary. The modelling framework relies on a variety of different models, which are calibrated to the high-level reference scenarios of the NGFS and includes a number of quantitative scenarios. The scenarios include:

- A baseline scenario: orderly transition
- Adverse scenario 1: a delayed policy action scenario
 - Including a rapid increase of the carbon price to USD 219 per ton in 2035
- Adverse scenario 2: a sudden transition

Unexpected rise to of carbon price to USD 184 per ton in 2030

³⁶ DNB 2020a-b.

³⁷ Bank de France 1018 and 2020.

BaFin³⁸ Germany

On 15 January 2020, BaFin published its Guidance Notice on Dealing with Sustainability Risks. The guidance addresses (among others) the following aspects:

- Strategies of supervised entities
- Responsible corporate governance
- Business organisation
- Risk management
- Stress tests and scenario analyses

Risk management:

- Tasks, responsibilities and timelines for identifying, evaluating, managing, monitoring and reporting sustainability risks should be clearly defined.
- Supervised entities should review their methods and procedures for identifying, evaluating, managing, monitoring and reporting sustainability risks at regular intervals.

Stress tests including scenario analyses:

- Supervised entities should check whether the existing internal stress tests adequately reflect sustainability risks and consider whether these need to be modified.
- Scenario analyses: should consider both physical and transition risks and be long term. Reference is made to scenarios currently being developed by the NGFS, ESRB, ECB, Deutsche Bundesbank.

Monetary Authority of Singapore (MAS)³⁹

MAS conducts regular 'Industry-Wide Stress Tests' (IWST). Following the example of the Bank of England, the 2018 IWST included a climate variability scenario. The aim of including this scenario was to raise awareness of the financial impact of climate change on insurers' capital positions. The 2018 scenario required insurers to estimate the impact of a severe flooding in Singapore on their balance sheets. Recognising the nascent stage of stress-testing methodologies at this stage, MAS is undertaking efforts to refine future stress test scenarios, including a longer-time horizon and broader set of scenarios as well as considering transition risks.

In June 2020, MAS published a draft set of guidelines on environmental risk management for insurers (note their use of 'environmental risk', instead of climate risk). The aim of the proposed guideline is to 'enhance financial institutions resilience to and management of environmental risk'. There are different guidelines tailored to different parts of the financial industry, including for insurers. As to the scope, according to the proposal, they apply to all insurers. The proposed guidelines address:

- **Governance and strategy**
- **Risk management**
 - Insurers are to undertake an environmental risk assessment of each customer
 - Insurers are to develop scenario analysis and stress-testing capabilities
- **Underwriting**
 - Insurers are to develop tools and metrics to monitor its underwriting exposures to environmental risk
- **Investment**
 - Insurers are to consider the impact of environmental risks on investment portfolio under various stress scenarios
 - Insurers to promote responsible business behaviour of companies they invest in
- **Disclosures**
 - Suggestion to use the TCFD
 - Reporting on an annual basis

The paper states the following regarding scenario analysis and stress testing: 'These capabilities should be developed in line with MAS Notice 126 (ERM requirements). Stress testing should incorporate environmental risks qualitatively and quantitatively into the scenarios and project its financial conditions under a base as well as stress scenario'.

38 BaFin 2020.

39 MAS 2020a-c.

APRA – Australia⁴⁰

Early in 2020 APRA announced its intent to develop a climate change financial risk vulnerability assessment. The assessment will be executed in 2021, initially for deposit-taking institutions but other financial sectors will follow after 2021.

In April 2021, APRA released a draft guidance to banks, insurers and superannuation trustees on managing the financial risks of climate change. The guidance covers APRA's view of sound practices in areas such as governance, risk management, scenario analysis and disclosure. With regard to scenario analysis, the guidance includes an expectation for insurers to use scenario analysis and stress testing for climate risks in a way that is proportionate to an institution's size, business mix and complexity. Scenario analyses include: 1) a short-term assessment of an insurer's current exposures to climate risks (following an institution's business planning cycle); 2) a long-term assessment of the institution's future exposures based on a range of different climate-related scenarios which (potentially) extend to 2050 and beyond. Key considerations for scenarios include:

- **Future temperature rise**
 - A scenario in which global temperatures continue to rise resulting from a lack of mitigation actions and policies (temperature increases in excess of 4 degrees C by 2100) – with greater physical climate risks as a consequence
 - A more moderate global temperature increase in line with the Paris Agreement, leading to a reduction in the magnitude of long-term physical risks
- **Economic transition pathway**
 - Orderly transition to a lower-emissions economy. This scenario includes early introduction of policies and activities to address climate change that gradually become more stringent – physical and transition risks are minimised
 - A disorderly transition in which action to reduce emissions is delayed, leading to an increase in acute transition risks.

Scenarios should incorporate qualitative and quantitative factors and look at physical and transition risks within each scenario.

With regard to disclosure, the guidance states: 'A prudent institution would likely consider whether additional, voluntary disclosures could be beneficial to the institution [...]'. The TCFD is recommended as a useful framework.⁴¹

NAIC

In 2020, the NAIC established the Climate and Resiliency Task Force. The 2021 adopted charges for the Task Force include:

The Climate and Resiliency (EX) Task Force will consider appropriate climate risk disclosures within the insurance sector, including:

1. Evaluation of the Climate Risk Disclosure Survey.
 2. Evaluation of alignment with other sectors and international standards.
- Evaluate financial regulatory approaches to climate risk and resiliency in coordination with other relevant committees, task forces and working groups, such as the Financial Condition (E) Committee and the Financial Stability (EX) Task Force, including:
 1. Evaluation of the use of modeling by carriers and their reinsurers concerning climate risk.
 2. Evaluation of how rating agencies incorporate climate risk into their analysis and governance.
 3. Evaluation of the potential solvency impact of insurers' exposures, including both underwriting and investments, to climate-related risks.
 4. Evaluation and development of climate risk-related disclosure, stress-testing, and scenario modeling.
 - Consider innovative insurer solutions to climate risk and resiliency, including:
 1. Evaluation of how to apply technology and innovation to the mitigation of storm, wildfire, other climate risks and earthquake.
 2. Evaluation of insurance product innovation directed at reducing, managing and mitigating climate risk, and closing protection gaps.
 - Identify sustainability, resilience and mitigation issues and solutions related to the insurance industry.
 - Consider pre-disaster mitigation and resiliency and the role of state insurance regulators in resiliency.

40 APRA 2020.

41 APRA 2021.

Disclosure: 6 states (CA, WA, NY, CT, NM, MN) currently require insurers of a certain size to complete the Insurer Climate Risk Disclosure Survey. The TCFD report may be submitted in lieu of this survey.

In February 2021, the NAIC launched its 2021 priorities, which include Climate Risk & Resiliency. 'The NAIC is committed to working with state, federal and international stakeholders to coordinate climate-related risk and resiliency assessments, disclosures, and evaluation initiatives so that each state has the information, policies, and tools that promote resiliency and ensure stable insurance markets for its citizens'.

New York State Dept. of Financial Services (DFS)⁴²

In a circular letter issued in September 2020⁴³ DFS announced that it expects all New York insurers to start integrating the consideration of the financial risks from climate change into their governance frameworks, risk management processes, and business strategies. The Own Risk and Solvency Assessment process should address climate change as a reasonably foreseeable and relevant material risk and should consider how it affects risk factors such as investment risk, liquidity risk, operational risk, reputational risk, strategy risk, and underwriting risk.

- Insurers should designate a board member as well as a senior management function accountable for the company's assessment and management of the financial risks from climate change.
- An ERM function and the ORSA process should address climate change as a reasonably foreseeable and relevant material risk and consider how it impacts on risk factors such as investment risk, liquidity risk, operational risk, reputational risk, strategic risk and underwriting risks.
- Insurers should develop their approach to climate-related financial disclosure and consider the TCFD in doing so.

To provide clarification to the abovementioned circular, DFS will issue proposed detailed guidance on insurers' approaches to managing the financial risks from climate change in the first quarter of 2021 and provide 90 days for public comment.

In addition, DFS will organise an industry round table to gather feedback on the proposed guidance and, after incorporating the feedback, issue the detailed guidance in the third quarter of 2021.

DFS does not currently plan to issue new regulations pertaining to its climate-related supervisory activities, with the exception of Insurance Regulation 203, which DFS proposes to amend to include climate change as one of the reasonably foreseeable and relevant material risks to be addressed by insurers' enterprise risk management function.

On 25 March 2021, DFS released a proposed guidance for consultation. The document sets out expectations as to how insurers start integrating the consideration of the financial risks emanating from climate change into their governance frameworks, risk management processes, and business strategies as well as develop their approach to climate-related financial disclosure. As to scenario analysis, the document states that scenarios used by insurers should consider physical and transition risks, multiple carbon emissions and temperature pathways, and short, medium, and long time horizons. Insurers should consider climate risks in their ORSAs. On public disclosure, the guideline states, 'All insurers should publicly disclose how climate risks are integrated into their corporate governance and risk management, including the processes used to assess whether these risks are considered material'. Disclosures should address how physical, transition and liability risks might impact insurers. Although disclosures can be of qualitative nature initially, there is the expectation that over the next two to three years, these disclosures become more quantitative.⁴⁴

Department of the Treasury – U.S.

In May 2021, President Biden issued an Executive Order⁴⁵ on Climate-Related Financial Risks. This Executive Order directs financial regulator's attention to climate-related risks in the financial sector. The Executive Order asked the Secretary of the Treasury, to, jointly with FSOC member agencies issue a report on actions and recommendations to reduce climate-related financial stability risks as well as present a plan for improving climate-related disclosures.

In April 2021, the Treasury announced a coordinated climate policy strategy that will 'bring to bear the full force of the Treasury Department on domestic and international policymaking, leveraging finance and financial risk mitigation to confront the threat of climate change'.⁴⁶ Focus areas will be policy work related to climate transition finance; climate-related economic and tax policy; and climate-related financial risks. The strategy includes the creation of a Climate Hub, which will coordinate and enhance existing climate-related activities across the department.

42 DFS 2020.

43 Idib.

44 DFS 2021.

45 The White House 2021a.

46 U.S. Department of Treasury 2021.

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Insurance regulators and standard-setting bodies are increasingly focused on devising methodologies for climate risk assessment and scenario analysis to support the insurance industry in dealing with the potential impacts of climate change. This issue brief, produced by the Geneva Association Task Force on Climate Change Risk Assessment for the Insurance Industry, offers an overview of current approaches and associated strengths and challenges, based on a review of the activities of 12 international, regional, national and sub-national financial services regulatory bodies.

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