

Consultation comments on draft Application Paper on climate scenario analysis in the insurance sector

23-11-23 to 23-02-24

Q1 General comments on draft application paper on climate risk scenario analysis in the insurance sector:		
Principles for Responsible Investment	United Kingdom	The PRI welcomes efforts by the International Association of Insurance Supervisors (IAIS) to develop guidance on the use of climate-related scenario analysis in the insurance sector, focusing on how scenario analysis may be used by both supervisors and insurers to understand the risks to which the insurance sector is exposed at a micro- and macroprudential level. The PRI's key recommendations are set out below: ■ Supervisors should work to develop a comprehensive global understanding of the systemic impact of climate change on the insurance industry as a whole. ■ In addition to promoting transparency of scenario analysis exercises, it is important to clarify a number of conceptual issues in addition to quantitative assumptions and data sources. To ensure wide public and industry appreciation of the meaning and value of climate-related scenarios, supervisors should ensure that these issues are clearly communicated and understood. ■ Insurers should be encouraged to explore harmonizing the risk analysis approaches used in the context of underwriting with those used for investment. ■ Risk analysis should integrate physical risk, tipping points, and second-order effects. ■ Insurers should engage with investee companies to understand the steps they are taking to reduce their exposure to climate risk, and insurers should use proxy voting and sector collaboration to positively shape investees' transition to more sustainable business practices. ■ Insurers should assign specific board committees responsibility for the oversight of climate change issues.

World Federation of Insurance Intermediaries WFII	global	Please allow us to make the following observations: • In areas where commercial insurers do not wish to insure the climate-related risks, does this free up state owned insurers to take over the opportunity to provide such covers in whatever form is deemed to be prudent? This action may be taken to ensure economic continuity, employment and other financial benefits to a particular region or district. • Is there an obligation on insurers or insureds to inform their respective lenders that climate related covers are excluded or limited as the case may be? • Is there a specific standard dealing with the assessment and quantification of potential climate-related losses or impacts e.g. Hydrological assessments on expected flows following a catastrophic event? • Do the intended climate related studies take into account the direct and indirect economic effect on business situated within certain geographies e.g. factories employ 30 000 people but they can no longer obtain flood cover therefore these businesses withdraw or relocate causing increased unemployment, affecting multiple persons directly linked to the workers but then also the knock on effect of other businesses either supplying or being supplied by the said businesses? • In the case of national climate change risk exposures and the fundamental importance to the economy – will governments via their respective regulators permit co-operation between competitors in terms of climate change related matters – given their national (and international importance)?
National Association of Insurance Commissioners (NAIC)	United States of America	• Para 1: for the last sentence, it may be more helpful for the IAIS to describe the other relevant work; otherwise this sentence is rather vague.

The Life Insurance Association of Japan	Japan	□ Given the long-term and dynamic effects of climate change, the LIAJ believes that applying scenario analysis to climate issues would be effective. Thus, the following points, which are noted in the application paper to some extent, should especially be taken into consideration:– As methodologies for climate-related scenario analysis are still evolving, the resulting analyses may change due to further calibration in methodologies. In addressing issues identified based on these results, supervisory authorities should consider specific approaches and timeline, keeping in mind of the developing analytical methodologies and forward-looking nature of the analyses.– As stated in the application paper, climate risk factors are jurisdiction-specific while climate risk is universal. On the other hand, supervisory authorities need to ensure a certain level of global coordination, assuming that information sharing related to their respective jurisdictions or sectors is needed to compare companies in different jurisdictions or sectors.– Given that climate scenario analysis itself is still evolving, and that risk factors are influenced by jurisdictional features as stated above, disclosing the results of the scenario analysis should be considered carefully. □ The application paper states in paragraph 22 the importance for supervisory authorities to clearly define the objectives of the scenario analysis exercise. The LIAJ appreciates this understanding to some extent, as it would encourage supervisors to only require insurers to conduct scenario analysis for supervisory purposes as necessary. However, to avoid imposing undue regulations on insurers for supervisory purposes, the following points should also be noted:– The scope of the scenario analysis may vary depending on its purpose. As a result, the LIAJ understands that the scenario analysis that insurers conduct to meet ISSB and other standard disclosure requirements, which focuses on providing information beneficial for investors' decision-making, would not necessarily cover the scope of the scenario analysis for supervisory purposes.– Also, when utilising the scenario analysis, due consideration should be given to limitations inherent in the approach and burden caused by administrative complexity as stated below:Ø Scenario analysis is a process to assess potential effects based on assumptions. As such, limitations Ø exist as results may change depending on its assumptions, conditions or factors on scenario analysis.Ø The scope of the scenario analysis needs to consider multiple aspects, including its assumptions, conditions and factors. This administrative complexity would impose undue burden on insurers.– As such, to avoid imposing undue burden on insurers, supervisors should carefully consider when requiring insurers to conduct scenario analysis for supervisory purposes. They should at least determine whether they need to require additional scenario analysis for supervisory purposes after adequately evaluating if such scenario analysis could be substituted with existing scenario analysis conducted by insurers for disclosure purposes to meet the ISSB and other standards. If supervisors determine that additional scenario analysis is required, they should explain to insurers the need for conducting it.
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Insurance Europe	Europe	• Overall, the European industry is supportive of the draft IAIS application paper on climate scenario analysis in the insurance sector. Robust short, medium and long-term scenario analysis work should enable firms to better understand their exposure to climate change, mitigate their climate risk exposure more effectively and adopt more suitable business strategies. • Insurance Europe highlights the following key aspects of its response: - o Emphasising the principle of proportionality, by focusing on material risk only, is essential when using scenario analysis as a supervisory tool. In particular, the IAIS's expectations regarding use of scenario analysis for the underwriting, investment and risks policies are too prescriptive. The expectations regarding the Board accountability are also overly prescriptive. - o On publication of the results, it is not clear what level of aggregation is sought. Individual disclosure should be very clearly excluded given the level of uncertainty surrounding the scenario design and the results. This should be specified in the Application Paper. - o Insurance Europe welcomes the IAIS's acknowledgement of the continuous development (and improvement) in climate data/methodologies/models and the limitations arising from these. Companies should also be aware of the limitations of these. At the same time, the paper should outline the limitations of forward-looking assessments and reflect these in the recommendations throughout the paper. In particular with regard to the decision usefulness, e.g. to inform pricing, investment and underwriting decisions, risk appetite statements or capital requirements and solvency positions. - o The IAIS should also clarify that there is no need to re-run such extensive exercises every year, as underlying assumptions do not change fundamentally each year. - o The IAIS is encouraged to recognise that the design of the scenario analysis and the assessment should follow two guiding principles 1) the minimisation of the complexity of the analysis to maximise interpretability of the results, and 2) caution in extrapolating conclusions beyond the set of assumptions that drove the scenario results.
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CRO Forum & CFO Forum	Global	The CROF/CFOF agrees with the general observation in the draft IAIS application paper on climate scenario analysis in the insurance sector that robust short, medium and long-term scenario analysis enable firms to better understand their exposure to climate change, which may inform their climate risk management and business strategies. However, any such analysis should be meaningful and proportional. Scenarios need to be realistic and focused, acknowledging that climate is only one risk that insurers need to manage and there are many other risks that often are more impactful. On the paper, we would like to highlight two additional guiding principles i.e., the minimization of the complexity of the analysis to maximize interpretability of the results, and caution in extrapolating conclusions beyond the set of assumptions that drove the scenario results. In light of this, we note a couple of areas in the paper where improvements are needed. The CROF/CFOF observes that care must be taken in the analysis of results, especially in the case of more long-term scenarios and notably, but not limited to, those which are based on a projection of the balance sheet and/or the P&L and/or solvency and requires the implementation of management actions in a dynamic way. This is relevant for any supervisory driven stress-testing analysis and of individual insurer assessment such as the ORSA, which should cover the business planning horizon. A dynamic balance sheet approach, based on instantaneous shocks but even more so on a projection of financial items, leads to over-engineered results which test the limit of interpretability given the number of assumptions and variables used. Trying to develop capacities to perform fictional management actions under hypothetical assumptions is very onerous while not bringing decision-useful insights to the actual steering of the business in the “real world”. Actual management actions taken will depend on many different factors that can only be assessed when a specific scenario actually occurs and will consider the wider context in which it takes place to select the right and most feasible actions. There is little value in trying to mechanically engineer future management actions based on idiosyncratic hypothetical scenarios. It will set expectations that are not realistic and that may very well not reflect reality. This is especially the case for macro-prudential exercises that cover scenarios that are sector-wide. Indeed, climate scenarios provide a view of a limited number, among an infinity, of plausible possible future states and they are not predictions of the future. Therefore, supervisors must exercise caution about conclusions they may draw and certainly when considering any interventions or recommendations either at a macro or micro level based solely on the analysis of a specific hypothetical scenario. We note specifically the mention of the inclusion of tipping points in scenarios, which we understand historical data may not include such extreme theoretical events. Nonetheless, this uncertainty around tipping points is too high, which is supported by a statement of the PNAS paper mentioned by IAIS: “Climate tipping points are subject to considerable scientific uncertainty in relation to their size, probability, and how they interact with each other”. A forward-looking analysis based on a set of highly uncertain potential developments on such theoretical tipping points and any consequences of crossing these in a specific scenario path may lead to some qualitative insights of such extreme scenarios but should be used carefully to drive quantitative capital analysis or to inform concrete business decisions today. There is simply too much uncertainty on such potential scenarios and their potential paths, and they should be expected to go far beyond the 1/200-year events that most legal capital frameworks, such as Solvency II, expect insurers to hold. Climate risk is a risk driver and not a new risk category. It is generally not
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		possible to disentangle this driver from other key drivers that impact for example asset valuations. Trying to isolate this risk may lead to double counting in overall risk assessments and ultimately drive up the cost of insurance related solutions in the area of climate change and/or ignore other drivers may be more important. It does not mean there is no value in undertaking climate-specific scenario analysis, but when understanding any potential impact, it needs to be assessed in the wider economic and risk context. The IAIS AP does in our view not sufficiently take into account such inherent limitations of this tool. If solvency impact of climate risks is looked at, a lot of attention should be given around the uncertainties in the results and the limited conclusions that could be taken from them. In any case, an approach based on instantaneous shocks should be preferred to one that would rely on projecting balance sheet items and value at risk into the future. Nevertheless, the longer-term impacts have to be considered carefully and should be of a more qualitative nature. Scenarios should also not be overly complex with too many variables (including severe economic stresses) since it will only be more difficult to assess the impact of the climate related part. Finally, the timelines of the scenarios need to be relevant to the duration of the underlying business and the business planning horizon. This is especially relevant in the context of the ORSA, where it remains important to run meaningful assessments. CROF/CFOF are supportive of the principle of proportionality when using scenario analysis as a supervisory tool and the recognition that climate data, methodologies and models are still developing and continually improving. Thus, firms and supervisors should be aware of the limitations of (third-party) climate data, methodologies and models and allow for these in their assessments. The principles of proportionality should avoid too prescriptive recommendations on how to integrate climate risk within the insurer's risk management. On transparency, we observe a lack of balance in the analysis such as recognizing the pros but not the cons of any disclosure. It is not most effective, and generally even counter-effective, to use transparency to highlight shortcoming in data quality and modelling issues. In terms of industry capacity building to manage climate risks, this is only useful if the scenarios are not too extreme such that unnecessary high buffers would need to be held. It would conflict with the increasing requests to help address protection gaps related to climate risk. Therefore, transparency as a tool should be carefully considered, especially in light of the overall objective of any specific climate scenario analysis. Specifically, in light of macro-prudential sector-wide climate scenario analysis, individual disclosure should be more clearly excluded given the level of uncertainty and idiosyncrasy surrounding the scenario design and the results. Especially, in a European context after the implementation of SST and Solvency II, there are appropriate frameworks already in place to compare insurer capital strength, that is based on a consistent stress on all dimensions. We agree that the level of transparency may be possible to increase as climate scenario analysis capabilities evolve over time, but only in so far that transparency is the right tool. However, we also note that climate transition in various ways is a transition risk and therefore that the risk is embedded in pricing, valuation and risk management over time and thus the additional risk would be decreasing. This observation is currently lacking in the paper. Overall, the CROF/CFOF believes the paper provides good guidance on a number of elements on the subject of climate scenarios but should be improved in the areas noted above. It is important to stress the importance of focusing
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		on meaningful analysis only and to always keep in mind the proportionality principle in terms of the relative risk and impact for insurers in the broader risk universe.
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American Property Casualty Insurance Association	United States	The paper seems to be a useful primer for those supervisors and insurers that wish to conduct climate risk scenario analysis. It also contains helpful comments about the need to identify a clear regulatory purpose whose benefits justify the costs, the need for proportionality, and the unsuitability of scenario analysis for development of additional capital charges. That said, the paper is too prescriptive in several areas, and there is danger that it will be used to try to impose public policy decisions that are outside the purview of insurance supervisors. It also does not seem to point a way forward for those global insurers that need uniformity and coherence. APCIA endorses the comments of the Global Federation of Insurance Associations (GFIA) that “for the most part the narrative within a scenario reflects subjective judgements made today about future possibilities. The IAIS should bear in mind these scenarios are future possibilities and not predictions of the future.” We also caution against overreliance on scenario analysis for periods past five years or so for property/casualty insurers, especially with regard to quantitative analysis; The danger of false and misleading precision is high. For similar reasons we also urge against any requirement that individual insurer results be disclosed (see answer to question 11 for elaboration).
Public Citizen	United States	We commend IAIS for acknowledging the benefit of climate scenario analysis to financial supervision, as climate change will bring about severe and frequent financial risks necessitating a forward-looking approach. As noted by IAIS, the tool should be used proportionate to the uncertainty and limitation of the exercise. The effectiveness of scenario analysis hinges on the quality of the models utilized, and currently these models are still being developed to adequately understand climate risk for both supervisors and insurers. To improve the decision-usefulness of scenario analysis, we strongly encourage further work to improve the alignment of climate scenario analysis with climate science. Current limitations of early exercises conducted by supervisors include insufficient sectoral, temporal, and spatial data to complete the exercise adequately, overly simplistic models, and a misalignment between scenarios and climate science. Right now, scenario analysis primarily serves as capacity-building for both supervisors and their supervised entities. Ideally, scenario analysis can be instrumental in guiding policy decisions tailored to specific regions or industries, and assist in setting targets for policies, such as decarbonization goals or climate adaptation measures. We applaud IAIS for beginning discussion on the limitations, potential improvements, and policy implications of scenario analysis.

Finance Watch	EU	The IAIS rightly states that climate change is a source of financial risk that impacts both sides of insurers balance sheets. It also points to the need to better understand climate-related financial risks and suggests that scenario analysis can overcome some shortcomings of existing methods for assessing risks. This recognition of the limitations of existing methods to capture climate-related risks is key. Some caution is needed though over the ambition for scenario analysis, which can supplement existing methods, but may also suffer from similar limitations as existing methods. Scenario analysis can be a useful tool if suitable economic models and realistic assumptions are identified and used. Otherwise current models and assumptions used in scenario analyses produce highly unrealistic predictions, which underestimate climate losses. If supervisors validate these predictions and the use of the models that produce them can send a signal to policymakers that climate-related financial risks are being captured when this is not yet the case. Scenario analyses should provide a realistic assessment of climate change-related economic impacts and be combined with an adequate time-horizon and quantification of the stranded fossil fuel assets borne by investment portfolios to be effective tools for assessing climate-related risks.
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Global Federation of Insurance Associations (GFIA)	Global	GFIA welcomes the opportunity to respond to the application paper of the IAIS on climate scenario analysis. GFIA would like to emphasise that climate scenario analyses are mostly prospective tools that can be used to better understand the exposure of insurers to climate risks. However, even if the scenarios may draw on quantitative data, for the most part the narrative within a scenario reflects subjective judgements made today about future possibilities. The IAIS should bear in mind these scenarios are future possibilities and not predictions of the future. Rather, supervisors should regard scenario analysis as a tool that prudent insurers ought to be using when appropriate, and should ask insurers for specific, targeted purposes, and seek to understand what scenarios have been tested, why they have been tested, and what they have learned from them that supports their ability to manage possible future risks. For these reasons, supervisors must exercise caution about conclusions they may draw and certainly should not consider public disclosures or interventions either at a macro or micro level based solely on how an insurer is applying the learnings it has taken from the analysis. Supervisors should focus on materiality and proportionality. To this extent it is important that firms have some flexibility to adapt the analysis to their risk profile, e.g. when conducting climate scenario analysis in the own risk and solvency assessment (ORSA). GFIA highlights the limitations related to forward-looking climate risk assessments/scenario analyses that provide limited insights to inform concrete business decisions today (e.g. for short term liabilities). IAIS has to be mindful of these limitations and not to propose over utilising risk management tools for something they are not suited for. The IAIS should also clarify that there is no need to re-run such extensive exercises every year, also because underlying assumptions do not change fundamentally each year.
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American Academy of Actuaries	United States	For the financial soundness of an industry for which risk is foundational, it is essential that risks—including climate change risk—are assessed, quantified, and managed on an impartial basis. The American Academy of Actuaries Prudential Regulation Committee believes that the extensive scenario analysis that is suggested may not be appropriate for every insurer, because the relative importance of an insurer’s risk exposures will vary depending on individual facts and circumstances. An overemphasis might lead to the neglect of more impactful marketplace or risk phenomena, because company management, the board, and regulatory bodies have a finite ability to evaluate and manage risks. We encourage a balanced approach that would caution stakeholders about the perils of either a neglect of or overemphasis on any particular risk phenomenon, including climate change risk. The paper recommends that supervisors and insurers place heavy reliance on a tool that the paper itself deems unreliable. Climate scenario analysis is suggested for an array of core insurance functions, including risk assessment, investment portfolio management, pricing, business strategy, and capital management. It further recommends that supervisors employ climate scenario analysis in the context of financial stability. Yet paragraph 34d of the paper observes: “Caution should be used when determining the impact to capital, given the high degree of tracking error, use of subjective assumptions, numerous variables, varying time horizons, range of possible outcomes associated with each scenario and overall uncertainty of scenarios.” This “overall uncertainty” would limit the utility of climate scenario analysis for all suggested uses, not just capital management. As currently drafted, it seems imprudent for the IAIS to suggest the extensive use of a tool that could produce unreliable results. Two potential options for revision of the current language include positioning the recommended uses as aspirational (subject to better data and modeling), or a more cautious or narrow scope regarding the suggested uses of scenario analysis. There is a risk of improper supervisory expectations and application, such as the proposed use of scenario analysis to assess protection gaps and risk concentrations (Box 2). Overall, the paper does not appear to give significant attention to the differences between life insurers and property and casualty insurers (P&C). For example, P&C insurers are mostly exposed to physical risk, and scenario analysis may not consider impacts on investments. P&C business is subject to frequent repricing and reunderwriting (with policy terms of only 12 months or shorter in most cases). P&C investments are aligned with these shorter durations, which limits the usefulness of projections for longer time horizons. Life insurers, on the other hand, will be most exposed to investment risks, which are longer term. These differences and their implications for scenario analysis merit a fulsome discussion within the paper. The paper appears overly prescriptive and detailed in its recommendations. Given the nature of climate scenario analysis, a principles-based approach would be more effective for supervisory oversight and insurer risk management, with the following points of emphasis: 1.1. Materiality. The paper does not sufficiently approach this risk topic with the principles of proportionality and materiality (see par. 10 and 16). Thus, it does not place any reasonable use case restrictions or limits on climate scenario analysis, such as if it is deemed to be immaterial for an insurer or duplicative to other risk factors (as a driver of other risks that are already identified, assessed, and managed). Instead, the paper expects continued escalations of scenario analysis (e.g., section 4.2). Recommendations. The recommendations related to the Enterprise Risk Management framework, investment policies, Own Risk and Solvency Assessment, risk policies like
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		Asset Liability Management, and board accountability overstate how climate scenario analysis can reasonably inform those risk practices (see section 5).1.2. Best Practices. For an emerging, jurisdiction-specific, and uncertain risk, “best practices” are often unclear. As drafted, the paper conveys an authoritative and prescriptive perspective that goes beyond recommending. We strongly encourage the use of “may consider” in place of “should” throughout this section and the broader draft.
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International Actuarial Association (IAA)	International	The draft paper seems to imply that static approaches to scenario analysis are appropriate for all business models, and that the same long-term horizons are appropriate for all business models. If this is the intent, then the IAA believes this should be changed for the reasons explained below. In general, the appropriate time horizon and the associated use of static vs. dynamic assumptions should be dependent on the business model. Static assumptions implicitly assume that the current structure of an insurer's assets and liabilities is relatively rigid, with limited opportunity for adjustment. But where the business model allows for frequent management actions the current structure is not at all rigid. As an analogy, consider the risk of drowning for someone lying on an ocean beach. Under a static assumption for a one-day time horizon, the risk of drowning would be 100% due to ocean tides, but that is clearly nonsensical and results in a useless scenario analysis. Similarly, where an insurer's existing policies cover only 12 month periods, with annual re-underwriting and re-pricing, and where the both the resulting liabilities and supporting assets roll off in 5 years, the use of a 25 year horizon with static assumptions assume an incompetent management. As seen with the underwriting of war risk in the Middle East, the underwriting and pricing of wildfire risk in California, and the underwriting of cyber risk in Lloyds, managements do react to a changing risk environment in a relatively timely manner. The draft application paper needs to recognize this in its discussion of static vs. dynamic assumptions and its discussion of time horizons.
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Ceres	United States	We appreciate the opportunity to offer comments in response to the International Association of Insurance Supervisors' (IAIS) draft application paper on climate scenario analysis in the insurance sector. The proposed Draft Application Paper on climate risk scenario analysis in the insurance sector focuses on the use of climate-related scenario analysis as a tool used by both supervisors and insurers to understand the risks to which the insurance sector is exposed at a micro- and macroprudential level. The paper considers why and how climate-related scenario analysis exercises should be used and the extent to which they can overcome some of the shortcomings of existing methods for assessing risks. In particular, the paper focuses on how climate-related scenario analysis should be considered in light of the standards set out in ICP 16 (Enterprise Risk Management for Solvency Purposes) and ICP 24 (Macroprudential Supervision). Ceres is a nonprofit organization working with the most influential capital market leaders to solve the world's greatest sustainability challenges. The Ceres Accelerator for Sustainable Capital Markets works to transform the practices and policies that govern capital markets in order to reduce the worst financial impacts of the climate crisis. It spurs action on climate risk as a systemic financial risk – driving the large-scale behavior and systems change needed to achieve a net-zero emissions economy. The comments provided herein represent only the opinions of Ceres, and do not necessarily infer endorsement by each member of our Investor, Company, or Policy networks. Ceres also includes the Investor Network on Climate Risk and Sustainability, which consists of over 220 institutional investors managing a combined \$45 trillion in assets, who advance leading investment practices, corporate engagement strategies, and policy and regulatory solutions to address sustainability risks and opportunities. These investors have indicated that mandatory corporate climate disclosure is a top priority for them. For many years, Ceres has worked with state insurance commissioners, the NAIC, insurers, investors, and other regulators on how climate risk affects insurers and policyholders and how insurers can proactively take actions to reduce climate risks. Our research reports on these issues include Addressing Climate as a Systemic Risk (which provides 10 recommendations for state and federal insurance regulators), Scaling U.S. Insurers' Clean Energy Infrastructure Investments, Insurer Climate Risk Disclosure Survey Report & Scorecard, and Assets or Liabilities? Fossil Fuel Investments of Leading U.S. Insurers. In July - October 2021, we produced a series of trainings for the insurance companies that have completed their TCFD reports, many for the first time. This ten-hours of on-line content, in conjunction with NAIC and included remarks from several state insurance regulatory leaders, was aimed at helping insurers use the Task Force on Climate-related Financial Disclosures (TCFD) recommendations, How Insurers are Rising to the Challenge of Climate Risk Disclosure. Most recently, Ceres published the following reports to provide critical research, analysis, and solutions for the U.S. insurance industry: Inclusive Insurance for Climate-Related Disasters January 2023 which provides discussion and analysis of inclusive insurance and incorporates parametric insurance commentary; Climate Risk Management in the U.S. Insurance Sector July 2023 an analysis and summary of the TCFD climate disclosures submitted by nearly 480 insurers; and The Changing Climate for Insurance Investments August 2023 an analysis and summary of the investment portfolios of over 400 insurers. Ceres submitted comments to IAIS on May 16, 2023 responding to a request for input on updates to the overall work program of the IAIS in promoting a globally consistent supervisory response to
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		climate change within the insurance sector.¹ In those comments we noted Ceres considers issues relating to corporate governance, risk management, and internal controls as critically paired with the integration of climate risks to prepare for the acceleration of climate change impacts. The Swiss Re Institute annual report, which looks at losses from natural catastrophes such as floods, hurricanes, and wildfires, estimates the total economic losses will reach \$260 billion in 2022. That is down 11% from the year prior, but still well above the 10-year average of \$207 billion and 2023 estimates to range on par or higher. As a sustainability nonprofit helping institutions and industry tackle climate risk, Ceres applauds the IAIS' leadership in issuing much-needed guidance on climate scenario analysis for the insurance industry. This draft paper firmly positions worsening climate impacts as a pivotal financial risk meriting urgent attention. We particularly support transparent disclosure calls so stakeholders can assess insurers' climate risk governance. With escalating physical dangers and net zero imperatives intensifying, transparency catalyzes accountability. Equally vital are analyses assessing consumer protection impacts like widening insurance affordability gaps which disproportionately hamper disadvantaged communities. Prioritizing equitable climate resilience is urgent and insights should inform policy solutions. However, fulsome adoption may require more regulatory specificity on consistent reporting standards, accessible risk data, normalized methodologies, and proportional guidance so less-resourced insurers can integrate climate risk responsibly. Overall, the application paper sends a timely call for urgent transformation in risk governance and business models on the scale demanded by the climate emergency. This will spur the managed transition toward sustainable underwriting and investing so vital for stable markets that promote prosperity for all. We urge all insurance supervisors to enact these recommendations preemptively as risks intensify.
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E3G	United States	General Comments/Imperatives of data collection. The widely acknowledged data gaps faced by supervisors and insurers make it difficult to fully assess the comprehensiveness and completeness of the recommendations. As noted in the IAIS 2023 Global Insurance Market Report “A comprehensive understanding of the potential risks and exposures from climate change is dependent on accurate and sufficiently detailed data sources. When asked whether jurisdictions currently collect climate-related liability data in their jurisdiction, the majority of responses (18 out of 32) indicated that this is either currently not done or that this is planned for the near future. It appears that there is very limited regular climate data collection by IAIS members other than data related to Nat CAT exposures. This remains an area where supervisors need to do more to gather relevant data on assets and liabilities.” The input of climate scientists on scenario development is critical to guidance on the “how and why” of the IAIS’s scenario application paper. We respect that the IAIS’s focus is on the “why and how” climate related scenario analysis exercises should be used, and adjustments to their use can that could help overcome some shortcomings in existing methods. While the IAIS notes this consultation paper “...does not consider the development of the climate scenarios themselves, which are issues to be considered by bodies such as the [NGFS],” we respectfully believe, however, that model development is integral to the “why and how” they should be used. The NGFS’s models have evolved significantly, but the NGFS’ most recent ‘use with care’ label is sobering. The NGFS identified these areas as ones that users may need to adapt the intensity of scenarios “...tipping points, physical impacts that are not captured at present, societal impacts such as migration influenced by climate change, compound risks, the calibration of physical damages, technology assumptions, government policy changes and financial sector dynamics...” These design limitations can lead to a drastic underpricing of risks, and thus produce poorly informed policy making that could actually be counter-productive to the transition to net zero. To avoid such outcomes, the IAIS should more strongly encourage/require that climate scientists be integrated into in scenario analysis design and use to improve to make the “how and why” of scenario use’ is more meaningful. Mandatory transition plans and scenario analysis. Supervisors should support the immediate development and detailed disclosure of transition plans, particularly the insurance sector. The U.K.’s 2021 Climate Biennial Exploratory Scenario (CBES) exercise highlighted that “...lack of data on corporate current emission and future transition plans is a collective issue affecting all participating firms. One recurrent theme across participants was a lack of data on many key factors that participant need to understand to manage climate risks.”
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The Sunrise Project, Financial Regulation and Policy Program	European Union	We support the use of scenario analysis and its integration into the supervisory process. However, any scenario analysis is only as useful as the model(s) relied on and the understanding of model results and limitations by supervisors and insurers. Therefore, we strongly encourage further work to improve climate scenario analysis and education of supervisors and insurers, including boards and management. Scenario analysis results may create a false sense of security if unrealistic models are used, and scenario analysis exercises are just one tool that supervisors and insurers must use to manage climate risks. The use of scenario analysis must not be treated as a substitute for other tools or be used as a final determinant of supervisory measures and regulatory requirements. In particular, scenario analysis must not be used to justify any strategic decision making that is not compatible with the implementation of and adherence to robust transition plans that move insurers away from fossil fuels by mid century as agreed in the Paris accord. All of our recommendations involving the use of scenario analysis for various purposes should be read with the understanding that climate-related scenario analysis (1) is imperfect and subject to several shortcomings, (2) is not a substitute for other supervisory tools or insurer risk management processes, and (3) should only be used if the underlying models are consistent with climate science and do not produce economic results that are incompatible with changes in the natural world that will occur due to climate change. Models that understate these risks should not be used in scenario analysis exercises. While the draft application paper does not consider the development of climate scenarios, model development and characteristics are integral to determining why and how climate-related scenario analysis exercises should be used. Even the NGFS, which the draft application paper points to as a more appropriate body to develop climate scenarios, notes that their scenarios are not designed to be “off-the-shelf” packages and may require users to individually adapt them for their own purposes.[1] These limitations and need for modifications by users point to a need for supervisors to participate in the scenario development process. Given the radical uncertainties and extreme risks of climate change, supervisors should take a precautionary approach. This is especially true as climate-related risk management tools remain in a developmental state. It is also questionable whether climate-related financial risks, which flow from the existential risks of climate change itself, can be “managed.” Supervisors must also recognize that the risks are asymmetrical. Due to potential tipping points and the irreversibility of climate change, recoveries from crises may not be possible as they are in the case of more traditional financial stress. Recoveries may not just be slower; they may not occur at all. Climate scenario analysis exercises must consider such outcomes. Further data collection is necessary to better inform scenario analysis design and methods, as well as other supervisory measures such as transition plans and traditional stress testing. However, the need for additional data should not be used as an excuse for inaction. Climate change requires immediate action now. Even longer-term risks will depend on the urgency with which supervisors, insurers, and others act today. Scenario analysis should be used now, with recognition of its limitations and in conjunction with other supervisory tools to address climate-related financial risks, while additional data is collected, understanding of climate risks is improved, and scenario modelling and methodology is enhanced. Our more detailed comments below focus primarily on areas for improvement in the final application paper rather than on areas of agreement. —————[1] NGFS (2024). NGFS scenarios: Purpose, use cases and guidance on where
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		institutional adaptations are required, https://www.ngfs.net/sites/default/files/medias/documents/ngfs_guidance_note_on_the_scenarios.pdf
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Lloyd's Market Association	United Kingdom	We agree with IAIS that climate change is a source of financial risk that impacts the resilience of insurers and could lead to financial stability risk. We also welcome IAIS considerations as discussed in your draft application paper on climate scenario analysis in the insurance sector. Our Market recognises the importance of the use of climate-related scenario analysis to understand and quantify the emerging physical, transition and litigation risks. The Prudential Regulation Authority's supervisory statement SS3/19 has set out the rules on which the PRA is supervising the market on climate risk management. The PRA expects firms to develop and embed effective risk management processes to manage their climate risks and use long term scenario analysis to inform strategy setting risk assessment and identification. The PRA recently set its 2024 regulatory priorities through a 'Dear CEO' letter and noted that insurers should continue to work towards implementing the requirements of ss3/19. Our members have made significant progress on the embeddedness of climate risk management processes within the strategic decision-making and how climate change related risks impact their reserving and capital frameworks. This has also been supported by the roll out of the Lloyd's Principles Oversight Framework and the focus of the Lloyd's risk aggregation and exposure management team on managing exposure to physical risk. Managing Agents annually take part in analysing portfolio exposure to Realistic Disaster Scenarios, set by Lloyd's to ensure market wide exposure and capital remains within risk appetite. Our members focus on physical risk will continue in 2024 throughout the work conducted by Lloyd's to develop a climate key-risk indicator for physical flood risk. In addition to this, further guidance is planned to be released by Lloyd's on a key risk indicator for climate – related liability risk. The LMA is supporting Lloyd's and PRA's activities through the LMA's Climate Risk, Exposure Management and Actuarial committees. In 2024, the LMA will be supporting the market further understand business and financial risk impact from the transition and climate litigation risk through the development of a transition risk heatmap and regular and continuous engagement with the PRA and Lloyd's.
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Institute of International Finance	United States	Dear Messrs. Ariizumi and Mr. Dixon: The Institute of International Finance (IIF) and its insurance members are pleased to respond to the IAIS's Draft Application Paper on climate risk scenario analysis in the insurance sector (Draft Application Paper). The IIF has been leading and supporting efforts within the broader financial services industry to advance sound risk management practices for climate-related financial risks, including the use of climate scenario analysis. Last year, the IIF analyzed insurer approaches to climate scenario analysis, which culminated in the publication of its report, "Supervisory and Industry Approaches to Insurer Climate Scenario Analysis and Stress Testing." Many of the insights from this IIF report, which was informed by the practical experiences of IIF members, have helped inform our response to this Draft Application Paper. We understand the interest of the IAIS in developing guidance for jurisdictions on how climate risk scenario analysis should be considered in light of Insurance Core Principles (ICPs) 16 and 24. However, we believe that the IAIS should go back to first principles in drafting an Application Paper. As noted in the preface to the Draft Application Paper, Application Papers provide supporting material related to specific supervisory material in the ICPs or ComFrame by providing further advice, information, recommendations, or examples of good practice. Application Papers are subject to the principle of proportionality and should not include new requirements that go beyond the scope of the existing ICPs. This distinction is important as, in practice, Application Papers are often interpreted by supervisors as prescriptive requirements from the IAIS and, by extension, failure to implement them could give rise to negative assessments. We encourage the IAIS to reiterate and clarify the purposes and intent of an Application Paper for the benefit of its members and stakeholders and to reflect the intended purpose of an Application Paper in redrafted language in any final Application Paper. Overarching Comments The Draft Application Paper reflects an overly optimistic view of the current state of climate risk modeling and climate scenario analysis. While the Introduction to the Draft Application Paper notes that climate-related scenario analysis is still in its early stages as a risk assessment tool and discusses some of the current limitations of these analyses, the remainder of the Paper reflects an overly optimistic view of the current state of the art and potential use cases for climate scenario analysis without appropriately reflecting and discussing the limitations of climate scenario analysis. The Paper reflects an overconfidence in climate scenario analysis use cases that does not appropriately consider important limitations and modeling challenges. We believe that the Draft Application Paper would benefit from setting out these limitations in more detail, and we encourage the IAIS to continue to consult with industry, climate scientists, and modeling experts before progressing this work to a final Application Paper. Importantly, the IAIS and its member supervisors should avoid being overly prescriptive and should pursue a principles-based and incremental approach to climate risk scenario analysis, where methodologies and approaches are still developing. The Draft Application Paper addresses a broad range of issues relevant to climate scenario analysis, including macroprudential considerations and the use of scenario analysis to inform insurers' risk management and governance. Given the far-reaching scope set out in the Draft Application Paper for this topic and in consideration of the limitations of climate scenario analysis as set out in this response, we strongly encourage the IAIS to take an incremental approach to climate scenario analysis. For instance, the IAIS should first explore climate scenario analysis objectives and exercise
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		design considerations in a microprudential context before progressing to address the complex topic of how climate change can be a driver of systemic risk. The work of the IAIS on climate-related risks and scenario analysis can be an input into its broader macroprudential analyses, but forward-looking climate scenario analysis needs more exploration and development before becoming part of a broader macroprudential analysis. We are also concerned that some of the use cases provided in the Draft Application Paper for climate scenario analysis for firm-specific exercises and, in particular, as a tool to inform enterprise risk management are overly optimistic. We encourage the IAIS to review with experts in climate scenario analysis the potential use cases put forward in the Draft Application Paper in order to confirm the potential situations in which climate scenario analysis can be decision-useful for risk management. More aspirational use cases should be clearly identified as such in any final Application Paper. Climate scenario analysis should not be conflated with business-as-usual climate risk management. Climate scenario analysis, which employs longer-term, forward-looking climate modelling, differs from business-as-usual climate risk management over the near-to mid-term, and the two should not be conflated. Climate change should be seen as an additional risk driver on top of existing climate risk management. Forward-looking impacts are dependent on a number of assumptions and estimates that make their use in influencing business strategies and decisions- over the business-as-usual time horizon considerably less reliable. The discussion of transparency in Section 4.3 of the Draft Application Paper should be substantially revised given that the output from climate scenario analysis exercises are - at least over the near-term - likely to be imprecise and unreliable in light of the complexity and methodological and data challenges associated with the exercises. Disclosing such information runs the risk of misleading stakeholders and would pose undue risks to insurers. Paragraph 47 states that publishing the results of climate scenario analysis exercises can send a clear message about the potential climate-related risks posed to the insurance sector. However, given the data and methodological limitations discussed above, this statement is not fully accurate. Moreover, we believe that this statement overlooks the potential for the disclosure of the results of exercises to create confusion among investors and other stakeholders that receive and use these disclosures in their decision-making, which gives rise to significant litigation and reputational risks for the industry. Further consideration of the risks of public disclosure is provided in the IIF's comment letter on the IAIS market conduct consultation. Substantial improvements in data and modeling are needed before the results of climate scenario analysis will be decision-useful to the users of insurers' disclosures. Climate scenario analyses over a range of timeframes can be useful to an insurer for strategic planning and for testing the viability of various business models over a longer time horizon, but they are not a suitable tool to inform concrete decision making, particularly for short tail lines of business such as property catastrophe. This lack of suitability for decision making arises from the need to align the assessment horizon with the duration of the underlying liabilities in order to inform concrete business decisions. In particular, exercises that are designed to explore longer timeframes may result in outputs that exceed those arising from risk-based capital calculations. In addition, the considerable potential for error in scenario analysis results can make firms reluctant to draw any firm conclusions that would inform business plans or strategy. An obligation to disclose the results of those analyses should respect the
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		uncertainty and potential business sensitivities of the outcomes, otherwise it would have a chilling effect on the willingness of insurers to engage in these exercises. Individual firm's results should not be disclosed publicly, as they conflict with legally required disclosures and would result in confusion and misunderstanding to the serious detriment of the users of disclosures, disclosing firms and the sector as a whole. The significant litigation risks to insurers arising from misunderstanding these disclosures and from the fact that the results may not be sufficiently reliable should not be overlooked by insurance supervisors. Supervisors should strictly limit the publication of any results of their supervisory exercises to anonymized and aggregated information and should strongly caveat any findings in order to reflect the limitations of those exercises. Supervisors should strictly avoid any publication of individual firm's scenario analysis results given the substantial uncertainty and business sensitivities surrounding those results. We propose a redrafting of Section 4.3 in our specific comments below. The use of climate scenario analysis as a prudential supervisory tool is not appropriate in light of the uncertainty around climate change outcomes and shortcomings in data availability and reliability. While the use of climate scenario analysis as a prudential supervisory tool is not appropriate, it can serve a valuable role in facilitating supervisory discussions with insurers or in testing the long-term viability of an insurer's business model. The IAIS should not promote the use of climate scenario analysis to inform firms' capital and solvency requirements. Climate-related risk drivers of financial risk should not be elevated over other insurance risk drivers. While climate-related risk drivers of financial risk are undoubtedly an important consideration for insurers and supervisors, they should not be elevated above other risk drivers to an insurance enterprise unless a materiality determination provides evidence that it is in fact more significant to the organization than other risks and, thus, should be prioritized. For some insurers, climate-related risk drivers may be significant, whereas for others, non-climate-related risk drivers may pose the larger threat to their business model over a longer time horizon. Elevating climate-related risk drivers over other more material risk drivers can distort supervisory and firms' business decisions and, hence, is in conflict with the very objectives of prudential supervision. We welcome the delineation of specific climate-related risks by insurance lines of business in Table 3 of the Draft Application Paper. This approach should be carried through the remainder of the Paper, including in the discussion of scenario analysis design considerations, including in Tables 4 and 5. There continues to be a need for supervisors to increase their alignment of supervisory approaches to climate-related risks, including climate scenario analysis. While the Draft Application Paper calls for greater alignment of supervisory approaches to climate scenario analysis, the various case studies contained in the Paper reveal considerable divergence among jurisdictions in their approaches to supervisory exercises and guidance on this topic. As noted in a recent IIF report, regulatory fragmentation has many negative consequences for both the financial services industry and its customers and counterparties. The IAIS should continue to encourage its member supervisors to work collaboratively to increase alignment on supervisory approaches to climate-related risks, including climate scenario analysis. Supervisory climate scenario analysis exercises should be limited in scope and tied directly to supervisory mandates and objectives. Supervisory requests for industry participation in climate scenario analysis exercises should be tied directly and specifically to the supervisory mandate and objectives. The exercises should be proportionate,
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		flexible, and focused on the material climate-related risks faced by exercise participants. Supervisors should recognize that insurers with global operations often are contending with multiple, varying exercises with overlapping and ambitious timeframes and, accordingly, tailor their exercises to focus on the most material exposures that are directly relevant to their supervisory objectives. Paragraph 46c. advocates for supervisors to conduct follow-up scenario analysis exercises to identify emerging risks or trends. While, in principle, this suggestion is valid, it does not reflect the considerable uncertainty surrounding the results of these exercises and the serious risk of compounding erroneous results, which can lead to self-fulfilling prophecies arising from the inherent presumption that a particular trend will develop (i.e. attempting to prove a trend by calculating the potential impact should a presumed trend materialize), circular reasoning and a false sense of precision in the outcomes. Supervisors should fully understand and digest the results of their initial exercises and verify the assumptions and estimates on which they are based before engaging in follow-up analyses. Moreover, supervisors should interpret the outcomes of supervisory exercises through the lens of materiality. Supervisors' climate scenario analysis exercises should not 'crowd out' insurers' internal analyses. Insurers and supervisors have a common goal to enhance climate-related risk management practices, including the use of climate scenario analysis. Given the considerable expertise in modeling and scenario analysis in the industry, it may be appropriate for insurers to take the lead in advancing sound climate scenario analysis practices. Insurers are best placed to tailor the analysis to their risk profile and business model. In contrast, top-down supervisory approaches limit the ability to tailor the analysis and, therefore, produce results that are less valuable to an insurer. At a minimum, supervisory capacity building would be enhanced and accelerated through collaboration with private sector experts in risk management and modeling. Specific Comments Section 2 – Scenario analysis versus stress testing Paragraph 13 states that climate-related scenario analysis exercises can be used to identify and assess emerging risks that may arise over time so that insurers can take appropriate action to effectively and proactively manage those risks. We agree with the statement that climate exercises can be used to identify and assess emerging risks, but the use of the results of forward-looking climate scenario analysis exercises in business decision making and capital allocation is limited due to data gaps, issues related to data quality and reliability, methodological constraints, and the need to rely significantly on assumptions and estimates. These data and methodological limitations constrain the ability of insurers to use climate scenario analysis as an effective tool in decision making at the present time. We anticipate that further advances in data quality and modeling will make the results of climate scenario analysis more decision useful over time. However, some structural limitations will remain, e.g., the decision usefulness of such forward-looking assessments for short-term liabilities or capital requirements. Paragraph 14 states that climate-related scenario analysis could be used to measure the compounding impact of several catastrophe risk perils occurring consecutively in short order. We believe that the state of the art of climate scenario analysis is not yet sufficiently advanced to make the results from any such analysis reliable. Paragraph 14 also states that non-life insurers could use scenario analysis to measure the compounding impact of several catastrophe risk perils occurring consecutively in short order. While climate scientists and modeling experts are exploring multi-peril impacts, we understand that the results of those exercises generally are not considered
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		fully reliable for use in business decision making at the present time. Section 3 – Scenario analysis objectives and scenario design We encourage the IAIS to more clearly delineate the supervisory objectives of climate-related scenario analysis before outlining extensive design considerations in this Section. The extensive list of objectives set forth in Table 4 should be more carefully limited in order to produce exercises that are more likely to result in information and analyses that are decision-useful for insurers and their supervisors. In addition, the scientific knowledge around climate change does not change that frequently, which limits the usefulness of annual exercises. Supervisors should consider less frequent formal supervisory exercises and place greater reliance on discussions with insurers based on their firm-specific assessments. In designing climate scenario analyses, it is important to reflect that climate change is a risk driver that is already embedded in an insurer's financial risks, to the extent that it is deemed material to the firm. For example, the impact of climate change on real estate holdings in a particular location may be well reflected in the current credit risk assessment. Double counting should be avoided as it could lead to flawed analysis and inputs to decision-making. In other cases, it may be difficult to isolate certain risks. For example, isolating climate transition risks, which are one of several drivers of spread risk, can be extremely challenging due to data limitations and model bias that can arise when attempting to isolate transition risk from other drivers using traditional methods such as bivariate and multivariate regressions. We do not believe that scenarios should reflect climate tipping elements or tipping points and we would delete the reference to tipping points in Paragraphs 29 and 58b. of the Draft Application Paper. Tipping points are subject to competing theories and are not precisely known. The term is also generally interpreted as meaning that a particular system will 'tip' very abruptly once the threshold is crossed, which may not be necessarily true for a particular tipping element. Multiple thresholds may govern a particular tipping element, and climate change may influence a range of different feedback effects. That said, state-of-the-art climate models (e.g. CMIP66), represent all physical processes of the climate system, including feedback processes and potential tipping points. As such, they are already reflected to the extent possible and should not be singled out. We would therefore recommend that the IAIS not ask supervisors to include tipping points in their analyses, nor should supervisors require firms to include tipping points in their firm-specific analyses beyond widely recognized scientific climate models. Section 4 – Macroprudential considerations for supervisors We understand and share the IAIS's interest in emerging developments that may affect the insurance sector's risk exposures. The Holistic Framework for the Assessment and Mitigation of Systemic Risk in the Insurance Sector (Holistic Framework) is designed to increase the resilience of the sector through a global monitoring exercise that assesses trends and development in the sector in order to detect the possible build-up of systemic risks. The IAIS's review of system-wide climate-related risks should be directly linked to the Holistic Framework and conducted through the global monitoring exercise, as was done in 2021. Notably, the 2021 Global Insurance Market Report (GIMAR) Special Topic Edition on climate-related risks (2021 GIMAR) results indicated that, considering the solid overall solvency position of the global insurance sector, the sector as a whole appears to be able to absorb investment losses from all scenarios tested and that transition risks from climate change generally are manageable for the insurance sector. The findings from the 2021 GIMAR are not appropriately reflected in the Draft Application Paper and
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		should be discussed in any final Application Paper. The IAIS can play an important role in coordinating supervisory exercises through the GIMAR, thereby limiting the growing proliferation of supervisory exercises with different objectives and design features. The IAIS can also serve as a forum for discussing the results of supervisory exercises and for determining when material changes in the industry's risk profile or material advancements in modeling and scenario analysis warrant a further review or analysis of past findings. The IAIS and its members should not presume that annual or bi-annual exercises are necessary; rather, they should base a decision to conduct follow-on work based on a material change in scientific literature or on significant advancements in methodology and techniques that can provide new insights to both supervisors and the industry. Paragraph 25 of the Draft Application Paper should reflect an approach to supervisory exercises that ties specifically to the Holistic Framework, rather than the focus on domestically systemically important insurers or locally headquartered internationally active insurance groups. We encourage the IAIS to take a sector-wide view of climate-related risks, consistent with the approach taken in the 2021 GIMAR. Paragraph 35 of the Draft Application Paper attempts to put into context the macroprudential considerations for supervisors but fails to recognize the important role that insurers play in reducing the economy-wide risks and impacts of climate change through mitigation, adaptation, and risk transfer measures. In developing a proportionate approach to the macroprudential treatment of climate risk considerations, the IAIS should recognize the positive contributions to financial system-wide resilience that are made by the insurance sector, including by developing innovative new products, by adopting internal policies and practices to reduce their carbon footprints, and by considering climate-related considerations in their investment policies and in their engagement with investees. With respect to the discussion of climate-related risk concentrations in Section 4.3.1, there are serious methodological and modeling challenges related to assessing and measuring climate-related risk concentrations that make any system-wide analysis of concentration risk subject to considerable uncertainty and imprecision. The determination of the impact of perils and the quantification of the effects of physical and transition risk correlations (see also Box 5) are subject to substantial uncertainty, as a result of the need to rely on information that is incomplete or subject to a high degree of estimation, assumptions that may or may not prove valid, and dependencies that may not be readily apparent or well understood. It is important to first assess the materiality of portfolio risks before considering more complex issues around concentration risks. These shortcomings can seriously compromise the decisions that supervisors might make based on this information. It is very difficult even for individual insurers or insurance groups to conduct these analyses; the state of the art is not sufficiently advanced at the present time for supervisors to attempt to use these analyses for macroprudential purposes. To do so could give rise to the potential for unintended consequences and supervisory decisions based on inaccurate or incomplete information. These risks are compounded when consideration is given to assessing spillover effects to the real economy and other sectors (see Paragraph 43). Moreover, the lack of common and well-developed definitions of some key terms impedes the ability of insurers or supervisors to conduct a meaningful assessment of concentration risks. We appreciate the IAIS providing definitions of certain key terms in Table 2 but other key terms still need clear and aligned definitions. For example, Paragraph 44 discusses carbon-intensive and
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		green assets without clarifying the IAIS's definition of these terms. Moreover, there are a multiplicity of definitions across jurisdictions and among insurers and supervisors, which complicate any analysis of transition risk concentrations. Moreover, Paragraph 44 focuses on carbon-intensive assets as a potential source of micro and macroprudential risk, which overlooks other potential drivers of financial risk. It should also be acknowledged that carbon-intensive assets will continue to play an important role as economies transition to net zero. With respect to the use of climate scenario analysis to explore the impact of climate change on capacity (See Box 2), we do see a useful role for climate risk maps, such as those constructed by EIOPA, that can help provide national, regional, and local governments to better assess potential impacts of natural catastrophe events and to develop mitigation and resilience strategies and community education programs. However, a broader role for climate scenario analysis in understanding the impact of climate change on protection gaps (see objective 9 of Table 4), goes beyond the current capabilities of insurers' climate modeling and is subject to significant assumptions, dependencies, and uncertainties. As a result, it is unlikely that any exercise designed to understand the impacts of climate change on protection gaps would result in the development of actionable information. As noted in our overarching comments, the discussion of transparency in Section 4.3 of the Draft Application Paper should be substantially revised in light of the substantial risks of disclosing the results of climate scenario analysis given data and methodological constraints. We propose the following language to replace current Section 4.3: Context 47. When considering transparency of scenario analysis exercises, supervisors should consider carefully the risks and benefits of publishing results in light of the data limitations, methodological constraints, and uncertainty associated with forward-looking climate risk modeling and climate scenario analysis. Recommendations 48. Recognizing these limitations, constraints and uncertainty, supervisors should limit any publication of results to high-level, aggregated results and allow firms to determine if and to what extent additional information regarding the results of exercises should be disclosed to the public. 49. The publication of information from analyses conducted over mid- to longer time horizons should respect and clearly state the significant uncertainty surrounding those results in order to avoid misinterpretation. 50. Supervisors could consider publishing information on the scope of the exercise, the scenarios explored, the assumptions and estimates used in developing scenarios, scenario caveats, data quality challenges and modeling uncertainty and limitations. Section 5 – Scenario analysis to inform assessment of insurers' risk management and governance (ICP 16) As noted in our overarching comments, the Draft Application Paper reflects an overly optimistic view of the current state of climate scenario analysis. In particular, Section 5 promotes the overutilization of climate scenario analysis to inform a firm's risk management decisions. The Draft Application Paper reflects an overconfidence in scenario analysis use cases that does not consider important limitations and modeling challenges. These realities call for a principles-based and incremental approach to climate risk scenario analysis, where methodologies and approaches are still developing. We encourage the IAIS to include in the Draft Application Paper an exploration of current limitations and challenges associated with climate scenario analysis and to continue to consult with industry, climate scientists, and modeling experts before progressing to a final Application Paper. In managing their exposure to climate risks, insurers consider in their modeling the current impacts of
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		climate change over the strategic business planning horizon of three to five years; that is, the business-as-usual horizon. Importantly, to properly inform business decisions, the time horizons used in climate scenario analysis must align with the duration of the underlying liabilities and the characterization of the assets supporting the liabilities. While climate change is a phenomenon that materializes over a longer time horizon, some liabilities, including property catastrophe liabilities, have a much shorter duration. For longer term life insurance liabilities, insurers have deep expertise in adjusting their assets and in managing reinvestment risk, for which climate change is one of many considerations. In addition, climate scenario analysis is dependent upon a number of key assumptions for macroeconomic variables that are subject to considerable uncertainty over those longer-term time horizons. Given the time horizon and the degree of uncertainty, in order to be useful, climate scenarios need to reflect most likely outcomes without the undue complexity introduced by extreme scenarios and stresses on extreme tail risk assumptions. Insurers should have the discretion to determine how best to conduct any firm-specific climate scenario analysis exercises, both in terms of the time horizon of the exercise, as well as the level of granularity. Individual insurer climate scenario exercises should focus on the climate-related financial risks that are most material to the insurer's individual risk profile. The Draft Application Paper implies that climate-related risks are material to all insurers. (See e.g., Paragraph 67.) We do not agree with this inference. The effects of climate change impact insurers and insurance lines of business differently in terms of the nature, scope, and significance of climate-related financial risks to which they are exposed. The materiality of insurers' climate risk will depend on the lines of business, activities, portfolio exposures, investment strategies, key markets and geographic footprint of a particular insurer. Further, in the assessment of the materiality of climate-related risks, it may be appropriate to reflect the impacts of group-wide diversification as a risk mitigant. A materiality assessment is a first step in designing insurer exercises and should also be a precursor to any supervisory exercises, although we acknowledge the added complexity of assessing the materiality of climate-related risks across multiple insurers within a jurisdiction. Comments with respect to ERM framework review (Section 5.1) The discussion of climate scenario analysis should note the limitations of and the unsuitability of the outcomes of these exercises for informing concrete risk management and business decisions today, as discussed above. The Draft Application Paper should make a clear distinction between insurance business-as-usual climate risk management, which is very well advanced (and not the topic of this Draft Application Paper) and climate scenario analysis, which has clear limitations with respect to informing risk management decisions, so as to minimize the risk of misinterpretation of the IAIS's guidance by supervisors. Paragraph 55 states that supervisors should consider the extent to which climate risk is integrated into enterprise risk management. We would revise this sentence to provide that supervisors should consider the extent to which an insurer's material exposures to climate risk are integrated into its climate risk management. Moreover, a blanket statement that the outcome of scenario analysis shall define the resilience of the business strategy of the insurer, providing inputs into its investment and underwriting processes and pricing, as well as testing the robustness and adequacy of its solvency position, fails to take into consideration the structural limitations of this tool to inform concrete business decisions as well as the materiality of climate-related risks to the insurer. The third sentence
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		of Paragraph 55 should be deleted; the insurer should determine whether and to what extent insights provided by climate scenario analysis can and should define its short- or long-term strategy and management actions. In some cases, insights provided by climate scenario analysis may not be sufficiently reliable to inform business and risk management decisions and management actions. We propose the following language for Paragraph 55: Supervisors should consider the extent to which an insurer's material exposures to climate risk are integrated into its climate risk management. We propo
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The Geneva Association	International	-Climate change risk is an important topic for the Geneva Association and our members and insurers are playing an active role in addressing climate change. As risk managers, insurers have been instrumental in increasing climate risk awareness and promoting risk mitigation and prevention. -As an industry that is directly impacted by the effects of climate change, managing its impacts is of great importance to us. Given the centrality of climate issues to our industry, we are eager to contribute to the IAIS's efforts in this domain.
The Geneva Association	International	o Climate change risk is an important topic for the Geneva Association and our members and insurers are playing an active role in addressing climate change. As risk managers, insurers have been instrumental in increasing climate risk awareness and promoting risk mitigation and prevention. o As an industry that is directly impacted by the effects of climate change, managing its impacts is of great importance to us. Given the centrality of climate issues to our industry, we are eager to contribute to the IAIS's efforts in this domain.
General comments on section 1 Introduction		
General Insurance Association of Japan	Japan	Paragraph 1 (4th line) refers to "agreed policies", but we recognize that what has been agreed at the policy level under the UNFCCC is limited. Therefore, "agreed goals" would be more appropriate. We agree with what Paragraph 5 describes. While climate-related scenario analysis has great potential to be useful in understanding risks in the insurance sector, it is a relatively new analysis method. Therefore, the methodology and data to be used have not yet been fully established and developed toward its introduction into insurance supervision, its use in specific decision making by insurance companies (e.g., underwriting and investment), and public disclosure of its results. It is necessary to refine the method by exploring exercises among jurisdictional authorities and insurance companies.
National Association of Insurance Commissioners (NAIC)	United States of America	• Para 7: this paragraph does not seem necessary as the first sentence just restates what was said on the prior page and the second tees up para 8 and 9 – suggest deleting. • Para 10: last sentence, suggest rewording to clarify: As a result, supervisors need to consider the proportionality when undertaking these exercises.

American Property Casualty Insurance Association	United States	The language in paragraphs 2 and 3 is too prescriptive. While we understand that application papers are not intended to be guidance and are intended to discuss best practices, the paper uses words like “should” frequently, and the implication is clear that supervisors and insurers are expected to employ scenario testing. We believe this is not the proper function of an application paper. We do believe, however, that paragraph 5’s focus on proportionality in the use of scenario analysis is entirely appropriate.
Public Citizen	United States	Scenario analysis may underestimate climate risk due to data gaps and models’ misalignment with climate science. Due to this, findings from scenario analysis are often used as an excuse for policy inaction. Supervisors should acknowledge this potential underestimation of climate risk due to limited data and modeling challenges. The use of scenario analysis should be proportional to the certainty and confidence in the results of exercises, and must not be treated as a substitute for other more effective tools at managing climate risk, such as Paris-aligned transition plans. This underscores the necessity for a precautionary approach irrespective of the outcomes of scenario analysis. The radical uncertainties and existential threats posed by climate change—including those related to the irreversible nature of non-linear tipping points—necessitate adopting a precautionary approach. Current models inadequately capture these threats, and traditional financial modeling frameworks fail to adequately address climate risk. There are profound uncertainties surrounding climate change, which render accurate risk assessment challenging. Therefore, a precautionary approach and other supervisory tools should be used in addition to scenario analysis to facilitate a managed transition and macroprudential policy interventions that aim to mitigate systemic financial risks.
Finance Watch	EU	The draft application paper has not identified ICP 16.8.9 on liquidity risk as relevant for the scenario exercises, yet the paper does mention that climate risk can be a driver of liquidity risk. This appears inconsistent and further guidance on how scenario analysis could be used as part of a combined approach with stress testing, in order to better capture situations such as the one referred to in the first row of Table 3 of the draft application paper.

Global Federation of Insurance Associations (GFIA)	Global	Many stakeholders readily acknowledge that climate scenario analysis is subjective. GFIA's general comment observes that, for the most part, climate scenarios "reflect subjective judgements made today about future possibilities." This view is also supported by some of the commentary in the application paper, e.g. ■ Paragraph 5 of the IAIS paper acknowledges this subjectivity and uncertainty, noting, "The use of scenario analysis as a supervisory tool should be proportionate to the supervisor's assessment of the current uncertainty and limitations of scenario analysis (and the confidence in the validity of assumptions)." ■ Later, paragraph 34d alerts readers that "Caution should be used when determining the impact to capital, given the high degree of tracking error, use of subjective assumptions, numerous variables, varying time horizons, range of possible outcomes associated with each scenario and overall uncertainty of scenarios." However, the paper also endorses scenario analysis for a vast range of purposes, including: emerging risk identification; business strategy development; risk appetite assessment; product pricing; capital management (albeit with the caution of paragraph 34d); the management of investment, transition, underwriting, physical, litigation, and operational risks; identifying risk correlations; assessing financial stability at both the individual insurer and sectoral levels; and supervisory analysis and research. Due to the inherent subjectivity and uncertainty of this type of analysis, GFIA would reiterate the need for supervisors to be cautious and not to place overreliance on scenario analysis for risk management purposes. Paragraph 1:(4th line) refers to "agreed policies", but GFIA recognises that what has been agreed at the policy level under the United Nations Framework Convention on Climate Change (UNFCCC) is limited. Therefore, "agreed goals" would be more appropriate. Paragraph 5:■ GFIA agrees with what Paragraph 5 describes. While climate-related scenario analysis has great potential to be useful in understanding risks in the insurance sector, it is a relatively new analysis method. Therefore, the methodology and data to be used have not yet been fully established and maintained toward its introduction into insurance supervision, its use in specific decision making by insurance companies (e.g. underwriting and investment), and public disclosure of its results. It is necessary to refine the method by exploring exercises among jurisdictional authorities and insurance companies. Existing frameworks on capital modelling and solvency assessments already require insurers to include all material risks. This includes climate change if applicable to the company's strategy and exposures. In addition, the existing capital framework incorporates climate-related risks by reflecting higher capital charges when larger losses are incurred and when there is an increase in unearned premium reserves. Beyond this, insurers themselves (and their investments) are also subject to third party assessments through rating agencies which take into account many factors including an insurer's risk management framework and the impacts of risks (including climate and credit risks). As part of the rating process, the agency engages in a rigorous review and will determine whether to downgrade a company (and/or its investments) based on the risks and approach presented.
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International Actuarial Association (IAA)	International	In Para 1 the IAA suggests inserting “likely” so the third sentence reads “It will likely result...”. The paper considers the development of scenarios in places so the third sentences in Para 2 should be deleted. In Para 6, it would be better to insert “foster” before “an international dialogue”.
Ceres	United States	The Introduction constructively positions climate change as a pivotal financial risk requiring urgent action while rightly situating scenario analysis as an essential tool for surmounting existing limitations in prevailing risk assessment approaches not equipped to handle complex climate dynamics. It puts forth a pragmatic roadmap for embedding practices within adaptable Insurance Core Principles. Furthermore, the recognition of evolving developments across climate science, data, and supervision to build resilience aptly demonstrates responsiveness to a shifting landscape. If inclined towards continual refinement, the IAIS could modestly expand concepts addressing: 1. Interconnectedness of risks: Climate risk does more than just amplify existing risks- it fundamentally alters their dynamics through complex interdependencies. Beyond direct first order impacts, significant attention should be paid to cascading second and third order effects across the broader economy. 2. Cross-sector perspectives: In addition to insurer-specific and sector-wide analysis, assessments should evaluate climate risk transmission channels across the full financial system. Siloed thinking will prove inadequate. 3. Distributional impacts: Climate risk exacerbates pre-existing socioeconomic and racial disparities. Scenario analysis objectives should include evaluating differential impacts on disadvantaged communities. 4. Transparency: Detailed results and lessons learned from analyses should be abundantly shared across regulatory jurisdictions and fully disclosed to market participants to accelerate collective understanding. In summary, the Introduction denotes an auspicious foundation blending rigor, restraint, and visionary leadership befitting the IAIS’ globally influential standard-setting role. Positioning climate scenario analysis more explicitly as a cross-cutting, decisively transparent exercise in systems thinking would further strengthen this well-developed Introduction as it lays the groundwork to help safeguard financial stability as insurers navigate formidable climate risk currents in the decades ahead.

The Sunrise Project, Financial Regulation and Policy Program	European Union	n/a
The Geneva Association	International	- The Geneva Association's work on climate risk assessment and scenario analysis, including our publications on regulatory approaches, resonates with several points in the application paper. We concur with the IAIS's recognition that climate scenario analysis still in its early stages and is an evolving tool (para 4). We also support the proportionate use of scenario analysis given the uncertainty and limitations of scenario analysis (para 5). - We appreciate and support the IAIS re-emphasising that climate change is a driver of existing risks and is not a new risk category. We also appreciate the clear distinction between scenario analysis and stress testing. The AP also rightly emphasises the importance of designing scenario analyses with specific objectives in mind (section 3). We also welcome the clear steer for supervisors to coordinate and collaborate on climate scenario analysis exercises, particularly when used for macro-prudential purposes. - Importantly, insurance firms have experience in managing climate risks, e.g. on their property book. Physical risks from climate change should not be conflated with this business-as-usual climate risk management as part of insurance firm's business but are to be seen as an additional risk driver on top of existing climate risk management that materializes over the longer term. The tools required to conduct such forward-looking risk assessments, e.g. climate scenario analysis, are not very well developed, and have structural constraints that limit its use as for micro- and macro-prudential purposes. Paragraph 34d acknowledges some of these limitations in the context of capital management; However, these limitations should be applied more broadly throughout the paper, as explained below.

The Geneva Association	International	o The Geneva Association's work on climate risk assessment and scenario analysis, including our publications on regulatory approaches, resonates with several points in the application paper. We concur with the IAIS's recognition that climate scenario analysis still in its early stages and is an evolving tool (para 4). We also support the proportionate use of scenario analysis given the uncertainty and limitations of scenario analysis (para 5). o We appreciate and support the IAIS re-emphasising that climate change is a driver of existing risks and is not a new risk category. We also appreciate the clear distinction between scenario analysis and stress testing. The AP also rightly emphasises the importance of designing scenario analyses with specific objectives in mind (section 3). We also welcome the clear steer for supervisors to coordinate and collaborate on climate scenario analysis exercises, particularly when used for macro-prudential purposes. o Importantly, insurance firms have experience in managing climate risks, e.g. on their property book. Physical risks from climate change should not be conflated with this business-as-usual climate risk management as part of insurance firm's business but are to be seen as an additional risk driver on top of existing climate risk management that materializes over the longer term. The tools required to conduct such forward-looking risk assessments, e.g. climate scenario analysis, are not very well developed, and have structural constraints that limit its use as for micro- and macro-prudential purposes. Paragraph 34d acknowledges some of these limitations in the context of capital management; However, these limitations should be applied more broadly throughout the paper, as explained below.
Comments on section 2 Scenario analysis versus stress testing		

General Insurance Association of Japan	Japan	Paragraph 10 describes that "supervisors should ensure that scenarios are sufficiently forward-looking". However, to "ensure" seems very difficult, because underwriting exposures at a future point in time, and vulnerabilities based on the development of disaster prevention infrastructure at a future point in time, will continue to be uncertain. The same paragraph also states that "supervisors need to consider the proportionality of exercises". We would like to confirm that the intent is to continue to make improvements in consideration of complexity and feasibility.
National Association of Insurance Commissioners (NAIC)	United States of America	• Paras 15 and 19: the IAIS does not use the term "corporates" – suggest using "companies" or "insurers" depending on the context. • Para 18, Table 3: In the third column of the "Non-life specific" row, recommend adding "than those" to the final sentence so it reads: "For instance, the move to electric vehicles will present different fire risks to vehicles than those powered by combustion engines." • Para 20: IAIS material typically uses "jurisdictional" rather than "national" – suggest: Transition risks will be driven by a range of jurisdictional factors...
American Property Casualty Insurance Association	United States	We appreciate paragraph 10's continued recognition of the need for proportionality.
Public Citizen	United States	In order to capture the non-linear tipping points and the existential impacts of climate risk, including tail risks from extreme events, supervisors should conduct a reverse stress test scenario that results in 100% GDP loss at a given temperature limit. Supplementing climate scenario analysis with a stress test will capture tail risks that may reveal greater financial vulnerabilities. This will prevent supervisors from ignoring the potential long-term existential risk of climate change in scenario analysis. Furthermore, short-term assessments should consider the potential for climate tail risks manifesting in the near term.

Finance Watch	EU	The distinction made between the scenario analysis and stress testing should be made clearer in terms of the conclusions and actions drawn from these exercises. From the prudential perspective, the definition should be consistent with the Basel Committee on Banking Standards (see footnotes 6 and 10 here: https://www.bis.org/bcbs/publ/d532.pdf). The difference should also be clarified in terms of the implications of the results of both exercises for defining management actions by insurers and prudential actions by supervisors. Paragraph 10 suggests that scenario analysis is well suited as a tool to capture the impacts of climate change. The same paragraph, however, also qualifies this statement by pointing to the limitations of using historical data. The conclusion is perhaps as contradictory as the first two statements, suggesting to create forward-looking scenarios that can capture specifics of climate change, but ensuring proportionality to avoid too much burden from the complexity of the task. Essentially the overview of scenario analysis promotes them as a solution, despite pointing to a fundamental flaw in the data they mostly rely on. It then also suggests that the way to overcome this is through more complex and detailed scenarios, but implies that they should not be required as they would be too burdensome. For the scenario analyses to meaningfully inform prudential actions and support effective risk mitigation, the scenarios, incl. underlying assumptions, should be consistent with climate science. In our recent report, 'Finance in a hot house world' (https://www.finance-watch.org/publication/report-finance-in-a-hot-house-world/), Finance Watch has made three concrete recommendations to improve the assessment of the economic consequences of climate change. They are: - to ensure that economic models account for the specificities of climate change, including its magnitude and irreversibility; - to ensure that the conclusions of economic models are compatible with the conclusions of climate science, including by rejecting the use of quadratic-only damage functions in loss assessments; - and to conduct unbiased and rigorous analyses of the results. Without improving these key areas, scenario analyses will provide unrealistic overviews of the possible impact of climate change and have limited use to assess the associated risks.
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Global Federation of Insurance Associations (GFIA)	Global	Scenarios are not a future prediction and that this therefore has limitations in how they are to be used and how and to whom they are disclosed. GFIA appreciates, however, the paper's continued reference for the need for proportionality. Paragraph 10: ■ It describes that "supervisors should ensure that scenarios are sufficiently forward-looking". However, to "ensure" seems very difficult, because underwriting exposures at a future point in time, and vulnerabilities based on the development of disaster prevention infrastructure at a future point in time, will continue to be uncertain. The same paragraph also states that "supervisors need to consider the proportionality of exercises". GFIA would like to confirm that the intent is to continue to make improvements in consideration of complexity and feasibility. ■ For this reason, IAIS should regard scenarios as future possibilities and not predictions of the future. Its focus ought to be on whether future climate risks and their impact on underwriting or investment or supply chains have been considered and if so what, if anything, has an insurer done.
International Actuarial Association (IAA)	International	In paragraph 10, first sentence, the IAA suggests rewording the first sentence to "Climate change is a driver of many existing risks and is likely to give rise to new risks. Supervisors expect..." The current wording implies that all risks are impacted materially by climate change, but that is an overstatement. Counterexamples include pet insurance and bail bonds. In para10 it says that "supervisors should ensure that scenarios are sufficiently forward-looking ...". We suspect that some supervisors will not enter their position with sufficient expertise to accomplish this. Should this paper suggest ways that such expertise could be obtained?
Ceres	United States	This section provides crucial definitional clarity, delineating scenario analysis and stress testing as distinct supervisory assessment methods. The distinctions noted regarding incorporating multiple risk dimensions and reflecting hypothetical scenarios make clear why climate-related risks are well suited to scenario analysis. The guidance around ensuring climate scenarios are sufficiently forward-looking given the emerging, non-linear nature of climate change is perceptive. However, the draft paper could potentially more strongly emphasize the point that historical data has limited utility for climate risk analysis and should not be unduly relied upon when considering future scenarios. The acknowledgement of the significant additional complexity entailed by climate scenario development is balanced by the prudent caution around proportionality and avoidance of false precision. This pragmatism, allowing for an evolution in precision over time as understanding deepens, is admirable. Insurers' existing risk taxonomy may require expansion to fully capture novel transmission channels revealed by climate scenario exercises. But the draft guidance correctly centers climate risk as an overarching risk driver that should permeate all existing risk categories rather than be siloed.

The Sunrise Project, Financial Regulation and Policy Program	European Union	Though scenario analysis and stress testing are distinct exercises, scenario analysis exercises must include stress scenarios in order to be useful and account for the uncertainty and risks associated with climate change. Specifically, scenario analysis exercises must capture tail risks associated with catastrophic climate change. They cannot be limited to scenarios that represent median risks. Tail risks must be included. The draft application paper correctly notes that historic data is not a good predictor of climate risks and, therefore, scenario analysis must be forward looking. While it is true that climate change is a long-term risk, there are also immediate risks and well-documented impacts today. Supervisors should not ignore the possibility for significant losses to materialize over near-term horizon and should include scenarios that have near-term impacts.
The Geneva Association	International	We appreciate and support the IAIS re-emphasising that climate change is a driver of existing risks and is not a new risk category. We also appreciate the clear distinction between scenario analysis and stress testing.
The Geneva Association	International	o We appreciate and support the IAIS re-emphasising that climate change is a driver of existing risks and is not a new risk category. We also appreciate the clear distinction between scenario analysis and stress testing.
Comments on section 2.1 Identifying and applying climate change risk drivers:		
American Property Casualty Insurance Association	United States	Paragraph 16 again uses “should” instead of less prescriptive language such as “may” in several places.

Public Citizen	United States	Climate change risk drivers will be non-linear and compounding. Scenario analysis should model compounding and interdependent events that occur in correlation with one another. Current versions of scenario analysis often model transition and physical risks separately, making it challenging to understand their correlated impacts and feedback loops. Climate change does not manifest in isolated, independent events; rather, interconnected events will arise concurrently and sequentially. Scenario analysis exercises should model interdependent events, as well as second- and third-order impacts. In addition, climate risks will have financial stability implications, therefore scenarios should model contagion and transmission channels that will impact individual insurers and the financial system on the whole. The transmission of physical and transition risk will have various networking effects and multiple feedback loops that extend throughout the financial market across extended time horizons. To adequately capture this complexity, models need to consider the relationship between micro- and macro- financial dynamics. Current scenario analysis models often overlook correlated risks that have impacts beyond the boundaries of one insurer. A comprehensive approach should entail modeling transmission channels across insurers and other financial entities to understand risks to the financial system. The draft application paper does not acknowledge the link between micro- and macro-prudential exercises. Macro- and microprudential scenario analyses are interconnected, as testing the resilience of financial systems under various climate-related stress conditions has repercussions for specific insurers due to contagion and spillover effects, and vice versa. Simultaneously, climate-related "sub-systemic" shocks to specific insurers and sectors may have implications for broader financial stability risk.
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Finance Watch	EU	This section looks at climate change as a driver of existing risk, but does not fully recognise the unique challenge it poses to existing risk management frameworks. Whilst there is recognition of the need to take a longer-term view of risk, the crucial question of the possible multiplying effects and impacts of different climate risks materialising simultaneously or overlapping is not addressed. One crucial point here is to look at how the unforeseen or abrupt materialisation of one or more of these climate related risks could cause economic disruption and a scenario where the economy cannot continue to function as it does now (see page 12 of the Finance in a hot house world report https://www.finance-watch.org/publication/report-finance-in-a-hot-house-world/). Paragraph 16 makes two important points that should influence approaches and thinking on climate risks. Firstly the world is not on track to meet internationally agreed targets and secondly insurers should take a ‘when’ and ‘how much’ rather than an ‘if’ approach to assessing how they will be impacted by climate change. While the paragraph points to accelerating efforts to address climate change and new technologies and approaches to address climate risk, it does not recognise the acceleration and unexpected ways that climate change and the associated risks are materialising. This perspective leads to downplaying the landscape of risk and is reflected in reliance on established boundaries on the potential scale of climate impacts from existing scenarios. This hits to the heart of the issue that although there is agreement that the probability of climate risk materialising is certain, there are still limits put on the expected economic losses, often contextualised with assumptions that action will be taken to prevent ‘worse’ happening. This in turn limits the scope of indicators, assumptions and the use of scenarios and raises concerns over the adequacy of the suggested supervisory and internal risk management response options (as discussed in parts 4.2 and 5 of the draft application paper). We welcome the clear inclusion of litigation risk as one of the drivers of climate-related risks. However, the draft application paper is largely focused on litigation risks in the insurers’ asset and underwriting portfolios, whilst only mentioning briefly litigation risks from insurers’ own practices. Given the recent history of litigation cases, litigation risks related to financial institutions’ own practices are growing, in particular due to insurers’ voluntary commitments and regulatory obligations. These litigations risks warrant more extensive consideration in the climate scenario exercises and risk assessment more broadly (refer, for example, to the publication Wetzer et al. https://www.science.org/doi/10.1126/science.adj0598 and the speech by Frank Elderson “‘Come hell or high water’: addressing the risks of climate and environment-related litigation for the banking sector” https://www.bankingsupervision.europa.eu/press/speeches/date/2023/html/ssm.sp230904~1ae5fa553e.en.html).
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Global Federation of Insurance Associations (GFIA)	Global	The focus on risk identification and understanding the drivers of risk is important. However, too much focus on risk and little or none on the opportunities that climate change brings will provide only part of the picture. The fact that litigation is occurring as noted in 15 should also acknowledge that judicial decisions bring clarity where there is uncertainty and that is beneficial for informing risk. As far as managing catastrophe risk, property/casualty insurers have proven they are capable and up to the task of managing this risk. In the broader context, climate is one risk. For many insurers it may be an important risk. Yet, for some insurers it may not be the greatest priority risk. As discussed elsewhere in comments, there are mechanisms and established frameworks for identifying and handling risks. The primary role of insurers is to be part of a risk management solution for others. Some insurers may also work to be helpful in reducing and transferring clients' transition risks. And if in this process there are material risks to an insurer from that transition, that insurer can assess and manage risks (as well as discuss them with regulators) through its existing processes, tools, and filings. Also, it is crucial to avoid presuming that a long-time horizon (as opposed to a typical shorter business planning time frame) is relevant and viable for especially property-casualty insurers. Essentially the exercise threatens to be speculative; the further out in time, the less certain the situation/results. Insurers should have the flexibility to exercise judgement as to how to best achieve climate-related goals. If the IAIS does elect to continue looking into this, among the considerations for such efforts is consistency with fundamental standards including being flexible and principles-based, risk-based, insurance fundamentals focused, materiality directed, respectful of data challenges, and iterative.
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International Actuarial Association (IAA)	International	Para 11 suggests changing the first sentence to “Climate change is a driver of many existing as well as future risks.” The word “many” reflects the fact that not all risks are impacted by climate change (e.g., bail bond risks). The words “as well as future” reflects the fact that not all impacts of climate change are currently present. Various tipping points are discussed in the literature regarding climate change, and where those tipping points have yet to be reached the associated risks are not yet present. Table 2 – the definition of climate-related risk should mention the risk of insurers being held liable. In the definition of Physical Risk, it may be clearer to start the definition with “The risk of direct damage to assets or property...” It would be better to reword the second sentence in Para 13 as “For example, certain asset classes may present increased risks if they become...” In para 14 mention of non-life insurers, the IAA suggests also addressing the use of the scenario analysis tool for evaluating longer-term strategy. That is likely to be where non-life insurers will find value in this tool for longer time horizons, as longer time horizons (e.g., 25 years) are premature for use in current pricing and investment portfolio decisions. The IAA suggests that para 15 should mention that an important outcome of climate litigation is damage to reputation. In para 16, the first sentence, the IAA suggests changing the end of the sentence so it reads “which poses significant risks for many insurers”. The current wording implies that climate change poses significant risks for all insurers, but that is not true (e.g., pet insurance providers). In para 16, last sentence, it says that insurers should also assess the need to adjust publicly available scenarios to meet their needs. The implication is that such publicly available scenarios can be adjusted to meet their needs. For some business models this would be problematic due to the need for far more granularity than is available in such publicly available scenarios. As a result, the IAA suggests some mention of the possibility that this may be problematic. (As an example of this need for greater granularity, some business models may entail writing only in certain areas not near coastlines or major rivers, and only in certain relatively small jurisdictions.) In addition, this para suggests that supervisors should be developing the scenarios rather than monitoring the scenarios used by insurers – it should be made clear what is intended here. Para 17 says that climate scenario models can help insurers build resiliency in their business models for time periods spanning multiple decades. This is not realistic for a business model that allows for 12 month policies with re-underwriting, re-pricing, and the ability to change contract terms. Where the business model deals with insuring the risks from current technology, that technology changes significantly over multiple decades, making any business planning beyond a decade to be not reliable. The IAA suggests removing the term “spanning multiple decades”, or caveating that phrase. (For such business models, multiple decade scenarios may have some usefulness for broad strategic direction, but even then the underlying environment may change so much in even one decade that any reliance on multiple decade scenarios is likely to be limited.) In Table 3, row for Non-life specific, it uses the phrase “NatCat perils on liabilities”. This is unclear for that industry sector, as existing balance sheet liabilities are not what is being discussed. Suggest changing “liabilities” to “incurred claims”. For short duration non-life business it is not the current balance sheet that is at risk, but future earnings and claim volume, as many claims are paid within one or two years such that while net assets are impacted there can be minimal impact on year-end liabilities. In the Life specific row of Table 3, this should refer to Acute physical risks rather than “chronic”. In the Health specific row. “can” should
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		replace “will”. In para 19, first sentence, suggest changing “underwriting liabilities” to “underwriting results” or something similar. The term “liabilities” in the non-life context typically refers to a balance sheet, while what is being discussed here is potential future incurred losses or underwriting results. This current wording seems to imply a long-duration business bias that does not translate well to a short-duration business model. Climate change for a fast pay property insurance business impacts net assets far more than balance sheet liabilities.
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Ceres	United States	This section examines the multifaceted risks climate change poses and the imperative for forward-looking analysis from a holistic perspective. The guidance on leveraging scenario exercises to surface emerging risks and inform long-horizon strategic decisions is prudent given climate change's overarching systemic impacts across timescales. While avoiding prescription, the paper rightly situates physical, transition, and litigation risks as inherently interlinked. This foregrounds the value of cross-dimensional scenario development attuned to transmission channels and cascading effects. Though still evolving, litigation risks warrant inclusion given potentially substantial balance sheet impacts. The differentiation between orderly and disorderly transition pathways well articulates rising mitigation ambition while outlining plausible adverse scenarios should cooperation falter. The paper could still more assertively emphasize the limitations of historical data given climate change's nonlinear impacts. In summary, this section provides excellent definitional clarity around manifold risks climate change introduces while outlining reasonable expectations for insurers to continually update their climate risk identification as scenarios and science evolve. The guidance strikes a grounded balance between conveying urgency while allowing room for uncertainty.
The Sunrise Project, Financial Regulation and Policy Program	European Union	The final application paper should clarify that litigation risks can also arise from claims related to insurers' contributions to climate change as well as insurers' climate-risk mitigation efforts (e.g., risk mitigation efforts that have disparate impacts on vulnerable populations). It should also clarify that insurers may face climate-related litigation risks due to failure to meet the commitments they have made or by following strategies that are inconsistent with public statements regarding their plans to address climate-related financial risks. Supervisors should not take steps to minimize potential legal liability by, for example, supporting legislation or submitting amicus briefs in litigation to minimize liabilities. Insurers should internalize the costs of their activities, and litigation is a critical mechanism for forcing them to do so.
Comments on section 3 Scenario analysis objectives and scenario design (ICP 24 and 16)		
Finance Watch	EU	Please refer to the responses to questions 6 and 7.

Ceres	United States	Section 3 pragmatically delineates the range of considerations supervisors must weigh in scoping climate risk scenario analyses. The guidance on aligning objectives with specific national insurance sector profiles and systemic risk transmission channels is perceptive. Acknowledging resource constraints and limitations of single exercises, the paper aptly suggests the strategic coordination across incremental efforts over time as capabilities advance. This avoids the extremes of either complacency or overreach. The flexibility shown in accommodating multiple timescales also demonstrates judicious pragmatism. However, the guidance could discuss more concretely the merits of top-down versus bottom-up approaches and hybrid models for balancing standardization and customization based on unique exposure profiles. More specifics on translational methodologies may also be valuable. That said, positioning scenarios firmly within Insurance Core Principles helps solidify foundations while allowing room for innovation as practices mature in this still nascent domain. Relating objectives back to potential solvency impacts and data disclosures shows savvy connections to real-world transmission channels.
E3G	United States	Section 3.1 Objectives of climate-related scenario analysis exercise We generally concur with the recommendations at paragraphs 22 -25, noting the following qualifications: Paragraph 25: change “important” to “essential” in defining objectives from the outset. Paragraph 24: re-phrase to state that “climate change raises both short term and long-term risks”. Paragraphs 24 & 25: Analysis of financial stability implications requires inclusion of a wide range of insurers. For example, material distress at or the activities of several insurers, none of which are individually systemically important, could have financial stability implications. Failure to mitigate the risks that protection gaps pose to the insurance and housing sectors, could result in risk transmission to the banking sector, with macroprudential implications.
The Sunrise Project, Financial Regulation and Policy Program	European Union	n/a

The Geneva Association	International	- We fully agree with the notion that scenario analyses need to be designed with specific objective in mind. We appreciate to see that the application paper emphasises this point.- To the extent that supervisory authorities conduct climate scenario analysis, there is potentially an important role for the IAIS to create more alignment between jurisdictions. Today, supervisors employ a range of approaches, which may lead to unnecessarily duplicative and redundant demands on insurers. The paper could be enhanced by outlining opportunities for regulatory coordination and operational efficiency. - For example, scenario analyses should wherever possible be limited to consolidated group assessments. This approach recognises the global nature of climate risks, has a clear focus on materiality to the firm and avoids a fragmented approach resulting from a range of approaches at the local entity level, without generating more meaningful results in terms of assessing material financial risks from climate change. - Also, we currently see little benefit in running climate scenario analysis on an annual basis, due to the long-term nature of climate change and with underlying assumptions and/or scientific evidence unlikely to change frequently. - With a view to enhance consistency and comparability, we support, where possible the use of a consistent set of scenarios, e.g. NGFS, in order to align on a common narrative. The scenario sets should be aligned, however, with the objectives of the analysis. Regardless of the scenario set, each firm will need a degree of flexibility to tailor the scenario analysis to their business model and risk profiles.
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The Geneva Association	International	o We fully agree with the notion that scenario analyses need to be designed with specific objective in mind. We appreciate to see that the application paper emphasises this point. o To the extent that supervisory authorities conduct climate scenario analysis, there is potentially an important role for the IAIS to create more alignment between jurisdictions. Today, supervisors employ a range of approaches, which may lead to unnecessarily duplicative and redundant demands on insurers. The paper could be enhanced by outlining opportunities for regulatory coordination and operational efficiency. o For example, scenario analyses should wherever possible be limited to consolidated group assessments. This approach recognises the global nature of climate risks, has a clear focus on materiality to the firm and avoids a fragmented approach resulting from a range of approaches at the local entity level, without generating more meaningful results in terms of assessing material financial risks from climate change. o Also, we currently see little benefit in running climate scenario analysis on an annual basis, due to the long-term nature of climate change and with underlying assumptions and/or scientific evidence unlikely to change frequently. o With a view to enhance consistency and comparability, we support, where possible the use of a consistent set of scenarios, e.g. NGFS, in order to align on a common narrative. The scenario sets should be aligned, however, with the objectives of the analysis. Regardless of the scenario set, each firm will need a degree of flexibility to tailor the scenario analysis to their business model and risk profiles.
Comments on section 3.1 Objectives of climate-related scenario analysis exercise:		
General Insurance Association of Japan	Japan	Scenario analysis can be conducted for a variety of purposes, such as understanding the risks of individual insurers, long-term (over 30 years) impacts, macroprudential impacts, and impacts on protection gaps. However, outcomes vary depending on scenario settings. To make the analysis results useful, it is extremely important to prepare in advance. It is also important to set appropriate objectives, select scenarios accordingly, and reduce insurer workload when designing scenarios. While we believe that the participation of IAIGs is necessary for scenario analysis to understand macroprudential impacts, whether it is necessary to include foreign subsidiaries within the scope should be considered depending on the purpose of the scenario analysis.

National Association of Insurance Commissioners (NAIC)	United States of America	• 3.1 subheading: typo – should be “exercises” • Para 25: first sentence, for consistency should this refer to the supervisor rather than the jurisdiction? Last sentence suggest this would be an and/or: The supervisor should decide on the scope of insurers to include in a scenario analysis exercise after defining the objectives. It is desirable that when the aim is to analyse financial stability implications, such exercises cover at least all domestic systemically important insurers and/or locally headquartered internationally active insurance groups (IAIGs). • Table 4: last row/column, suggest swapping the sentences to start with what the design may look at and then note working together in a twin peaks model.
Insurance Europe	Europe	• Para 22: It is important to emphasise that the objectives of the scenario should be clearly defined to be able to select the appropriate scenario type. • Para 25: Internationally active insurance groups (IAIGs) should not be automatically included in the scope of all climate stress tests (STs) with financial stability objectives. For example, an IAIG with globally diversified geographies would be less exposed to physical risk than a (re)insurer focused on a specific region, all other things being equal. The expected materiality of the exposure to the climate risks and geographies targeted by the scenarios should be the primary criterion to build the sample. • Table 4: The dynamic balance sheet is viewed by the IAIS as a more sophisticated approach which can help build capacity. However, the operational burden of developing such scenarios and modelling capabilities should not be underestimated and any requirements should be subject to strict ex-ante cost/benefit analysis. Developing capacity to perform fictional management actions under hypothetical assumptions is very onerous while not adding many insights to the actual steering of the business in the “real world”. As a general rule of thumb, minimising the complexity of the scenario analysis is going to make the results more interpretable and yield more tractable conclusions.

American Property Casualty Insurance Association	United States	Paragraph 22 contains a very important sentence. “It is important to clearly define the objectives of the exercise from the onset.” Supervisors should be clear about the purpose of scenario analysis, and the purpose should be one that is within the supervisor’s responsibility. We also agree with paragraph 24’s recognition of the cost in time and resources of performing scenario analysis, and the need for coordination with other supervisors if there is overlapping jurisdiction. In paragraph 25, we ask for the second sentence to be deleted. Discussion of macroprudential analysis is misplaced here, and any systemic risk analysis should be consistent with the holistic framework’s approach to risk identification.
Public Citizen	United States	In addition to the various purposes of scenario analysis covered in the draft application, including aiding in risk management, strategic planning and organizational resilience, scenario analysis should also be used for supervisors’ policy implementation, adaptation planning, and ameliorating protection gaps. Supervisors can implement policy through intervention-based scenarios that define benchmarks or set targets, such as scenarios that inform the planning of Paris-aligned transition plans.

Finance Watch	EU	As rightly stated in this section scenario analyses provide insights limited to what they have been created to project. In other words they are a way of formalising a hypothesis, but it is the hypothesis itself that must be tested against reality and used with full knowledge of its limitations. The point raised in paragraph 29 is of particular importance here, raising the limitations of historical data in capturing the full potential scale of climate impacts. Scenario design should notably reflect the fact that the scenarios of temperatures rise beyond 2°C, changes to the Earth ecosystems will be irreversible and the economic recovery from the damage of such changes will not be possible. To the point raised in paragraph 24, scenario analyses may well require significant further time and resource investment before they can be used more directly in climate risk management and supervision. As stated in our comments on section 2.1 above, it is essential to acknowledge the limitation of climate scenario exercises and the fact that they only provide indications of climate-related vulnerabilities of the insurers rather than full understanding of risks and their implications for the insurance sector and a wider financial system. Whilst it would be important to continue the work to improve scenario analysis, this would point to the need for precautionary prudential measures to be put in place to allow them to develop. The assertion in the second sentence of paragraph 24 is more concerning, as it points to an approach or expectation that running scenarios will allow insurers and supervisors to understand the full range of climate change impacts over time. This seems both unrealistic and not a suitable avenue to pursue for risk management and supervisory purposes. Given the non-linear nature of many climate-related changes and multiplier effects leading to unexpected acceleration, there is a high risk that full understanding will come too late and validate the need to have acted earlier.
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Global Federation of Insurance Associations (GFIA)	Global	Scenario analysis can be conducted for a variety of purposes, such as understanding the risks of individual insurers, long-term (over 30 years) impacts, macroprudential impacts, and impacts on protection gaps. However, outcomes vary depending on scenario settings. To make the analysis results useful, it is extremely important to prepare in advance. It is also important to set appropriate objectives, select scenarios accordingly, and reduce insurer workload when designing scenarios. The objectives must be proportional and material to the insurer as well as to the jurisdiction for which the exercise is being done. However, building capacity for the sake of it cannot be an objective of scenario analysis. In Table 4, the dynamic balance sheet approach is viewed as a more sophisticated approach meant to build capacity: “A dynamic balance sheet approach will allow insurers to consider the management actions they take to deal with the impact of climate change, thus building capacity.” But which capacity and for what? Developing capacities to perform fictional management actions under hypothetical assumptions could be very onerous while not adding much insight to the actual steering of the business in the “real world”. As a general rule of thumb, minimising the complexity of the scenario analysis is going to make the results more interpretable and yield more tractable conclusions. If the participation of internationally active insurance groups (IAIGs) is determined by their group-wide supervisors to be necessary for scenario analysis to understand macroprudential impacts, whether it is necessary to include foreign subsidiaries within the scope should be considered depending on the purpose of the scenario analysis. Ideally, the macro-prudential exercises are conducted on a group consolidated level given the global diversification of the risks. Regarding insurer-specific scenario analysis objectives, it should be recognised that some climate scenario objectives may be better addressed or already be addressed by alternative risk assessment tools. In some instances, this makes climate scenario analysis costly and duplicative without providing additional insights for the insurer. Paragraph 22: ■ Contains a very important sentence. “It is important to clearly define the objectives of the exercise from the onset.” Supervisors should be clear about the purpose of scenario analysis, and the purpose should be one that is within the supervisor’s responsibility. Paragraph 24: ■ GFIA also agrees with paragraph 24’s recognition of the cost in time and resources of performing scenario analysis, and the need for coordination with other supervisors if there is overlapping jurisdiction. Paragraph 25: ■ IAIGs should not be automatically included in the samples of all climate Stress Tests with financial stability objectives. An IAIG with globally diversified geographies would be less exposed to physical risk than a (re)insurer focused on a specific region, all other things being equal. The expected materiality of the exposure to the climate risks and geographies targeted by the scenarios should be the primary criterion to build the sample.
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International Actuarial Association (IAA)	International	In para 23, suggest changing “liabilities” to “future claim activity” or something similar. In Table 4, first row, the “design considerations” should include a caveat with regard to a static balance sheet approach. Such an approach is less useful to the extent that management action decision points are numerous during the time period being evaluated and there is a large degree of flexibility as to possible management actions. A static approach works best where such flexibility is limited (or non-existent) for a material portion of the business model and balance sheet, but can be less useful in the opposite situation. Where flexibility and opportunity for management actions is significant, a static approach may be viewed as more “precisely wrong” rather than approximately right. In Table 4, third row (assets), there should be mention of the following considerations that are important to the scenario design:· Duration of the fixed income assets. (A static approach over 20 years makes little sense for a bond portfolio with duration of, say, 5 years.)· Liquidity of the assets. (Assets for which there is a robust secondary market should be treated differently than illiquid assets. For example, if an insurer’s investment guidelines limit its holdings of non-investment grade assets, then it will not hold an asset until default if that asset is being continually degraded.) In Table 4, fifth row (long-term impact), this is missing a major consideration, namely whether the underlying business is long-term or short-term. For annual contracts, the number of management actions for projecting out even one decade make any detailed analysis very unreliable. For such business a long time horizon is only useful for broad strategic analysis, and even then such analysis is extremely uncertain. (Akin to evaluating college options for a newborn.) In Table 4, transition risk row, there should also be mention of the product mix. Different products have different exposure to transition risk. In Table 4, row discussing macroprudential risks for large insurers, consistency also requires consistent approaches for comparable product mixes. Size should not be the only consideration.
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Ceres	United States	Ceres applauds this section's grounded guidance on tailoring climate scenario analysis based on unique supervisor mandates, sectoral profiles, and resource constraints. The emphasis on strategic coordination and sequenced progression as capabilities advance over time demonstrates awareness of an evolving landscape. The guidance on addressing both micro and macroprudential risks shows thoughtful consideration of transmission channels and cascading impacts across the financial system and real economy. In complex cross-cutting issues like climate risk, system-wide resilience requires eliminating siloed thinking. However, we believe the paper would benefit from more details of methodological specifics on balance sheet approaches, top-down versus bottom-up tradeoffs, and risk model inputs/outputs to support customization. More granularity of technical translation would also be valuable. That said, relating objectives back to solvency and data disclosures shows perceptive connections to real-world considerations for insurers. Flexibility in accommodating unique localization dynamics is sensible given varied geographical and jurisdictional risk factors. In summary, this recommendations section takes a suitably broad approach in advising on process design while avoiding undue prescription. It balances ambition, standardization, and customization in a credible manner befitting IAIS' expertise.
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The Sunrise Project, Financial Regulation and Policy Program	European Union	The final application paper should clarify that supervisors should ensure that scenario analysis considers all risks relevant to their mandates. Even supervisors with only microprudential mandates must consider the effect that macroprudential risks will have on the safety and soundness of institutions they supervise when designing and reviewing scenario analysis exercises. While paragraph 24 correctly identifies climate change as a long-term risk, there are also immediate risks and impacts today. Supervisors should not ignore the possibility for significant losses to materialize over near-term horizons. Analysis of financial stability implications requires inclusion of a wider range of insurers than just those that are individually systemically important or internationally active. For example, material distress at or the activities of several insurers, none of which are individually systemically important, could have financial stability implications. As discussed in Box 2 of the draft application paper, protection gaps pose risks to financial stability and can cause macroprudential risks throughout the financial system, not just to insurers. For these reasons, the minimum scope of insurers that must be included in scenario analysis in order to assess financial stability implications cannot be determined by the systemic significance or international status of individual insurers.
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Comments on section 3.2 Scenario design

General Insurance Association of Japan	Japan	For the purpose of understanding macroprudential impacts, it would be appropriate to target IAIGs. However, regarding to what extent their foreign subsidiaries should be included in the scope and what scenarios would be applied to these subsidiaries, the purpose and intended outcomes of the exercise, as well as the burden on these insurers, should be considered. We agree that the scenarios to be used should be based on existing scenarios, such as NGFS scenarios. However, scenarios are not yet well established and would be continually refined. In conducting scenario analysis, scenarios should be firmly selected according to the exercise's objectives, the advantages and disadvantages of each scenario, and the intended outcomes. In addition, when assessing the results, the uncertainties and limitations of scenario analysis should be fully taken into account, as described in Paragraph 5. In terms of scenario analysis disclosure, it is desirable to ensure a certain degree of consistency and comparability of measurement results among insurers within each jurisdiction. From this perspective, setting a standardized approach and using common models at the jurisdictional level would be worth considering. Furthermore, while it is also important to strike a balance between global comparability and region-specific factors, considering the roles of IAIS and jurisdictional supervisors, what the IAIS's AP deals with in terms of scenario development and risk assessment should be limited to what IAIGs are effectively required to do.
National Association of Insurance Commissioners (NAIC)	United States of America	• Para 28: last sentence suggest this would be an and/or: ...it is desirable that when the aim is to analyse financial stability implications, such exercises cover at least all domestic systemically important insurers and/or locally headquartered internationally active insurance groups (IAIGs). • Table 5: second row, suggest deleting “such as the Bank of England” and move to footnote 10: See Bank of England: [hyperlink] • Table 5: third row, if ICP 24.0.3 is being quoted, then the “ie” is not needed: (see ICP 24.0.3: “the risk of amplification and transmission of shocks to the financial system and real economy caused by (...) collective actions of a sufficiently large number of insurers undertaking similar activities and thus exposed to common risks”).

Insurance Europe	Europe	• Table 5: Time horizon could be reflected through projection or crystallisation as in the case of the Bank of England. For a firm or supervisor trying to quantify its exposure, the latter approach is more insightful as it requires setting less assumptions and variables. The crystallisation approach allows a better understanding of the marginal contribution to the risk of a smaller set of key variables and drivers. In the same vein, the dynamic balance sheet approach, implying the use of future management actions in the projection, is much more complex to implement and hypothetical as a result than the static balance sheet approach. Supervisors should be mindful of the fact that management actions are scenario dependent. • Para 34.d: Insurance Europe highlights and strongly agrees with the IAIS's call for caution on capital impact. In particular, solvency impacts cannot determine when the design of the exercise implies a projection into the medium to long-term. It should be clarified that adding a regulatory shock (e.g. a 1-200 shock in the case of Solvency II) to the simulated shock assumed in the scenario would go beyond the severity of the regulatory framework. Therefore, the results of such an exploratory assessment cannot be used to challenge or determine an insurer's required capital. In this regard, the statements 34 (b and d), 55, 78 (2nd bullet point) expectations on use of climate scenario analysis to inform capital/solvency positions or pricing go too far. • Box 1: It is suggested that the Banque de France example is considered for updating, as it is not up to date with the recent ACPR exercise.
American Property Casualty Insurance Association	United States	Regarding Table 5's discussion of "time horizon and interval of analysis", we are very skeptical of the ability of scenario analysis to provide reliable information beyond five years or so. This is especially true for non-life insurers, which write 6-month or annual contracts and are constantly reevaluating their risks. Regarding paragraph 34(d)'s statement that "caution should be used when determining the impact to capital", we strongly agree and believe that scenario analysis should not be used to determine an insurer's required capital.

Public Citizen	United States	Financial supervisors and insurers should integrate climate scientists into the scenario analysis design process. Climate scientists should be involved in creating, reviewing, and designing scenario models, including the underlying assumptions, to ensure alignment with established climate science. It is crucial that models are aligned with scientific narratives of physical impacts to the environment, biodiversity, and climate systems. Supervisors should collaborate with climate scientists to ensure that models are aligned with these accepted climate narratives. This will enhance the credibility and reliability of climate scenarios. Physical risks associated with climate change can arise from chronic or acute risks. Extreme weather events like heat waves, wildfires, and hurricanes are categorized as chronic risks, while gradual changes to sea levels and precipitation are considered chronic risks. Scenario analysis models commonly use damage functions to assess physical risk. Assessing the impact of physical risks, particularly acute ones, presents significant challenges for insurers due to the limited forward-looking data on the level of exposure and vulnerability to various climate hazards. Damage functions commonly used in risk assessment often underestimate the financial impacts of physical risks because they frequently exclude common risks associated with climate change, such as sea level rise, heatwaves, and floods. When opting for descriptive rather than prescriptive physical risk shocks, the IAIS should caution supervisors to use more predictable shocks with available forward-looking data. This will reduce the variance of assumptions across insurers and improve the comparability of scenario results. For example, the Federal Reserve's recent bottom-up scenario exercise asks to project the impact of a hurricane in 2050 in a high-emission scenario. The use of an acute physical risk poses significant challenges in ensuring uniform assumptions across regulated entities regarding the hazard's intensity. Furthermore, integrated assessment models utilized in scenario analysis, which model the economic impacts of both transition and physical risks, often fail to align with climate science. These models suggest that significantly higher levels of global warming than the 1.5°C threshold are optimal. IAIS should ensure that damage functions and integrated assessment models are aligned with the scientific understandings of climate risk, including the tail or even existential risks associated with tipping points. IAIS should recommend incorporating exponential and logarithmic damage functions which depicts the likelihood of triggering non-linear impacts as temperatures exceed the 1.5°C threshold. This approach is aligned with climate scientists' perspective of climate change as an existential and irreversible risk. To give an accurate representation of the risk to insurers' portfolios, supervisors should understand the benefits and limitations to modeling with dynamic and static balance sheets. Static balance sheets do not capture managements' decisions in given scenarios, which removes the ability to analyze macroprudential implications for strategic decisions across insurers, such as rapid fire sales resulting in a "Minsky" moment of financial instability. With dynamic portfolios, financial institutions can adjust their hypothetical balance sheets to be consistent with desired objectives, while the alternative practice of using static portfolios is also unrealistic as insurers will likely shift their underwriting and investment policies over time. Dynamic balance sheets are particularly concerning if insurers are permitted to adjust balance sheets in overly optimistic ways that are unrealistic given market conditions. Assumptions insurers are making about the efficacy of measures to reduce risks might not be accurate, leaving outstanding risks unaddressed. In a dynamic model, management may plan to withdraw from or increase prices
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		in vulnerable markets as part of their climate risk mitigation strategy. Understanding these potential decisions is crucial for mitigating racial disparities, including bluelining, in regards to insurers' response to escalating climate risks. In addition, modelers retain a degree of discretion when it comes to making assumptions about technological advancements. Scenarios may overestimate the role of fossil fuels in the future by assuming that carbon dioxide can be removed on a large scale by unproven technologies. Consequently, scenarios constructed around unrealistic assumptions of the adoption of carbon capture utilization and storage technologies may underestimate climate risk. The proposal should clarify that modelers should not rely on such assumptions. Lastly, the reliability of any scenario design is contingent upon the specificity of the information available. As described in the draft application, climate scenario analysis should not rely on historical data as this fails to account for forward-looking risks. Limited availability of granular counterparty data and the lack of sufficient forward-looking sectoral, temporal, and spatial granularity in available datasets presents limitations to the design of scenario exercises. Data limitations hinder the ability to accurately assess and conduct scenario analysis. Models are often unable to translate scenario shocks to specific quantified impacts to particular financial instruments, sectors, and the economy writ-large due to the lack of temporal and spatial resolution of climate impacts over given time horizons. There are also challenges in identifying and quantifying the multiple transmission channels through which climate shocks propagate, as well as how firms respond to these shocks and the extent to which costs can be passed on to customers. Consequently, scenario analysis is limited by the availability of data, which should play a central role in determining the design of exercises that entities can feasibly conduct with existing climate data.
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Finance Watch	EU	This section outlines a number of important considerations on the limitations of scenarios in capturing the impacts of tipping points and of their reliance on historical data. It rightly points to the need to create forward-looking scenarios, but misses analysis or guidance on creating realistic scenarios. A key underlying issue is the reliance of NGFS and other scenarios that are based on Integrated Assessment Models (IAMs) and Computable General Equilibrium (CGE) models, which rely on a general equilibrium logic. Dynamic stochastic general equilibrium (DSGE) models also rely on general equilibrium theory and present a similar issue. Given the potential shock to the economic system created by climate change, the hypotheses underlying general equilibrium models are not realistic. A central issue is also the quadratic form of the damage function used by IAMs. The approach it takes towards temperature rises using rigged assumptions is not appropriate to capture the impacts of acceleration around tipping points. The results that using a quadratic function has on GDP impact of climate change differ drastically from using exponential or logistic functions (see pages 15 - 18 of the Finance in a hot house world report https://www.finance-watch.org/publication/report-finance-in-a-hot-house-world/). Based on this, we agree with the words of caution with respect to using conclusion of scenario analyses for assessing the potential future impact on the capital position, as expressed in the paragraph 34.d. Regardless of the models used in scenarios a 'reality check' of the results is required to be able to use their conclusions. If the scenarios and the modelling they use cannot reflect the real world then their results will have little value. This should be recognised in guidance given to both insurers and supervisors to add caution on how scenario analysis can be used to capture climate risk. An important element of possible scenario design pointed out in the application paper is the use of reverse stress tests, which can be a useful "fix" to partially overcome the limitations of the existing scenarios/underlying models to better understand climate-related vulnerabilities - a view supported by the actuaries/Institute and Faculty of Actuaries (https://actuaries.org.uk/media/qeydewmk/the-emperor-s-new-climate-scenarios.pdf). Akin to traditional financial scenario analyses and stress testing, reverse stress testing should be made a common risk management practice. With respect to the balance sheet assumptions as a scenario design choice, we caution against using the dynamic balance sheet assumptions only (i.e. completely omitting the static balance sheet assumption), as it will have fundamental implications for the results of the scenario analyses. Assuming that all insurers will be able to mitigate climate-related risks via changes of asset portfolio allocations and in their underwriting policies/coverage, would mean, at the systemic level, that many businesses or human activities would stop being insured or financed and therefore would cease altogether. This, in turn, would trigger negative spirals/second round effects, and imply a general disruption of the economy and of the financial system. We refer to page 20 of the Finance Watch report "Breaking the climate finance doom loop" (https://www.finance-watch.org/policy-portal/sustainable-finance/breaking-the-climate-finance-doom-loop/).
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Global Federation of Insurance Associations (GFIA)	Global	GFIA agrees that the scenarios to be used should be based on existing scenarios, such as NGFS scenarios. However, scenarios are not yet well established and would be continually refined. In conducting scenario analysis, scenarios should be firmly selected according to the exercise's objectives, the advantages and disadvantages of each scenario, and the intended outcomes. In addition, when assessing the results, the uncertainties and limitations of scenario analysis should be fully taken into account, as described in Paragraph 5. Table 5 explores several key design choices which can have a material impact on the ability to derive insights from the analysis and the cost to perform it. As already mentioned above, minimising the complexity of the scenario analysis is going to make the results more interpretable and yield more tractable conclusions. In this light: ■ The projection approach is much more complex and reliant on assumptions than the crystallisation approach. For a firm or supervisor trying to quantify risk exposures, the latter approach is more insightful as it allows a better understanding of the marginal contribution to the risk of a smaller set of key variables and drivers. In the same vein, the dynamic balance sheet approach, implying the use of future management actions in the projection, is much more complex to implement and hypothetical as a result than the static balance sheet approach. GFIA would caution supervisors to take tentative management actions considered in an exercise for a prediction of recovery planning. Management actions in “real life” depend on the circumstances. In terms of supervisory scenario analysis disclosure design, while it is necessary to ensure a certain degree of consistency and comparability of measurement results among insurers within each jurisdiction, each firm should also be free to develop their own scenarios according to their exposures and risk profile. Regarding the additional scenario design considerations for insurers, these ought to be set within the specific objectives of the climate scenario. These considerations may not be relevant or material for all insurers and flexibility for materiality and business model should be explicitly noted. Regarding paragraph 34(d)'s statement that “caution should be used when determining the impact to capital”, GFIA strongly agrees and believes that scenario analysis over the time periods discussed should not be used to challenge or determine an insurer's required capital. Para 48: On publication of the results, it is not clear what level of aggregation is sought and individual disclosure should be more clearly excluded given the level of uncertainty surrounding the scenario design and the results. Any public disclosure of the results of scenario analysis should be on an aggregate basis only, so that confidentiality is maintained, and no insurer's individual results are published. Scenario analysis is not reliable enough for disclosure of any individual company's results. Furthermore, while it is also important to strike a balance between global comparability and region-specific factors, considering the roles of IAIS and jurisdictional supervisors, what the IAIS's application paper (AP) deals with in terms of scenario development and risk assessment should be limited to what IAIGs are effectively required to do.
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American Academy of Actuaries	United States	As currently drafted, the paper contains an inconsistency between the recommended climate scenarios and the proposed uses of scenario analysis. Many current climate scenario sets vary by policy choice. For example, the NGFS scenarios, which the paper references repeatedly, are broadly categorized into three transition types: orderly transition, disorderly transition, and no transition (“hot house world”). Accordingly, if all the underlying assumptions were to perfectly forecast the future of various policy choices, the NGFS scenarios would demonstrate which policy choice would be best for the insurer and which policy position the insurer should support. Yet, the paper does not mention this conclusion from the NGFS scenarios; instead, it recommends using scenario analysis to answer questions that the scenarios themselves are not necessarily designed or intended to answer. The paper would benefit from linking potential climate scenarios to the intended uses of the analysis. We are also concerned that the paper fails to sufficiently address the weaknesses of static approaches and the use of longer-term time horizons when evaluating individual insurers or the insurance industry. Any change in the underlying risk environment will lead to management actions from insurers. The speed with which this happens is a function of the business model. Specific examples follow: 1. For general insurers covering property risk from weather events, these management actions will take place every year the environment changes. As a result, even a 5-year projection using static projections of the exposure of the insurer may produce unreliable (and unrealistic) projections. For example, in property insurance, it is expected that 10% - 20% of insured properties will exit the portfolio annually. For medium- or longer-term time horizons, material changes in the portfolio of insured properties are to be expected. Consequently, catastrophe model projections using static projections as to the mix of insured properties produce largely meaningless results for longer-term time horizons. 2. A similar problem exists regarding investment risk for all types of insurers. Nearly all insurers have limits on the portion of their
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		investment portfolio that is allowed to be in non-investment-grade assets. These limits will likely be a combination of internally set limits and statutorily or regulatorily set limits. As transition risks cause investments in certain asset categories to be rated lower and lower, those limits force the investment portfolio to change. A static set of assumptions regarding investment portfolios will therefore give an invalid projection of individual insurer's and the insurance industry's investment risks. The use of static approaches has value only if applied to a particular region's total exposures, serving as an indicator of where the overall market in that region would need action, such as stronger building codes or new infrastructure regarding physical risks.
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International Actuarial Association (IAA)	International	In para 30, are these science-based scenarios of sufficient granularity to be of use in all supervisor efforts on climate change? Perhaps this concern could be added to the discussion. In Table 5, Scenario design row, there is mention of data input not being sufficiently granular. Mention should also be made of considering whether data output is sufficiently granular. For example, if the output for a flood risk scenario is only at the province or state level, that output will not be helpful in evaluating risks restricted to areas of higher elevations within those provinces or states (or to buildings built with stricter building codes). In Table 5, Time horizon row, this discussion is missing a major consideration in the time horizon selection. That missing consideration is the business model and the ability (or inability) of management to adjust to changes in the environment. For example, it did not take decades for property insurers in California to adjust to a change in wildfire risk, nor did it take decades for property insurers in Florida to adjust to changes in perceived hurricane risk. Some mention should be made in this section for the ability of management to adjust to changes in the environment during the chosen time horizon. In general for this section, there should be more caveats with regard to the use (and limits) of static approaches for certain situations. Static approaches have a high risk of error where the portfolio consists of relatively liquid (in a multi-year timeframe) assets or insurance products, as it assumes management takes no actions as the environment evolves. Such an assumption makes no sense, as it assumes absent management. The only value is to show that current practices need to change over time.
Ceres	United States	This section provides an excellent comprehensive overview of the multidimensional considerations underpinning climate scenario design, spanning objectives, technical specifications, balance sheet assumptions, and more. The guidance demonstrates sophisticated awareness of the complex translational dynamics involved. The differentiation of supervisory versus insurer motivations shows thoughtful tailoring to unique risk management needs across entities. However, more specifics on modelling methodologies may have been valuable to support that customization in practice. Discussion of tradeoffs across timescales is notably perceptive - extended horizons better capture strategic implications but near-term exercises allow more tactical precision. Highlighting challenges of behavioral predictions and non-linear climate impacts also shows tempered avoidance of false confidence. Posting top-down, bottom-up, and hybrid approaches highlights scenario analysis' still-emerging nature and validates openness to experimentation alongside the need for consistency; however, more concrete discussion of their relative merits would have been beneficial.

The Sunrise Project, Financial Regulation and Policy Program	European Union	Climate scenario design requires climate scientists. Supervisors must collaborate with climate scientists in designing climate scenarios and ensuring that the economic impacts are consistent with scientific understandings of the effects of climate change on the planet and specific regions. Insurer-designed scenarios should be developed in consultation with climate scientists or, at a minimum, be consistent with the climate science consensus. Selection and compensation arrangements for climate scientists involved in these efforts must avoid conflicts of interest to ensure climate scientists can challenge and overrule supervisors and insurers without fear of losing their position. Supervisors should not rely on or permit insurers to use any scenarios, ready-made or adjusted, that produce or assume economic results that are inconsistent with climate science. Unfortunately, many models produce economic results for scenarios involving significant climate change that are not credible given the adverse impacts on habitability such scenarios would entail. (See, e.g. The Emperor's New Climate Scenarios - Limitations and assumptions of commonly used climate-change scenarios in financial services [1]). The financial system and the broader economy have been built on a natural world characterized by a stable climate. Indeed, a stable climate is the foundation of and precondition for modern civilization. It is simply unrealistic to assume that a climate that is significantly less conducive to human life and the natural environment in which humanity has flourished will exist alongside a strong economy and resilient financial system. Economic models that are not aligned with climate science and suggest that substantially higher levels of global warming than the 1.5 degree celsius threshold are cost-benefit-optimal (see e.g. Policies, Projections, and the Social Cost of Carbon: Results from the DICE-2023 Model [2]) should be considered not to be fit for purpose by supervisors, hence excluded from scenario analysis. Scenario analysis exercises should not rely solely on dynamic balance sheet designs. Static or hybrid approaches must be part of any scenario analysis exercise. Dynamic balance sheets raise moral hazard problems. Specifically, they allow for insurers to dynamically increase protection gaps as a microprudential de-risking. Whenever dynamic balance sheet designs are used, they must consider the macroprudential risks insurers' responses create. In addition, overly dynamic balance sheet assumptions may be overly optimistic. Insurers may not be able to adjust their balance sheets in a manner that meaningfully addresses the risks caused by prior balance sheet decisions, particularly if the level of risk that insurers must address dynamically is itself underestimated. As with scenario analysis more generally, dynamic balance sheet designs may create a false sense of security. Catastrophic climate change is not a risk that can be managed. Supervisors should develop reverse stress tests (RST) that force insurers to work backward toward a zero emission and minimum possible climate-related financial risk world. Table 5 indicates that supervisors can develop RST, but development and use of RST should be used by all supervisors. Standard scenario analysis and RST are complementary tools. RST enables supervisors and insurers to identify potential weak points and risk concentrations. RST requires asking under what scenarios an insurer might fail. This high severity outcome approach can help supervisors and insurers better understand how resilient or fragile the business model is in the context of a changing climate. In addition, it may help prevent supervisors from relying primarily on potentially overconfident scenarios based on economic models that significantly underestimate the economic impact of climate change on the economy and thus on an insurer's balance sheet. In combination with regular stress testing
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		and scenario analysis, IAIS should make it clear to supervisors that RST must form an integral part of an institution's risk assessment and "reduce the crisis short-sightedness (disaster myopia) and the associated, and possibly wrong, sense of security of the decision-makers." [3] Physical risks should not only be included in medium- to long-term horizons. Certain areas are experiencing significant increases in physical risks now, contributing to rising protection gaps. (See, e.g. Remarks by Secretary of the Treasury Janet L Yellen at Federal Advisory Committee on Insurance Meeting [4]).-----[1] Trust et al. (2023). The Emperor's New Climate Scenarios Limitations and assumptions of commonly used climate-change scenarios in financial services URL: https://actuaries.org.uk/media/qeydewmk/the-emperor-s-new-climate-scenarios.pdf [2] Barage, L., Nordhaus, W. (2023). Policies, Projections, and the Social Cost of Carbon: Results from the DICE-2023 Model. URL: https://www.nber.org/system/files/working_papers/w31112/w31112.pdf [3] Eichhorn, M., Bellini, T., Mayenberger, D. (2021). Reverse Stress Testing in Banking – A Comprehensive Guide. URL: https://www.degruyter.com/document/doi/10.1515/9783110647907/html?lang=en [4] Yellen, J. (2023). Remarks by Secretary of the Treasury Janet L Yellen at Federal Advisory Committee on Insurance Meeting. URL: https://home.treasury.gov/news/press-releases/jy1375
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The Geneva Association	International	- Although the paper acknowledges the evolving-stage status of climate scenario analysis and some of the limitations of the tool, most notably in paragraph 34d, it gives insufficient attention to these limitations throughout the paper. Instead, the paper promotes a variety of uses for scenario analysis, including investment management and underwriting processes (incl. pricing), risk management (incl. risk appetite statements), capital/ solvency management, business strategy, and macroprudential analysis (by supervisors). The IAIS also provides descriptive indications on how firms have to incorporate the outcomes of climate scenario analysis in their governance, indicating that such assessments should provide an adequate basis for the assessment of overall solvency needs or to inform concrete management actions based on adverse scenarios (paragraph 78). The suggested expansive use of a tool that has structural limitations creates a fundamental tension within the application paper.- The Geneva Association view is that company specific forward looking climate risk assessments should be aligned with the effective duration of the underlying insurance liabilities to inform concrete business decisions today. But the impact of climate change is for some parts slow moving while weather-related exposures can be flexibly managed and steered through limited duration of re/insurance contracts (typically one-year contracts for property insurance) as well as active portfolio steering. For the same reasons, such forward-looking analysis is not adequate for conclusive risk management decisions, including prudential requirements, e.g., capital requirements, which are also set for a short time horizon. - While some limitations may be addressed over time such as the lack of reliable data, the uncertainty regarding projections of frequency and severity of insured perils and the uncertainty around climate adaptation measures taken. Other limitations, however, are more endemic, such as the uncertainty of any projection spanning multiple decades into the future. Still, such challenges limit the suitability of such assessments to inform concrete business decisions such as pricing, underwriting or investment decisions or capital/ solvency requirements. We believe the paper is grounded in an assumption of an unrealistic degree of precision in scenario analysis and urge the IAIS not to promote or overutilize tools for purposes for which they are not necessarily well suited. Areas where we believe the IAIS has gone too far, include the following areas: § Informing business strategy (paragraphs 13, 17, 27, 34, 65, 77)§ Informing risk appetite (paragraphs 74, 75, 77)§ Assessing and managing capital (paragraphs 27, 34, 55, 78)§ Assessing and managing investment/ transition risks (paragraphs 13, 26, 27, 58)§ Assessing and managing underwriting risks (paragraphs 14, 26, 59, 60)§ Identifying climate-change related risk correlations (paragraph 72)§ Assessing financial stability implications (paragraphs 25, 26, 35-44)- It is in our view important to address the discrepancy between the paper's acknowledgement of the unreliability of scenario analysis and the proposed broad uses of the tool. It may therefore be more appropriate to position the application paper as aspirational, emphasizing the potential future applications of scenario analysis, while acknowledging its limitations in terms of supervisory and risk management effectiveness. Concrete paragraphs that merit reconsideration in line with the aforementioned limitations are: 27 (the use of scenario analysis for investment portfolio and capital position); 34 (conducting scenario analyses to support pricing and capital positions); 55 (use of scenario analysis for testing the robustness and adequacy of solvency positions and defining strategy); 60 (integrating the results of climate scenario analysis into underwriting processes); 74 (use of scenario analysis to assess the
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		adequacy and appropriateness of the existing risk appetite statement); 75 (SA as a tool to identify and assess the robustness of their risk appetite statement); 78 (providing Board with scenarios that provide an adequate basis for the assessment of overall solvency needs). - Table 5 highlights various considerations involved with the design of scenario analysis. Our view is that company-specific forward-looking climate risk assessments should be aligned with the effective duration of the underlying insurance liabilities. Accordingly, the time horizon of scenario analysis for property and casualty business should be shorter than the time horizon for life insurance business. This principle is insufficiently addressed in the paper.
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The Geneva Association	International	o Although the paper acknowledges the evolving-stage status of climate scenario analysis and some of the limitations of the tool, most notably in paragraph 34d, it gives insufficient attention to these limitations throughout the paper. Instead, the paper promotes a variety of uses for scenario analysis, including investment management and underwriting processes (incl. pricing), risk management (incl. risk appetite statements), capital/ solvency management, business strategy, and macroprudential analysis (by supervisors). The IAIS also provides descriptive indications on how firms have to incorporate the outcomes of climate scenario analysis in their governance, indicating that such assessments should provide an adequate basis for the assessment of overall solvency needs or to inform concrete management actions based on adverse scenarios (paragraph 78). The suggested expansive use of a tool that has structural limitations creates a fundamental tension within the application paper. o The Geneva Association view is that company specific forward looking climate risk assessments should be aligned with the effective duration of the underlying insurance liabilities to inform concrete business decisions today. But the impact of climate change is for some parts slow moving while weather-related exposures can be flexibly managed and steered through limited duration of re/insurance contracts (typically one-year contracts for property insurance) as well as active portfolio steering. For the same reasons, such forward-looking analysis is not adequate for conclusive risk management decisions, including prudential requirements, e.g., capital requirements, which are also set for a short time horizon. o While some limitations may be addressed over time such as the lack of reliable data, the uncertainty regarding projections of frequency and severity of insured perils and the uncertainty around climate adaptation measures taken. Other limitations, however, are more endemic, such as the uncertainty of any projection spanning multiple decades into the future. Still, such challenges limit the suitability of such assessments to inform concrete business decisions such as pricing, underwriting or investment decisions or capital/ solvency requirements. We believe the paper is grounded in an assumption of an unrealistic degree of precision in scenario analysis and urge the IAIS not to promote or overutilize tools for purposes for which they are not necessarily well suited. Areas where we believe the IAIS has gone too far, include the following areas: § Informing business strategy (paragraphs 13, 17, 27, 34, 65, 77) § Informing risk appetite (paragraphs 74, 75, 77) § Assessing and managing capital (paragraphs 27, 34, 55, 78) § Assessing and managing investment/ transition risks (paragraphs 13, 26, 27, 58) § Assessing and managing underwriting risks (paragraphs 14, 26, 59, 60) § Identifying climate-change related risk correlations (paragraph 72) § Assessing financial stability implications (paragraphs 25, 26, 35-44) o It is in our view important to address the discrepancy between the paper's acknowledgement of the unreliability of scenario analysis and the proposed broad uses of the tool. It may therefore be more appropriate to position the application paper as aspirational, emphasizing the potential future applications of scenario analysis, while acknowledging its limitations in terms of supervisory and risk management effectiveness. Concrete paragraphs that merit reconsideration in line with the aforementioned limitations are: 27 (the use of scenario analysis for investment portfolio and capital position); 34 (conducting scenario analyses to support pricing and capital positions); 55 (use of scenario analysis for testing the robustness and adequacy of solvency positions and defining strategy); 60 (integrating the results of climate scenario analysis into underwriting processes); 74 (use of scenario analysis to assess the
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		adequacy and appropriateness of the existing risk appetite statement); 75 (SA as a tool to identify and assess the robustness of their risk appetite statement); 78 (providing Board with scenarios that provide an adequate basis for the assessment of overall solvency needs). o Table 5 highlights various considerations involved with the design of scenario analysis. Our view is that company-specific forward-looking climate risk assessments should be aligned with the effective duration of the underlying insurance liabilities. Accordingly, the time horizon of scenario analysis for property and casualty business should be shorter than the time horizon for life insurance business. This principle is insufficiently addressed in the paper.
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Finance Watch	EU	'Box 2' on protection gaps outlines important areas for supervisors and insurers to assess as part of their climate risk management. Similar issues over the use of historic protection gap data and limitations of existing models are also relevant here. Scenario analysis could be useful to foster broader policy discussion, by investigating the availability and affordability of insurance under different scenarios. The wording of the section on the financial stability/systemic risk implications of climate change and the insurance sector should be strengthened to: 1) highlight the implications beyond protection gaps; 2) highlight the large scale disruptions of the economic activities which will result from protection gaps (beyond increased credit risk to the banks and fiscal risks), as many economic activities will simply not be take place in the absence of insurance coverage (e.g. international trade and supply chain disruptions).
Ceres	United States	As an organization focused on mobilizing capital market leadership on climate risk, Ceres strongly supports the paper's positioning of climate scenario analysis as an essential macroprudential supervisory tool. Rigorously assessing systemic risks and interconnectedness is vital. We particularly endorse the attention on possible protection gaps which could disproportionately impact disadvantaged communities and amplify inequality. Transparently assessing and addressing gaps through collaborative policy solutions must be an urgent priority. Additionally, the emphasis on disclosure requirements and transparency shows astute understanding of disclosure's pivotal role driving climate risk awareness, accountability, and continual progress across public and private sector financial institutions alike. However, successfully realizing disclosure's immense potential requires further specification around consistent, decision-useful reporting standards, accessible methodological resources, sustained capability building and aggressive timelines matching the scale of the climate emergency. In summary, this section puts forth a balanced vision for macroprudential supervision assessing potential financial stability risks holistically while centering equitable consumer resilience. Concrete implementation efforts must rapidly follow to translate guidance into on-the-ground impact as threats escalate. Delay invites unnecessary risk given the stakes involved for both institutional solvency and community prosperity.

E3G	United States	Section 4-1 Assessing systemic importance (ICP 24.3) We generally concur with the recommendations in paragraph 37 & 38. We concur with the observation contained in paragraph 36 notes that supervisors need to assess the potential systemic importance of the insurance sector as a whole. In addition, we concur with the spirit of the recommendations in paragraph 37 & 38 to provide supervisors with flexibility in the scoping of scenario analysis, especially to gain a better understanding of risks across the financial system. Emerging risks across the financial system include the global growth of protection gaps noted in the IAIS's call to action, especially because. negative impacts will be borne disproportionately by vulnerable populations. The NGFS noted that "...the NGFS scenarios provide clear evidence that early action delivering an orderly transition to achieve global net zero emissions by 2050 is the optimal pathway for minimizing climate-related risks and losses. Insurers' own underwriting of, and investment in, fossil fuel activities contribute to the very climate-related risks that are now causing insurers to reduce and/or eliminate coverage. Paragraph 37 should be amended to reflect more definitively that supervisors "should" include climate risks considerations through climate-related scenario analysis exercises in scope of their quantitative analyses – considering both inward and outward risks. – as required under ICP 24.2" (footnote omitted). Supervisors should include climate risk considerations through climate-related scenario analysis and consider both inward and outward risk.
The Sunrise Project, Financial Regulation and Policy Program	European Union	n/a

The Geneva Association	International	This section describes various macroprudential purposes for which climate scenario analysis might be useful. The meaning of systemic risk in this context requires clarification. The FSB defines systemic risk as a threat to the entire financial system, “the risk of disruption to the flow of financial services that is caused by an impairment of all or parts of the financial system and has the potential to have serious negative consequences for the real economy” . While climate change undeniably poses risks to societies globally, to date, the linkages between climate change, the insurance sector and impairment of the financial system are unsubstantiated. Also, the paper should keep in mind that while systemic risks are usually in relation to a fast-moving threat, climate change is a much slower phenomenon. For example, it is unclear how the impact of climate risk on asset values might create a fire sale risk such as what was experienced during the 2008 financial crisis. Also, there are differences in the composition of the investment portfolio between banks and insurers that the IAIS should take into consideration in its approach, with insurers investment portfolios being driven by asset liability management and hence hold significant assets in government bonds that have a different exposure to climate related transition risks. Importantly, the IAIS’s Global Insurance Market Report (GIMAR) published in September 2021 concluded that the insurance industry was well-positioned to withstand potential losses related to climate relevant investments. Considering this, the IAIS should focus on the micro prudential management of risk by individual firms rather than macroprudential threats to the financial system.
The Geneva Association	International	o This section describes various macroprudential purposes for which climate scenario analysis might be useful. The meaning of systemic risk in this context requires clarification. The FSB defines systemic risk as a threat to the entire financial system, “the risk of disruption to the flow of financial services that is caused by an impairment of all or parts of the financial system and has the potential to have serious negative consequences for the real economy” . While climate change undeniably poses risks to societies globally, to date, the linkages between climate change, the insurance sector and impairment of the financial system are unsubstantiated. Also, the paper should keep in mind that while systemic risks are usually in relation to a fast-moving threat, climate change is a much slower phenomenon. For example, it is unclear how the impact of climate risk on asset values might create a fire sale risk such as what was experienced during the 2008 financial crisis. Also, there are differences in the composition of the investment portfolio between banks and insurers that the IAIS should take into consideration in its approach, with insurers investment portfolios being driven by asset liability management and hence hold significant assets in government bonds that have a different exposure to climate related transition risks. Importantly, the IAIS’s Global Insurance Market Report (GIMAR) published in September 2021 concluded that the insurance industry was well-positioned to withstand potential losses related to climate relevant investments. Considering this, the IAIS should focus on the micro prudential management of risk by individual firms rather than macroprudential threats to the financial system.

General Insurance Association of Japan	Japan	In order to understand systemic risks, it is important to develop scenarios that take into account issues at both the national and international levels. However, it is assumed, for example, that scenario analysis to measure impacts across multiple sectors at the national level involves considerable complexity. Therefore, when conducting scenario analysis exercises, careful consideration should be given to balancing intended outcomes and workload, as well as feasibility. The impact of risk concentration on reinsurance is greatly influenced by the underwriting policies and management decisions of insurers (cedents) and reinsurers, as well as by trends in the global reinsurance market and capital markets as represented by cat bonds. Effective scenario analysis requires scenario design that takes these factors into account.
Principles for Responsible Investment	United Kingdom	The PRI welcomes and supports the recommendation for supervisors to analyse climate-related factors as systemic risks and to coordinate with other supervisors across jurisdictions and with regional or global insurance standard setters. Although the first approaches to climate risk in the insurance sector focused on potential impacts on single-location assets such as real estate or infrastructure, it is increasingly clear that climate impacts are occurring in every industry across the economy. Rising temperatures are altering weather patterns, water availability, and biodiversity across regional and national boundaries and in ways that affect the entire context of economic activity. For example, in recent years, low water levels in many rivers around the globe have led to increases in the cost of transport and decreases in hydropower production. While the specific impact of each of these phenomena on any particular insurer's business will be challenging to evaluate, it is essential that supervisors work to develop a comprehensive global understanding of the systemic impact of climate change on the insurance industry as a whole.

National Association of Insurance Commissioners (NAIC)	United States of America	• Para 36: for clarification, suggest quoting the ICP material: ICP 24.3 requires supervisors to have “an established process to assess the potential systemic importance of both individual insurers and the insurance sector” . In particular, guidance under ICP 24.3.3 states that, as part of their assessment under ICP 24.3, supervisors “should consider emerging developments that may affect the insurance sector’s risk exposures”. • 4.1.1 subheading: IAIS material typically uses “jurisdictional” rather than “national” – suggest: Challenges at a jurisdictional level • Para 39: a) For instance, this could be addressed by developing a cross- agency standing committee or a similar structure for information sharing and joint analyses. b) In this case, the two authorities could strive to share information and collaborate to discuss findings and formulate strategies. • Para 40: second sentence, suggest rewording as this is not something that currently exists: This is may be a useful exercise to the extent it reduces the number of overlapping requests that insurers receive... • Para 44: Comments on the second and forth bullets - Transition risk specific to: carbon-intensive assets concentrations (whether in fixed income or equity investment) and their associated credit quality. This has the potential to be both a micro and macroprudential risk;- Reinsurance: given ... (eg reducing coverage for certain primary insurers in specific jurisdictions, increasing prices). Scenario analysis should critically challenge assumptions to understand what impact climate change will have on different parts of the insurance sector. • Box 2: while the material in this box provides a good description of how scenario analysis may help with protection gaps, it is not clear why this is in a blue example box, which are typically used in IAIS material for jurisdictional examples, and examples that are much shorter. Also it’s not clear how this necessarily relates to systemic importance which is the subject of this section. Suggest making this material a (sub)section of paper where most relevant and numbering the paragraphs which will help readability. • Box 2: Impact on policyholders: As climate change impacts physical risk in the form of increasing frequency and severity of losses from weather extremes, insurers could decide to reprice their products to reflect the change in risk. This could lead to a decline in the affordability of property catastrophe lines and reduced adoption as individuals and businesses are priced out of the market. A sufficiently material increase in physical risks could reduce insurers’ risk appetite. Insurers may reduce their exposure to certain geographies or perils, which could lead to an exit or substantial reduction in the availability of catastrophe insurance cover. This may also apply to other lines of business. • Box 2: last subsection, first bullet – IAIS material typically uses “jurisdictional” rather than “national” – suggest: To create a jurisdictional climate peril map...
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American Property Casualty Insurance Association	United States	We are very skeptical about the use of scenario analysis on a cross-sectoral basis, as paragraph 39 appears to envision. The insurance industry (and different parts of the industry, such as non-life vs. life) is too different from the banking industry or non-bank financial institutions.
Public Citizen	United States	The proposal usefully acknowledges that risks of systemic importance include not only risks to the safety and soundness of individual insurers, but also risks to the insurance sector more broadly. As the Financial Stability Oversight Council of the US observes in its 2023 Annual Report, as insurance increasingly becomes less accessible in climate vulnerable areas, financial risks will flow to consumers, then to lenders and investors and others. Ultimately, costs will fall to taxpayers and the financial system. Moreover, threats to the financial system could occur not only through the interconnectedness of these entities, but also through the heightened inequality that will result from the lack of access to insurance. Marginalized and BIPOC communities will be disproportionately impacted, given that they disproportionately live in climate vulnerable areas and are more likely to lose insurance as a result. Scenario analyses designed to address macro concerns should consider these concerns.
Finance Watch	EU	The assessment of areas of risk concentration is important and identifies some key areas. The transition risk assessment on carbon intensive assets is particularly important, given that it requires the ‘inwards and outward’ looking approach. A difficult point here is how to capture concentration risks in carbon-intensive assets in other parts of the financial industry. Insurers and some other financial institutions may start reducing exposures to carbon-intensive assets, but other parts of the industry pursue a different strategy (see https://www.ft.com/content/ed11c971-be02-47dc-875b-90762b35080e and pose a risk to both insurers directly involved with them or to the system as a whole. Box 2 is also particularly important considering that the results of climate scenario exercises in the insurance sector should feed similar exercises in other sectors, in particular banks, to understand the systemic implications of insurance. This could cover scenarios such as what implications mass withdrawals or rises in the price of insurance will have for banks' lending. It could also look at whether the burden of insured losses will be pushed onto public budgets.

Global Federation of Insurance Associations (GFIA)	Global	To understand systemic risks, it is important to develop scenarios that consider issues at both the national and international levels. However, it is assumed, for example, that scenario analysis to measure impacts across multiple sectors at the national level involves considerable complexity. Therefore, when conducting scenario analysis exercises, careful consideration should be given to balancing intended outcomes and workload, as well as feasibility. The impact of risk concentration on reinsurance is greatly influenced by the underwriting policies and management decisions of insurers (cedents) and reinsurers, as well as by trends in the global reinsurance market and capital markets as represented by cat bonds. Effective scenario analysis requires scenario design that takes these factors into account. Box 2 goes into extensive detail on how supervisors could use scenario analysis to understand potential protection gaps within the context of systemic risk, even though protection gaps should not be considered first in relation to systemic and financial stability risk. Within the realm of climate scenario analysis, many of the outcomes discussed in Box 2 must be considered 3rd-order (climate risk making insurance unavailable/unaffordable, lowering mortgage values, increasing bank credit risk) or even 4th-order (climate risk lowering insurers ability to issue new business, increasing protection gaps, causing government to step in as insurers of last resort, increasing sovereign credit risk) effects of climate risk, rather than the typical 1st-order (physical risk) or 2nd-order (transition risk) effects. Given the modelling challenges and assumption uncertainties for just these 1st- and 2nd-order climate risk effects, scenario analysis should not be assumed to be useful or reliable for assessing these 3rd- and 4th-order effects. As noted in our response to question #1, supervisors must exercise caution about conclusions they may draw and certainly should not consider public disclosures or interventions either at a macro or micro level based solely on the learnings from an exploratory climate scenario exercise. To the extent the suggested addition may also imply that climate-related financial risk is a systemic risk to the insurance sector, GFIA would disagree. Indeed, at present there is not sufficient evidence that climate-financial risk currently threatens the solvency of property-casualty insurers. Further, climate-financial risk is not consistent with common notions of systemic risk in which major concerns may develop quickly and have cascading impacts.
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International Actuarial Association (IAA)	International	In para 37, the current wording is not clear for non-life insurers where the phrase “in terms of assets and liabilities” is used. The term “liabilities” for such insurers would imply a balance sheet value, while what is meant in the non-life context appears to be incurred losses. In para 44, the current wording is not clear for non-life insurers where the phrase “underwriting liabilities” is used. The term “underwriting liabilities” for such insurers would imply a balance sheet value, while what is meant in the non-life context appears to be incurred losses. Alternatively, a phrase such as “claim exposures” could be used. In para 44, last bullet point, last sentence, suggest changing “will have” to “may have”. The word “will” seems to be too strong for scenario analysis modelling in this case. In Box 2, at the end of page 19, it says that “insurers could decide to reprice their products to reflect the change in risk”. The word “could” is too weak. An insurer that did not reprice its products to reflect a change in risk would be viewed as being mismanaged. Suggest at a minimum to change “could” to “will likely”. Grammar – In Box 2 on page 20, third bullet under “Financial stability considerations”, “incur” should be “incurs”. In Box 2, top of page 21, should there have been some mention of Insurance Linked Securities (e.g., Cat Bonds)? In Box 2, bottom of page 21, suggest adding a definition of this term, as it appears to be a concept created in Europe but without an analog in some parts of the world. See https://www.thomsonreuters.com/en-us/posts/investigation-fraud-and-risk/sec-double-materiality-climate/
Ceres	United States	This section ably positions scenario analysis as an insightful tool for evaluating insurers’ potential systemic importance. The emphasis on assessing risk concentrations and spillover effects spotlights the value of cross-sectoral visibility to understand climate risks’ broader interconnectivity. While avoiding explicit policy advice, highlighting possible protection gaps demonstrates thoughtful consideration of consumer impacts alongside financial stability risks. Guidance around coordination complexities also shows awareness of practical constraints across regulatory mandates and national borders that could hamper effective oversight. However, specifics on methodologies to assess distributional impacts may be beneficial. Concrete suggestions for international coordination deserve more elaboration given global risk factors affecting internationally active insurance groups. Overall, this section aligns firmly with the IAIS’ mission of promoting fair, safe, stable insurance markets amidst climate uncertainty.

The Sunrise Project, Financial Regulation and Policy Program	European Union	Paragraph 36 notes that ICP 24.3 requires supervisors to assess the potential systemic importance of the insurance sector as a whole. Given the role of insurance and the systemic risks of protection gaps, supervisors cannot meet the requirements of ICP 24.3 if scenario analysis is limited to insurers that are individually systemically important or that are internationally active. The scope of scenario analysis exercises must be broader to fully consider the systemic risk of the insurance sector as a whole. Paragraph 38 contemplates a more limited scope of scenario analysis, stating that “the focus of the scenario analysis can be on the insurance industry as a whole, or on a selection of insurers that are identified based on specific criteria.” It is unclear how supervisors can satisfy the ICP 24.3 requirement without considering the insurance industry as a whole. This language is inconsistent with pars. 35-36. In addition, scenario analysis should consider other financial sectors as well. Insurer distress and mitigation efforts (e.g., cancelling policies in high-risk areas leaving lender collateral unprotected) may have systemic effects throughout the financial system which then rebound to insurers. We are extremely concerned about protection gaps. The negative impacts will be borne disproportionately by vulnerable populations. Insurers’ underwriting of and investment in fossil fuel activities have contributed to the climate-related risks that are now causing insurers to reduce coverage. In other words, increasing protection gaps are due to insurers’ attempts today to mitigate the risks their previous actions have created. The effects are likely to worsen over time. Ordinary people will be affected most directly and immediately. Protection gaps also contribute to financial instability. We also reiterate our concerns that dynamic balance sheet designs may rely on increasing protection gaps as a de-risking strategy. Such an approach assumes that individual insurers can avoid risks by increasing protection gaps and, therefore, financial risk borne by others. Paragraph 37 states, “Supervisors may include climate risks considerations through climate-related scenario analysis exercises in scope of their quantitative analyses – considering both inward and outward risks – as required under ICP 24.2” (footnote omitted). Supervisors should include climate risk considerations through climate-related scenario analysis and consider both inward and outward risk. The IAIS should make this a clear expectation for supervisors. Similarly, scenario analysis should be used to better understand the risks from loss of affordable coverage options. Of course, these efforts should be undertaken with an understanding of the limitations of scenario analysis. The discussion at paragraphs 39-42 on collaboration among supervisors is welcome but should be strengthened. Authorities in twin peaks models should share information and information sharing across teams within unitary authorities is not just “important” but essential. Insurance supervisors should also ensure they are receiving information on potential spillovers from other sectors to insurance. International coordination, including with respect to scenario analysis, is particularly necessary for the supervision of internationally active insurance groups.
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The Geneva Association	International	- The meaning of systemic risk in this context requires clarification. Traditionally, systemic risk has been understood as a threat to the entire financial system, “the risk of disruption to the flow of financial services that is caused by an impairment of all or parts of the financial system and has the potential to have serious negative consequences for the real economy” . While climate change undeniably poses risks to societies globally, to date, the link between climate change and material insurance-generated systemic risk within the insurance sector is unproven. For example, it is unclear how the impact of climate risk on asset values might create a fire sale risk such as what was experienced during the 2008 financial crisis.- We do, however welcome the clear steer for supervisors to coordinate and collaborate on climate scenario analysis exercises, particularly when used for macro-prudential purposes.
The Geneva Association	International	o The meaning of systemic risk in this context requires clarification. Traditionally, systemic risk has been understood as a threat to the entire financial system, “the risk of disruption to the flow of financial services that is caused by an impairment of all or parts of the financial system and has the potential to have serious negative consequences for the real economy” . While climate change undeniably poses risks to societies globally, to date, the link between climate change and material insurance-generated systemic risk within the insurance sector is unproven. For example, it is unclear how the impact of climate risk on asset values might create a fire sale risk such as what was experienced during the 2008 financial crisis. o We do, however welcome the clear steer for supervisors to coordinate and collaborate on climate scenario analysis exercises, particularly when used for macro-prudential purposes.
Comments on section 4.2 Supervisory response (ICP 24.4)		

General Insurance Association of Japan	Japan	Throughout this AP, but especially in the second sub-paragraph of Paragraph 46 c. "Scenario analysis to inform further scenario exercises", there is an emphasis only on quantification. While we do not deny the importance of quantitative information, we believe that there is also a risk in overconfidence in quantitative information obtained by a particular model. As Paragraph 63 refers to qualitative information, we suggest that the usefulness and complementarity of qualitative information be added in Paragraph 46. Where there are common issues identified across a number of insurers within a jurisdiction, it is useful to share best practices in and out of the jurisdiction regarding individual insurers' issues. As for climate change financial disclosure requirements, to ensure global comparability, it is desirable to comply with IFRS S1 and S2, which were developed to be a global baseline.
National Association of Insurance Commissioners (NAIC)	United States of America	• Para 46: rather than one paragraph, suggest converting a,b,c,d into 4.2.1, 4.2.2, etc and number the paragraphs to be more consistent with the paper's formatting elsewhere and improve readability. • Para 46: a) third para, suggest splitting into two sentences for better readability: Further work may take a macroprudential perspective. For, instance, scenario analysis may highlight climate change risk concentrations across the sector and, therefore, could be a useful early indicator for the need to undertake further thematic supervisory activity. • Para 46: c) first para, in the phrase "volatile and changing nature" consider whether both 'volatile' and "changing" are necessary, as they may be somewhat redundant: ..., show the volatile nature of climate risks ... Second para, suggest using more open wording: Conducting follow-up scenario analysis exercises may allow supervisors to observe
Insurance Europe	Europe	• Para 46: "Finally, further action may be needed to address insurer-specific issues, highlighted by the scenario analysis. This may include weak integration of climate risk into ERM. Here supervisors should consider whether individual remediation plans need to be developed." Individual supervisory measures should be commensurate with the fact that scenario analysis relies on a set of hypothetical assumptions and possible outcomes taken from an infinite range of hypothetical assumptions and possible outcomes.
Public Citizen	United States	The primary objective of climate scenario analysis should be to enhance supervisory practices. While scenario analysis likely underestimates climate risk, results may be used to evaluate capital adequacy to reflect underlying climate risks. A supervisory response to the findings of climate scenario analysis should integrate climate risk into supervisory expectations in a meaningful manner. Additionally, supervisors can utilize scenario analysis for policy implementation by adopting a target-seeking approach.

Finance Watch	EU	If scenario analyses are improved, as outlined in the response to questions 1 & 3, then they should be able to provide a good basis for supervisors to identify vulnerabilities and risk exposures that require further action. In this case the further supervisory and policy work outlined in paragraphs 46.a. and 46.d. is particularly important. Most importantly, policy and supervisory work to address the climate-related risks should proceed in parallel with the advancements in conducting climate scenario analyses. Delaying prudential action will only increase the risk of delayed and disorderly transition, which in itself has been widely recognised by the supervisors as a major source of systemic risk.
Global Federation of Insurance Associations (GFIA)	Global	Throughout this AP, but especially in the 2nd sub-paragraph of Paragraph 46 c. “Scenario analysis to inform further scenario exercises”, there is an emphasis only on quantification. While GFIA does not deny the importance of quantitative information, GFIA believes that there is also a risk in overconfidence in quantitative information obtained by a particular model. As Paragraph 63 refers to qualitative information, GFIA suggests that the usefulness and complementarity of qualitative information be added in Paragraph 46. Where there are common issues identified across a number of insurers within a jurisdiction, it is useful to share best practices in and out of the jurisdiction regarding individual insurers' issues. Section 4.2.b ought to distinguish between disclosures from insurers to supervisors, disclosures from supervisors to other stakeholders, and disclosures from insurers to other stakeholders. Further, it should be recognised that certain types of disclosure, including those related to climate scenario analysis, may affect the assumptions and methods used and ultimately undermine the effectiveness of scenario analysis as a climate risk management tool. Section 4.2.c, on scenario analysis informing further scenario analysis, seemingly assumes that scenario analysis is always a beneficial climate risk assessment tool, and that further scenario analysis can fix the limitations in earlier scenario analysis exercises. This should not be assumed and should be balanced with the recognition that scenario analysis could inform the conclusion that no further scenario analysis is needed (e.g. if immaterial for a certain risk) or that a different risk assessment tool is needed (e.g. if modelling or data challenges make the scenario conclusion unusable).
International Actuarial Association (IAA)	International	In para 46.a., discussion of “setting out preventive and corrective measures”, such work is a function of the time horizon. Assuming too long a time horizon in conjunction with static assumptions may result in inefficient measures, as such an approach may overstate risks to an individual insurer's solvency given likely management responses to a changing environment.

Ceres	United States	The range of micro and macroprudential supervisory actions that can be informed by climate scenario analysis outcomes with guidance on possible follow-up work across individual remediation plans, thematic reviews, updated regulatory disclosures, incremental future scenario exercise, and even policy responses as discussed in this section covers admirable breadth. Emphasizing transparency and disclosure provides constructive market discipline, fostering wider climate risk awareness beyond direct supervisor intervention. This guidance may also benefit from more specifics on disclosure best practices to tangibly demonstrate accountability. We find the section noting that analyses could indicate future capital and liquidity inadequacies shows thoughtful prudence regarding possible solvency strains. Highlighting crisis preparedness where significant concerns emerge exhibits apt risk-based proportionality. That said, more concrete examples of identified sectoral risk concentrations and interconnected exposures would offer useful illustrations of circumstances potentially warranting robust supervisory response. Overall, this section strongly aligns potential analysis outcomes with plausible actions across regulatory dimensions to promote sage, stable markets.
E3G	United States	Section 4.2 Supervisory response (ICP 24.4) We generally concur with the recommendations contained in paragraphs 46, with the following observations: We urge the IAIS to prioritize efforts for the implementation of ISSB standards at national levels. Alignment with the ISSB is the best method for ensuring consistent and comparable disclosures vital to facilitating insurers' ability to assess, manage, and mitigate climate related financial risks and opportunities. Insurers should work proactively with their supervisors to support ISSB implementation, and the IAIS should lead efforts for ISSB implementation across globe. The insurance sector should play a front-line role to mandate and use transition plans to enable insurers and supervisors to better manage risks posed by climate change. The final application paper should clarify that the IAIS expects supervisors to take appropriate actions in response to issues identified through scenario analysis, not, as paragraph 46 is drafted, merely list options that supervisors "could" take.
The Sunrise Project, Financial Regulation and Policy Program	European Union	The final application paper should clarify that the IAIS expects supervisors to take appropriate actions in response to issues identified through scenario analysis, not, as paragraph 46 is drafted, merely list options that supervisors "could" take. This discussion only briefly mentions the potential need for new policy tools. Mere use of scenario analysis will not address climate-related financial risks unless it is accompanied by necessary policy responses. Supervisors should use all existing authorities to address climate-related financial risks and identify needs for new authority. Moreover, supervisors should support broader policy reforms aimed at averting climate risks generally, financial-related or otherwise.

The Geneva Association	International	Section 4.2's recommendation for supervisors to consider a range of supervisory responses based on scenario analysis outcomes is premature. It is vital for supervisors to first digest the outcomes of insurers climate scenario analysis before determining the need for further action. For example, paragraph 46c's recommendation to use scenario analysis outcomes to inform further scenario analysis invites supervisors to undertake repeated exercises. Given the high operational burdens associated with the exercise, a more reflective approach should be taken, including an assessment of the efficacy of the exercise itself to inform concrete actions.
The Geneva Association	International	o Section 4.2's recommendation for supervisors to consider a range of supervisory responses based on scenario analysis outcomes is premature. It is vital for supervisors to first digest the outcomes of insurers climate scenario analysis before determining the need for further action. For example, paragraph 46c's recommendation to use scenario analysis outcomes to inform further scenario analysis invites supervisors to undertake repeated exercises. Given the high operational burdens associated with the exercise, a more reflective approach should be taken, including an assessment of the efficacy of the exercise itself to inform concrete actions.
Comments on section 4.3 Transparency (ICP 24.5)		
General Insurance Association of Japan	Japan	While disclosing the results of scenario analysis is useful for the purpose of increasing transparency, in terms of disclosures, there are issues such as the uncertainty inherent in scenario analysis and the limited data available. In addition, consistency among insurers may be compromised if insurers use different data sets or different models, or if scenario analysis involves management decisions. Therefore, a cautious approach is required regarding disclosures. In order to ensure scenario analysis that contributes to meaningful disclosures, what the IAIS's AP deals with in terms of scenario development and risk assessment should be limited to what IAIGs are effectively required to do. Furthermore, as it is important to strike a balance between "global comparability" and "region-specific factors", measures such as the standardization of approaches and use of common models at the jurisdictional level should also be considered to ensure consistency and comparability of measurement results among insurers within each jurisdiction. With regard to the best practices referred to in Paragraph 51, it has not yet been determined what practices are considered best; best practices vary depending on the purpose. While we believe that sharing examples is beneficial in itself, it may have the adverse effect of undermining diversity in underwriting behavior if the actions of insurance companies are standardized into a particular set of best practices.

Principles for Responsible Investment	United Kingdom	The PRI supports the emphasis on the importance of transparency regarding climate scenario models. We recommend that, in addition to promoting transparency around quantitative assumptions and data sources, it is important to clarify three key conceptual issues. One, whether a given scenario incorporates transition risk, physical risk, or both; two, the probability levels assigned to model outcomes; and three, the extent to which a scenario extrapolates from current conditions, and assumes dramatic future changes such as new technology development, or begins from a desired temperature outcome and works backward to model a required trajectory. Currently, a wide range of scenarios is in use that differ in these respects and whose outcomes are therefore not directly comparable. To ensure wide public and industry appreciation of the meaning and value of scenarios, supervisors must ensure that these issues are communicated and understood.
National Association of Insurance Commissioners (NAIC)	United States of America	• Para 50: the penultimate bullet is missing its bullet. It seems the sentence after the bullet list should be a separate paragraph as it does not follow from or seem related to the rest of the paragraph. - Quantitative assumptions and caveats for the scenarios themselves; - Soundness of the insurance sector under different scenarios and time horizons (eg solvency impacts);
Insurance Europe	Europe	• Para 48: On publication of the results, it is not clear what level of aggregation is sought. Individual disclosure, in particular of any modelled solvency impacts, should be completely excluded given the level of uncertainty surrounding the scenario design, the extensive assumptions that need to be made and the results. This exclusion should be clearly specified in the Application Paper.
American Property Casualty Insurance Association	United States	Any public disclosure of the results of scenario analysis should be on an aggregate basis only, so that confidentiality is maintained and no insurer's individual results are published. Scenario analysis is not reliable enough for disclosure of any individual company's results. In addition, inappropriate public disclosure is likely to create litigation risk, rather than help to mitigate it. We also caution that, depending upon the type of scenario applied, aggregation of results must be done carefully (as one example, summing up the 1/100-year PMLs of different insurers with different exposures may not be appropriate).
Public Citizen	United States	Scenario analysis also plays a crucial role in communicating the importance of taking action to mitigate climate-related financial risks to fulfill supervisors' core mandates. Scenario analysis allows financial supervisors to engage with intergovernmental bodies, international organizations, and the public to better understand their mandate to mitigate climate-related financial risk, and its impact on financial stability. Transparency of the results of scenario analyses is important for communicating to the public the risks of climate change to financial stability. Scenario analysis may also underestimate climate risk; for this reason, supervisors should be transparent about the limitations of the exercises to avoid contributing to inaction or a false sense of security.

Finance Watch	EU	Transparency of scenario analyses is an important part of ensuring that the exercises develop and improve. It brings trust and credibility to both supervisors and the industry. It allows more room for the robustness of the exercises to be tested and benefit from the collective intelligence of a wider range of stakeholders. The guidance outlined in this section is useful and comprehensive.
Global Federation of Insurance Associations (GFIA)	Global	While disclosing the results of scenario analysis is useful for the purpose of increasing transparency, in terms of disclosures, there are issues such as the uncertainty inherent in scenario analysis and the limited data available. In addition, consistency among insurers may be compromised if insurers use different data sets or different models, or if scenario analysis involves management decisions. Confidentiality of information, such as company information that could represent trade secrets or board decisions, should be considered when discussing transparency. Therefore, a cautious approach is required regarding disclosures. In order to ensure scenario analysis that contributes to meaningful disclosures, what the IAIS's AP deals within terms of scenario development and risk assessment should be limited to what IAIGs are effectively required to do. Furthermore, while it is necessary to ensure a certain degree of consistency and comparability of measurement results among insurers within each jurisdiction, each firm should also be free to develop their own according to their exposures, risk profiles. With regard to the best practices referred to in Paragraph 51, it has not yet been determined what practices are considered best; best practices vary depending on the purpose. While GFIA believes that sharing examples is beneficial in itself, it may have the adverse effect of undermining diversity in underwriting behaviour if the actions of insurance companies are standardised into a particular set of best practices.
International Actuarial Association (IAA)	International	The IAA believes that there should be some mention in this discussion with regard to protection of confidential and/or proprietary information for individual companies. Some scenario analysis for property insurers will entail understanding their underwriting guidelines and risk tolerance, which may include confidential and/or proprietary information.

Ceres	United States	Ceres strongly supports the spotlight on transparency as pivotal for spurring climate risk awareness and accountability across the insurance industry. Detailing quantitative and qualitative information that could be publicly shared provides a strong starting point although this section may benefit from more assertive language emphasizing disclosure requirements rather than just recommendations. Additional specifics on public reporting best practices could offer more tangibility for both supervisors and insurers. While qualitative considerations are noted, more granular examples of key quantitative metrics that could indicate emerging vulnerabilities may also prove useful- for example, highlighted solvency strain thresholds warranting attention. That said, the guidance around communicating limitations and uncertainties alongside results shows prudence in avoiding assumptions of excessive confidence. Sharing lessons learned as industry capabilities mature demonstrates awareness of disclosure as an iterative process.
E3G	United States	Section 4.3 Transparency (ICP 24.5) We generally concur with the recommendations contained in paragraphs 48-51, making the following observations: Supervisors should demand full transparency from insurers with respect to scenario analysis. Insurers must disclose which models and implicit assumptions underpin scenarios, the outcome of worst-case scenarios, and which scenario results have been used to inform business decisions that affect either side of an insurer's balance sheet. Supervisors also must ensure that insurers have appropriate expertise to conduct scenario analysis exercises, evaluate the results, and identify responses. See also responses above on transition plans and ISSB implementation. The final application paper should provide guidance to supervisors on the development of human resources and skills to responsibly assess an insurer's use of scenario analysis in its business and risk strategy decision-making process.

The Sunrise Project, Financial Regulation and Policy Program	European Union	Transparency of results is critical, but so is transparency of the scenario analysis limitations. For example, the draft application paper discusses the importance of modeling tipping points, but these are generally excluded from current scenario models. Publication of results without such critical context would be misleading. According to Baer et al., “many financial institutions lack the expertise to fully understand the modeling choices and assumptions underpinning these scenarios. Together this may lead to a misuse of scenarios and potentially a systematic underestimation of the risk associated with the transition. It may also lead firms to take insufficient action to manage their risks caused either by the uncertainties or a false perception of the risks.” [1] Supervisors therefore must demand full transparency from insurers with regard to scenario analysis. In particular, insurers must disclose which models and implicit assumptions underpin applied scenarios, the outcome of worst case scenarios, and which results have been used to inform business decisions that affect either side of an insurer's balance sheet. Supervisors also must ensure that insurers have appropriate expertise to conduct scenario analysis exercises, evaluate the results, and identify responses. To be able to assess whether hidden systemic risk is building up as a result of misuse of scenarios leading to overconfident business decisions, supervisors need to have sufficient well-trained staff. The final application paper should provide guidance to supervisors on the development of human resources and skills to responsibly assess an insurer's use of scenario analysis in its business and risk strategy decision-making process. There is not only a significant risk that insurers will misuse scenario analysis. There is also a significant risk that they will do so and that supervisors will not see it and intervene, even when the data is available. More generally, supervisors risk losing credibility if they demand disclosure but are unable to digest and act on the data that is disclosed. If, as a consequence, systemic risk materialises and leads to market corrections that require government intervention, this will further undermine public confidence in the market and financial institutions, as well as the institutions that are supposed to regulate and supervise them.-----“[1] See Baer et al. (2023). All scenarios are wrong, but some are useful”—Toward a framework for assessing and using current climate risk scenarios within financial decisions. URL: https://www.frontiersin.org/articles/10.3389/fclim.2023.1146402/full
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Comments on section 5 Scenario analysis to inform assessment of insurers' risk management and governance (ICP 16)

Public Citizen	United States	Insurers are endogenous to climate scenarios as they contribute to the risk they face through underwriting and investing in fossil fuels. Scenario analysis should treat insurers' actions that are not aligned with net-zero transition plans as directly contributing to climate risk to the financial system and the broader economy. Scenarios used should reflect the investment and underwriting policies of insurers that contribute to climate risk. In addition, the board of directors should align strategy and risk appetite with the results of scenario analysis.
Finance Watch	EU	Please refer to the responses to questions 13 - 19.
Ceres	United States	This section pragmatically outlines how climate scenario analyses should permeate key components of insurers' enterprise risk management and oversight. Guidance on utilizing exercises to evaluate risk appetites, investment policies, underwriting practices, and board accountability covers admirable breadth. Spotlighting scenario analysis as a vital input for Own Risk and Solvency Assessment (ORSAs) processes demonstrates perceptive alignment with existing prudential safeguards. We recommend more specifications on quantitative model expectations as this may add tangibility to realize that integration. Noting analyses could indicate future solvency strains does show careful consideration regarding possible capital inadequacies and relating possible findings to risk appetite thresholds and strategic planning exhibits sensible risk-based thinking. However, more granular examples of risk transmission channels between assets and liabilities may better highlight the importance of identifying interdependencies. Additional transparency best practices could reinforce accountability aims. Overall, situating exercises across governance dimensions firmly embeds climate risk management into ongoing supervision. This helps promote the resilience so vital as exposures intensify amidst escalating uncertainty in years ahead.
E3G	United States	Section 5.1 ERM framework review (ICP 16.16) We generally support the recommendations in paragraphs 54-57. Scenario analysis should consider the micro- and macroprudential effect of investment policies. Insurers are creating risks for other insurers, the financial system, and the broader economy through investment activities that contribute to climate change. This creates the potential for negative feedback-loops. As noted above, transitions plans should be put into place to change the direction of this trajectory. In the meantime, risks from investment policies should be included in scenario analysis exercises, and the outcome of those exercises should be incorporated into investment decisions consistent with a Paris aligned transition plan.

The Sunrise Project, Financial Regulation and Policy Program	European Union	n/a
The Geneva Association	International	Although the paper acknowledges the early-stage status of climate scenario analysis and some of the limitations of the tool, most notably in paragraph 34d, it gives insufficient attention to these limitations throughout the paper. Instead, the paper promotes a variety of uses for scenario analysis, including investment management, risk assessment, capital management, pricing, business strategy, and macroprudential analysis (by supervisors). The IAIS also provides descriptive indications on how firms have to incorporate the outcomes of climate scenario analysis in their governance, indicating that such assessments should provide an adequate basis for the assessment of overall solvency needs or to inform concrete management actions based on adverse scenarios. The suggested expansive use of a tool that has structural limitations creates a fundamental tension within the paper.
The Geneva Association	International	o Although the paper acknowledges the early-stage status of climate scenario analysis and some of the limitations of the tool, most notably in paragraph 34d, it gives insufficient attention to these limitations throughout the paper. Instead, the paper promotes a variety of uses for scenario analysis, including investment management, risk assessment, capital management, pricing, business strategy, and macroprudential analysis (by supervisors). The IAIS also provides descriptive indications on how firms have to incorporate the outcomes of climate scenario analysis in their governance, indicating that such assessments should provide an adequate basis for the assessment of overall solvency needs or to inform concrete management actions based on adverse scenarios. The suggested expansive use of a tool that has structural limitations creates a fundamental tension within the paper.
Comments on section 5.1 ERM framework review (ICP 16.16)		
General Insurance Association of Japan	Japan	Although climate risk is an important risk to consider in the ORSA and ERM, how and to what extent scenario analysis exercises are reflected in the ORSA and ERM should be carefully considered in view of the complexity and uncertainty inherent in these exercises and the workload involved. In addition, since time horizons for climate risk scenario analysis is very different from the ones for usual ORSA and ERM, it will be necessary to consider whether existing frameworks can handle this issue.

National Association of Insurance Commissioners (NAIC)	United States of America	• Para 53: The nature and materiality of relevant risks ... • Para 54: last sentence, it seems some words are missing – suggest: As such, the supervisor should assess whether the scenario analysis and modelling approaches used are commensurate with the insurer’s vulnerability to climate risks, based on the insurer’s risk profile. • Para 55: the second sentence seems somewhat overstated – suggest: The outcome of the scenario analysis, shall define the resilience of the insurer’s business strategy, providing insights into material exposures and business risks as well as testing the robustness and adequacy of its solvency position. These insights should be taken into account when defining both short- and long-term strategy and determining the most appropriate management actions to properly react to occurring risks (eg a limit breach). may help define the resilience of the business strategy of the insurer... • Para 56: suggest clarifying what supervisors may take a proportionate approach to and strengthen to should given what ICP 16.16.5 says: In determining any requirements for insurers’ ERM frameworks, supervisors should consider taking a proportionate approach... However, using only size as a criterion for inclusion will not capture smaller entities that may be materially exposed to climate change risks; or any potential change in climate risk concentrations of smaller entities. For this reason, a broader criterion for the scope might be more appropriate. • Para 57: “vs” should be spelled out as “versus”
Insurance Europe	Europe	• Para 54: Agree that climate risk should be seen as one risk driver rather than a separate risk category. However, some statements in the paper are difficult to consolidate with this view, e.g. para 54, where the IAIS states that climate risks are a key risk driver that should be considered in the own risk and solvency assessment (ORSA). The IAIS should clarify how this view goes together with the traditional risk categories, that could be influenced from climate change, e.g. NatCat risk, Credit Risk, etc, assuming they should be considered within these categories. • The expectations regarding use of scenario analysis for the underwriting, investment and risks policies are too prescriptive and should be commensurate to the meaningfulness and decision usefulness of the scenario design and the results. E.g. paragraphs 60, 69, 71, 74, 75.
Finance Watch	EU	If scenario analyses are improved and combined with quantification of fossil fuel exposures, as outlined in the response to questions 1 & 3, then they could become an important part of the ERM framework review. It will be important to look into how scenario analysis can be combined with the work done by insurers to prepare and deliver transition plans, to provide a comprehensive assessment of climate risk management in the ORSA. We support the view on the proportionality expressed in the application paper, whereby proportionality should not be limited to size considerations but should be based on the risk profile considerations.

Global Federation of Insurance Associations (GFIA)	Global	Although climate risk is an important risk to consider in the ORSA and enterprise risk management (ERM), how and to what extent scenario analysis exercises are reflected in the ORSA and ERM should be carefully considered in view of the complexity and uncertainty inherent in these exercises and the workload involved. In addition, since time horizons for climate risk scenario analysis are very different from the ones for usual ORSA and ERM, it will be necessary to consider whether existing frameworks can handle this issue. Firms should be allowed to conduct the ORSA assessment of climate-related risks in a way that the outcome is most meaningful for them to understand the risks they face. The extent to which firms perform long- or short-term assessments or use quantitative and/or qualitative methods should be a result of a materiality assessment for the business under consideration as well as the nature of the risks. Where firms' assessment goes beyond the usual 3-5 years business planning time horizon for the ORSA, a more qualitative and contextual nature of the long-term analysis should be acknowledged, as well as the inherent uncertainties and potential limitations due to data quality.
International Actuarial Association (IAA)	International	In para 65, the wording “may wish to consider taking a proportionate approach” seems to be inconsistent with prior IAIS publications that assume such an approach. Is the wording “may wish to consider” too weak in this case? In the same paragraph, the phrase “using only size as a criteria for inclusion” seems to imply that size by itself is always a reasonable criterium. At a minimum we would recommend combining the business model in such a selection process, as not all large insurers will have exposure to the same risks. (E.g., large pet insurers.) In paragraph 57, the phrase “having separate requirements for life vs property and casualty insurers” may result in groupings that are overly broad, as there may be a desire to focus on certain product lines or geographies

Ceres	United States	This section positions scenario analysis as vital for evaluating the adequacy of insurers' enterprise risk management (ERM) integration and capital resilience. Relating possible climate risk exposures revealed back to core prudential safeguards like ORSAs demonstrates advanced integration, and guidance allowing flexibility based on entity risk profiles exhibits sensible scope for bespoke customization according to vulnerability. Conversely, this flexible guidance risks uneven adoption absent accessible methodological resources and clear supervisory monitoring mechanisms. More assertive expectations could better drive market-wide transparency and accountability to accelerate progress. Cognizance of possible future solvency strains and growth in small insurer climate risk concentrations shows forethought of market evolution pathways. Rapid phase-in of heightened expectations reinforces thoughtful risk-based escalations as capabilities mature across industry participants. We believe the section could have been augmented with more tangibility on remediation for identified deficiencies and associated supervisory reporting expectations such as robust phase-in timelines and reporting standardization. We urge significant enhancement to require aggressive phase-in matching climatic realities, set consistent reporting standards, and track continual advancement. Without assertive oversight, severe threats may manifest before methodological aspirations realize impact.
The Sunrise Project, Financial Regulation and Policy Program	European Union	The language in paragraph 55 stating that scenario analysis outcomes “shall define the resilience of the business strategy of the insurer” reflects an overly optimistic assessment of the value of scenario analysis results. Scenario analysis is a critical tool, but it has well-known limitations, which the draft application paper discusses. Positive scenario analysis outcomes must not automatically lead to positive assessments of resiliency. Instead, scenario analysis results should inform assessments of business strategy resiliency, with careful consideration of shortcomings of the exercise and in conjunction with other supervisory and macroprudential considerations. While ORSA requirements may vary by entity type and size, supervisors should require consideration of climate risks, including the use of scenario analysis, based on the climate risks an insurer faces. Relying solely on the size or type of insurer may lead to insufficient attention to climate-related financial risks that create micro- or macroprudential stress.

The Geneva Association	International	- Although the paper acknowledges the evolving-stage status of climate scenario analysis and some of the limitations of the tool, most notably in paragraph 34d, it gives insufficient attention to these limitations throughout the paper. Instead, the paper promotes a variety of uses for scenario analysis, including investment management and underwriting processes (incl. pricing), risk management (incl. risk appetite statements), capital/ solvency management, business strategy, and macroprudential analysis (by supervisors). The IAIS also provides descriptive indications on how firms have to incorporate the outcomes of climate scenario analysis in their governance, indicating that such assessments should provide an adequate basis for the assessment of overall solvency needs or to inform concrete management actions based on adverse scenarios (paragraph 78). The suggested expansive use of a tool that has structural limitations creates a fundamental tension within the paper.- The Geneva Association view is that company specific forward looking climate risk assessments should be aligned with the effective duration of the underlying insurance liabilities to inform concrete business decisions today. But the impact of climate change is for some parts slow moving while weather-related exposures can be flexibly managed and steered through limited duration of re/insurance contracts (typically one-year contracts for property insurance) as well as active portfolio steering. For the same reasons, such forward-looking analysis is not adequate for conclusive risk management decisions, including prudential requirements, e.g., capital requirements, which are also set for a short time horizon. - While some limitations may be addressed over time such as the lack of reliable data, the uncertainty regarding projections of frequency and severity of insured perils and the uncertainty around climate adaptation measures taken. Other limitations, however, are more endemic, such as the uncertainty of any projection spanning multiple decades into the future. Still, such challenges limit the suitability of such assessments to inform concrete business decisions such as pricing, underwriting, the ERM framework, ORSA or investment decisions or capital/ solvency requirements. We believe the AP is grounded in an assumption of an unrealistic degree of precision in scenario analysis and urge the IAIS not to promote or overutilize tools for purposes for which they are not necessarily well suited. Areas where we believe the IAIS has gone too far, include the following:§ Informing business strategy (paragraphs 13, 17, 27, 34, 65, 77)§ Informing risk appetite (paragraphs 74, 75, 77)§ Assessing and managing capital (paragraphs 27, 34, 55, 78)§ Assessing and managing investment/ transition risks (paragraphs 13, 26, 27, 58)§ Assessing and managing underwriting risks (paragraphs 14, 26, 59, 60)§ Identifying climate-change related risk correlations (paragraph 27)§ Assessing financial stability implications (paragraphs 25, 26, 35-44)- It is in our view important to address the discrepancy between the paper's acknowledgement of the unreliability of scenario analysis and the proposed broad uses of the tool. It may therefore be more appropriate to position the application paper as aspirational, emphasizing the potential future applications of scenario analysis, while acknowledging its limitations in terms of supervisory and risk management effectiveness. Concrete paragraphs that merit reconsideration in line with the aforementioned limitations are: 27 (the use of scenario analysis for investment portfolio and capital position); 34 (conducting scenario analyses to support pricing and capital positions); 55 (use of scenario analysis for testing the robustness and adequacy of solvency positions and defining strategy); 60 (integrating the results of climate scenario analysis into underwriting processes); 74 (use of scenario analysis to assess the
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		adequacy and appropriateness of the existing risk appetite statement); 75 (SA as a tool to identify and assess the robustness of their risk appetite statement); 78 (providing Board with scenarios that provide an adequate basis for the assessment of overall solvency needs).
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The Geneva Association	International	o Although the paper acknowledges the evolving-stage status of climate scenario analysis and some of the limitations of the tool, most notably in paragraph 34d, it gives insufficient attention to these limitations throughout the paper. Instead, the paper promotes a variety of uses for scenario analysis, including investment management and underwriting processes (incl. pricing), risk management (incl. risk appetite statements), capital/ solvency management, business strategy, and macroprudential analysis (by supervisors). The IAIS also provides descriptive indications on how firms have to incorporate the outcomes of climate scenario analysis in their governance, indicating that such assessments should provide an adequate basis for the assessment of overall solvency needs or to inform concrete management actions based on adverse scenarios (paragraph 78). The suggested expansive use of a tool that has structural limitations creates a fundamental tension within the paper. o The Geneva Association view is that company specific forward looking climate risk assessments should be aligned with the effective duration of the underlying insurance liabilities to inform concrete business decisions today. But the impact of climate change is for some parts slow moving while weather-related exposures can be flexibly managed and steered through limited duration of re/insurance contracts (typically one-year contracts for property insurance) as well as active portfolio steering. For the same reasons, such forward-looking analysis is not adequate for conclusive risk management decisions, including prudential requirements, e.g., capital requirements, which are also set for a short time horizon. o While some limitations may be addressed over time such as the lack of reliable data, the uncertainty regarding projections of frequency and severity of insured perils and the uncertainty around climate adaptation measures taken. Other limitations, however, are more endemic, such as the uncertainty of any projection spanning multiple decades into the future. Still, such challenges limit the suitability of such assessments to inform concrete business decisions such as pricing, underwriting, the ERM framework, ORSA or investment decisions or capital/ solvency requirements. We believe the AP is grounded in an assumption of an unrealistic degree of precision in scenario analysis and urge the IAIS not to promote or overutilize tools for purposes for which they are not necessarily well suited. Areas where we believe the IAIS has gone too far, include the following: § Informing business strategy (paragraphs 13, 17, 27, 34, 65, 77) § Informing risk appetite (paragraphs 74, 75, 77) § Assessing and managing capital (paragraphs 27, 34, 55, 78) § Assessing and managing investment/ transition risks (paragraphs 13, 26, 27, 58) § Assessing and managing underwriting risks (paragraphs 14, 26, 59, 60) § Identifying climate-change related risk correlations (paragraph 27) § Assessing financial stability implications (paragraphs 25, 26, 35-44) o It is in our view important to address the discrepancy between the paper's acknowledgement of the unreliability of scenario analysis and the proposed broad uses of the tool. It may therefore be more appropriate to position the application paper as aspirational, emphasizing the potential future applications of scenario analysis, while acknowledging its limitations in terms of supervisory and risk management effectiveness. Concrete paragraphs that merit reconsideration in line with the aforementioned limitations are: 27 (the use of scenario analysis for investment portfolio and capital position); 34 (conducting scenario analyses to support pricing and capital positions); 55 (use of scenario analysis for testing the robustness and adequacy of solvency positions and defining strategy); 60 (integrating the results of climate scenario analysis into underwriting processes); 74 (use of scenario analysis to assess the
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		adequacy and appropriateness of the existing risk appetite statement); 75 (SA as a tool to identify and assess the robustness of their risk appetite statement); 78 (providing Board with scenarios that provide an adequate basis for the assessment of overall solvency needs).
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		The PRI strongly agrees that investment policies must incorporate an awareness of climate risk. We support the recommendations that insurers engage with investee companies to understand the steps they are taking to reduce their exposure to climate risk, and that insurers should use proxy voting and sector collaboration to positively shape investees' transition to more sustainable business practices. Across the financial sector, asset owners and asset managers of all sizes and types are taking these steps in an effort to protect both their own portfolios and their ability to continue to invest profitably in perpetuity. There is a widespread understanding that because the systemic nature of climate risk makes it impossible to insulate a portfolio from climate risk over the long term, engagement aimed at managing risks in the real economy is the best way to protect investor interests.
Principles for Responsible Investment	United Kingdom	
National Association of Insurance Commissioners (NAIC)	United States of America	• Para 58: second sentence, IAIS supporting material does not use “must” – suggest: Where material, these risks should be taken into account regardless of whether the insurer invests directly... • Para 58: for formatting consistency, suggest using bullets rather than a and b. a) ...consider engaging with investee companies (through proxy voting or sector collaboration, as appropriate) to positively influence corporate behaviour. This engagement includes ...
Finance Watch	EU	If scenario analyses are improved as outlined in the response to questions 1 & 3 and combined with work done by insurers on transition planning, then the guidance in this section would be an important improvement to advise on the application of ICP 16.6. In particular and very importantly, paragraph 58.b. of the guidance rightfully emphasises the need to understand “how and when different climate tipping points will impact risks, including capturing the non-linear impacts on credit, market and liquidity risks” in order to derive conclusions about insurers' investment choices. However, at present the scenario analyses are far from being able to model those specifics of climate risks. This is fundamental to interpreting conclusions of scenario analyses, which also underscores the importance of defining timely risk management measures. The points raised in this section under paragraph 58.a stand as important guidance in general and not just as areas that can be improved by scenario analysis. This exercise can also be informed through the work being done by insurers preparing transition plans. One of the key issues will be to capture transition risk exposures where investments currently have solid credit ratings and a strong history of performance, but that have a high risk of being stranded. It is important that climate scenario analyses adopt time horizons congruent with international climate commitments to adequately identify stranding risks and their impacts on insurers' balance sheets.

Global Federation of Insurance Associations (GFIA)	Global	GFIA recommends better contextualising paragraph 58.a through the lens of materiality and how climate scenario analysis may be useful for that specific purpose. For instance, the statement “Insurers should also consider engaging with investee companies (through proxy voting or sector collaboration as appropriate) to help positively shape the corporate behaviour of investee companies” is not closely related to climate scenario analysis and should be removed or revised. If revised, GFIA recommends the following: “Insurers may also consider engaging with investee companies to understand their transition plans which may inform insurer climate scenario analysis.”
Ceres	United States	This section rightly highlights the complex, nonlinear impacts climate change could have on insurer investment risks and associated enterprise risk management response. Guidance on utilizing scenario analyses to surface knowledge gaps, hidden correlations, and climate tipping points demonstrates advanced thinking, while suggestions for insurers to engage investees on managed transitions and sustainability efforts provide constructive market leadership during a volatile period. Ceres recommends more specifics on substantive mitigating actions that analyses could prompt across credit, liquidity, and market risks. Relating possible findings to risk appetite thresholds, asset allocation reviews, and limits frameworks helps embed climate resilience into existing governance, while spotlighting stranded assets vulnerabilities shows prudence regarding repricing and devaluation dangers. Additional specifics on investment policy disclosure expectations may further reinforce constructive transparency aims. Overall, thoughtful positioning analyses to reveal investment risks and inform effective stewardship is extremely valuable as uncertainty mounts.
The Sunrise Project, Financial Regulation and Policy Program	European Union	Scenario analysis should consider the micro- and macroprudential effect of investment policies. Through investment activities that contribute to climate change, insurers are creating risks for other insurers, the rest of the financial system, and the broader economy. These feedback-loops and the resulting risks should be included in scenario analysis exercises, and the outcome of those exercises should be incorporated into investment decisions. Scenario analysis-informed investment decisions should at all time be consistent with a strong, Paris aligned transition plan.
The Geneva Association	International	Paragraph 58's suggestion for insurers to influence corporate behaviour of investee companies does not seem relevant to climate scenario analysis. Authorities should avoid placing the burden for all industries to transition to a low carbon economy on the financial sector, as the speed and substance of the transition ultimately depends on policy decisions made by governments.
The Geneva Association	International	o Paragraph 58's suggestion for insurers to influence corporate behaviour of investee companies does not seem relevant to climate scenario analysis. Authorities should avoid placing the burden for all industries to transition to a low carbon economy on the financial sector, as the speed and substance of the transition ultimately depends on policy decisions made by governments.

Finance Watch	EU	As outlined in the response to question 4 an additional risk of economic disruption should be considered in addition to physical, transition and liability risks. If scenario analyses are improved as outlined in the responses to questions 1 and 3 then the guidance their use here is important. Paragraph 60 and 61 highlight how results of realistic scenario analyses should be used to ensure underwriting processes account for climate risk.
Global Federation of Insurance Associations (GFIA)	Global	Property/casualty insurance is primarily an historical, experience-based model, with risks measured on experience, and profitability based predominantly on appropriate contract pricing. To place additional emphasis on climate change versus all other risk factors may create new problems – actuarial science requires being able to price according to the appropriate weight for the applicable factors for the risk (taking into account many considerations, including but not limited to the line of business, nature of the risk, and the duration of the policy).
Ceres	United States	We support the emphasis on climate risks driving review of underwriting strategies across both existing and new business areas. Spotlighting higher risk sectors, assets, and regions demonstrates commendable attention to exposure concentrations. The guidance on extracting actionable insights for underwriting protocols shows thoughtful connectivity between analysis as an academic exercise and tangible risk management impacts. More specifics on substantive integration practices may be valuable. While avoiding overt standard-setting, relating possible second and third order climate impacts to product and business model resilience promotes admirable forward thinking. Considerations of market-wide changes, such as shifts in car ownership models, demonstrates awareness of complex systemic dynamics. However, additional transparency expectations may further reinforce constructive accountability aims as underwriting practices evolve. But, overall, positioning analyses to clearly inform underwriting policies exhibits prudence given climate change's overarching business model implications amidst rising physical risks.
The Sunrise Project, Financial Regulation and Policy Program	European Union	Scenario analysis should consider the micro- and macroprudential effect of underwriting policies. By underwriting activities that contribute to climate change, insurers are creating risks for other insurers, the rest of the financial system, and the broader economy. These risks should be included in scenario analysis exercises, and the results of those exercises should be incorporated into underwriting decisions. Scenario analysis-informed underwriting decisions should at all times be consistent with a strong, Paris aligned transition plan.
The Geneva Association	International	Although the paper acknowledges the early-stage status of climate scenario analysis and some of the limitations of the tool, most notably in paragraph 34d, it gives insufficient attention to these limitations throughout the paper. Instead, the paper promotes a variety of uses for scenario analysis, including the integration of scenario analysis into underwriting processes. The suggested expansive use of a tool that has structural limitations creates a fundamental tension within the AP.

The Geneva Association	International	o Although the paper acknowledges the early-stage status of climate scenario analysis and some of the limitations of the tool, most notably in paragraph 34d, it gives insufficient attention to these limitations throughout the paper. Instead, the paper promotes a variety of uses for scenario analysis, including the integration of scenario analysis into underwriting processes. The suggested expansive use of a tool that has structural limitations creates a fundamental tension within the AP.
Comments on section 5.4 Insurer ORSAs (16.12) (16.14)		
General Insurance Association of Japan	Japan	Climate change risks are important to insurers and should be considered in the ORSA. Technical difficulties, such as evaluation with longer time horizons and analysis of more diverse risks (physical risks, transition risks, and litigation risks), are expected in incorporating scenario analysis in the ORSA. These should be fully taken into account. While the 1st bullet of Paragraph 65 states "should...also consider how hotter climates may impact life and health insurance liabilities", it is possible that, for some insurers, the related impact or importance are not significant enough to be included in the ORSA. Therefore, we suggest adding "when material" or changing "should" to "could also consider". Regarding the 3rd bullet in Paragraph 65, as mentioned in Paragraph 15, the likelihood of occurrence and impact of litigation risks vary greatly depending on the legal system of each jurisdiction. In addition, as the analysis would lack feasibility in jurisdictions where there are no past cases, conditions such as "where appropriate" or "where possible" should be added.

National Association of Insurance Commissioners (NAIC)	United States of America	• Para 64: U.S. state insurance regulators agree that climate scenario analysis can be a valuable input to an insurer's ORSA process and expect insurers materially exposed to climate risk to include information on the results of scenario analysis in U.S. ORSA filings. In addition, we agree that it may be appropriate for insurers to extend the time horizon utilized for climate risk assessment to go beyond normal business planning cycles of three to five years, to take account of medium- and longer-term risks. However, we believe that any extension of the ORSA time horizon for climate (or other medium and longer-term risks) should be limited to risk assessment purposes and not for capital adequacy purposes. As such, suggest the following edit to clarify this expectation: Some climate related risks may take longer to fully materialise and, therefore, it would be expected that the ORSA also include appropriate scenarios that cover a more extended time horizon. When assessing the appropriateness of time horizons used by insurers, supervisors should consider the nature and types of business written by the insurer as well as for what the time horizons are used (for example, risk assessment purposes versus capital adequacy purposes). • Para 65: As part of the ORSA, an insurer is required to perform a continuity analysis to assess its ability to manage risks and meet capital requirements under a range of plausible adverse scenarios, with a forward- looking perspective. When material, this analysis should include the identification and assessment of the direct and indirect impacts of climate- related risks. For instance, including as part of the scenario analysis a (reverse) stress testing process. This would enable insurers to assess their resilience to financial losses with respect to climate change. This process should incorporate assessments of physical, transition and liability risks across the different risk categories, for example: - o The assessment...(eg 1-in-100, 1-in-500 or 1-in-1000 year events),... - o The assessment...to avoid any negative reputational impacts... - o Assessments should cover litigation risk... • Para 67: The rationale for immateriality could be included in the documentation that summarises the risks that the insurer considered for incorporation in the ORSA and should be presented concisely.
Insurance Europe	Europe	• Insurance Europe is fully supportive of the IAIS expecting that supervisors and insurers are focusing on material risk only (e.g. para 58, 59, 63, 65, 69, 71). • However, in para 67, the IAIS concludes that climate risks are material for the entire insurance industry and thus have to be included in the ORSA. This seems too prescriptive, the IAIS should allow firms to conduct the ORSA assessment of climate-related risks in a way that the outcome is most meaningful for them to understand the risks they face. The extent to which firms perform long- or short-term assessments or use quantitative and/or qualitative methods should be a result of a materiality assessment for the business under consideration as well as the nature of the risks.

American Property Casualty Insurance Association	United States	In paragraph 65, a 1/1000 year scenario is far too extreme and inexact to provide meaningful information.
Finance Watch	EU	As a first point the section rightly identifies the importance of dealing with more appropriate time horizons. The time horizons of scenarios should extend beyond 2030 and look at the period between 2050 and 2080 (see pages 29 - 30 of the Finance in a hot house world report https://www.finance-watch.org/publication/report-finance-in-a-hot-house-world/). GDP impact of losses arising from climate change is set to accelerate increasing after 2050, when as things stand global warming is set to move to around 2 degrees. As mentioned above in our comment on part 3.2 (scenario design), reverse stress tests should be an important element of climate scenario exercises under ORSA. As outlined in the response to question 4 it is important to consider the risk of severe economic disruption in addition to physical, transition and litigation risks in the ORSA. Additionally as outlined in our response to question 14 there is a need for further work to use work done by insurers on transition planning, along with realistic scenario analyses to capture climate risks. Given the current limitations of the scenario analyses and the underlying economic models, it is important to exercise caution when interpreting conclusions of climate scenario analyses for the capital position and solvency of insurers.

Global Federation of Insurance Associations (GFIA)	Global	For some insurers, climate change risks as well as other important risks should be considered in the ORSA. Technical difficulties, such as evaluation with longer time horizons and analysis of more diverse risks (physical risks, transition risks, and litigation risks), are expected in incorporating scenario analysis in the ORSA. It should be highlighted that life and health insurance (re)insurers and property and casualty (re)insurers have very different exposures to climate-related risks. In particular, the nature, scale and complexity of the underlying physical risks related to climate change are different. These should be fully taken into account and can limit the usefulness of climate scenarios, especially as uncertainty increases with the extension of time horizons. As such, climate scenarios may not necessarily be the best tool for assessing climate risk in light of the solvency-oriented objectives of the ORSA. Further, as climate risk affects other risks that insurers manage and monitor, consideration should be given as to whether climate scenario analysis would be duplicative to the assessments of material risks already included in the ORSA. For instance, if the risk of deterioration in new sales or an increase in lapses is already assessed in the ORSA, assessing how an insurer's climate-related reputation could affect sales and lapses would be costly, duplicative, and ultimately unnecessary (not to mention challenging and assumption-laden). Instead of specific recommendations, a more principles-based approach ought to be reflected in this section. Regarding paragraph 63, GFIA recalls that litigation risks are very hard to assess. Paragraph 65: ■ While the 1st bullet of Paragraph 65 states "should...also consider how hotter climates may impact life and health insurance liabilities", it is possible that, for some insurers, the related impact or importance are not significant enough to be included in the ORSA. Therefore, GFIA suggests adding "when material" or changing "should" "or "could also consider". ■ In addition, a 1–1000-year scenario is far too extreme and inexact to provide meaningful information. ■ Regarding the 3rd bullet in Paragraph 65, as mentioned in Paragraph 15, the likelihood of occurrence and impact of litigation risks vary greatly depending on the legal system of each jurisdiction. In addition, as the analysis would lack feasibility in jurisdictions where there are no past cases, conditions such as "where appropriate" or "where possible" should be added.
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International Actuarial Association (IAA)	International	In para 64 it discusses the time horizon for an insurer's ORSA. The IAA has the following comments on this discussion: · The time horizon should also reflect the speed with which the climate-related exposures can be managed and exited or mitigated. This may be the same as "business planning" in this phrase, but it isn't clear if that was the authors' intent. · As a practical matter, it doesn't make sense to do business planning that extends beyond too many management action cycles. Such time horizons may be meaningful to long term strategic visions, but may not be very actionable for the short term. In para 65, first bullet: · The IAA suggests deleting the reference to 1-1000 year events, as such estimates are not reliable for virtually all models. · The term "liabilities" here is misleading from a non-life perspective, as potential impacts from future health events relates to future claims, and not current liabilities. In addition, where the payout is fast enough, there will never be a "liability" on a published financial report for such claims. The IAA suggests changing the reference to something like "exposure to future claims" and not "liabilities". In para 67, the IAA suggests changing "impact on all insurers" to something like "impact on most insurers", as not all insurers will be materially impacted (e.g., pet insurers, bail bond insurers). Observation. In Box 4 where it discusses EIOPA guidance, there is potentially an incomplete definition of catastrophe modelling. That definition only mentions the modelling of the physical characteristics of the catastrophe but omits mention of the damage module and the module that models the insurer impact. There is an IAA Risk Book chapter that discusses these other modules.
Ceres	United States	This section embeds climate scenario analysis into key internal risk governance processes like ORSAs. Requirements to evaluate exposures across complex, multifaceted risks demonstrate sophisticated risk capture, and guidance to assess resilience across robust, forward-looking adverse scenarios aligned with unique insurer profiles shows advanced integration ambitions. However, heightened expectations may necessitate more supervisor support for data/methodology development proportionate to insurer sophistication. Relating possible solvency strains to continuity analysis and capital planning exhibits prudence. This section may benefit from more specifics on quantitative model usability expectations and associated uncertainty communication. Additionally, timelines tied to the "tragedy of the horizons" frame climate risk as a systemic risk demanding long-term thinking, though phase-in flexibility shows cognizance of incremental improvement across industry participants. Overall, smoothly fusing exercises with internal risk, solvency, and capital safeguards points towards profound risk management dividends should bold adoption occur.
E3G	United States	Section 5.4 Insurer ORSAs (16.12) We make the following observations about paragraphs 62-63: The IAIS should clarify when scenario analysis would be expected as part of ORSAs, acknowledging that their use should take into account limitations identified by the NGFS. The IAIS should provide more clarity about the role that

		reverse stress tests can play to complementary scenario analysis and as an integral part of the risk management toolbox.
The Sunrise Project, Financial Regulation and Policy Program	European Union	Paragraphs 62 and 63 suggest that insurers could use scenario analysis as an input to ORSAs. However, stronger language is warranted. OSRAs must encompass all reasonably foreseeable and relevant material risks, and scenario analysis likely will play a significant role in identifying such risks. The IAIS needs to provide more clarity around when scenario analysis would be expected, while continuing to recognize current limitations. In order to make sure supervisors and insurers reduce the risk of overconfidence bias and false sense of security, IAIS should clarify that RST is a complementary instrument to scenario analysis and an integral part of the risk management toolbox. Paragraph 65's discussion of physical risks should explicitly acknowledge that rare weather events are becoming more common[1], further highlighting the challenges of relying on historical data and the need to include severely adverse scenarios. In addition, the possibility of disorderly transition risks should be directly discussed and considered. Supervisors must carefully scrutinize insurer claims that their climate-related risks are immaterial and, therefore, not included in the ORSA. As paragraph 67 notes, climate-related risks could potentially affect all insurers. Insurer conclusions that climate-related risks are immaterial may reflect a lack of understanding and expertise on the part of the insurer.----- [1] Brenda Ekwurzel, "Rare and Severe Weather Events Are Now More Common Thanks to Climate Change," Union of Concerned Scientists, The Equation (Aug. 24, 2022). URL: https://blog.ucsusa.org/brenda-ekwurzel/rare-and-severe-weather-events-are-now-more-common-thanks-to-climate-change/

The Geneva Association	International	We welcome the suggestion for supervisors and industry to focus on material climate-related risks in their ORSA (see para 63). A few paragraphs later (para 67), however, the IAIS concludes that all climate-related risks are material to the insurance industry and thus "should be considered for inclusion" in their ORSA. The IAIS and supervisors should avoid elevating climate risks above other material risk drivers by pre-concluding that they are material to firms or the insurance sector as a whole. The paper also gives inadequate attention as to how climate change risk relates to traditional risk categories, e.g. NatCat risk, Credit Risk, etc. and how these should be managed. Paragraph 67 should be reworded to provide insurance firms with the flexibility to conduct the ORSA of climate-related financial risks in a way that the outcome is most meaningful for them to understand the risks they and subject to materiality to the firm. The extent to which firms perform long- or short-term assessments or use quantitative and/or qualitative methods should be a result of a materiality assessment for the business under consideration as well as the nature of the risks.
The Geneva Association	International	o We welcome the suggestion for supervisors and industry to focus on material climate-related risks in their ORSA (see para 63). A few paragraphs later (para 67), however, the IAIS concludes that all climate-related risks are material to the insurance industry and thus "should be considered for inclusion" in their ORSA. The IAIS and supervisors should avoid elevating climate risks above other material risk drivers by pre-concluding that they are material to firms or the insurance sector as a whole. The paper also gives inadequate attention as to how climate change risk relates to traditional risk categories, e.g. NatCat risk, Credit Risk, etc. and how these should be managed. Paragraph 67 should be reworded to provide insurance firms with the flexibility to conduct the ORSA of climate-related financial risks in a way that the outcome is most meaningful for them to understand the risks they and subject to materiality to the firm. The extent to which firms perform long- or short-term assessments or use quantitative and/or qualitative methods should be a result of a materiality assessment for the business under consideration as well as the nature of the risks.
Comments on section 5.5 Integrating scenario analysis into risk policies (ICP 16.5, 16.6, 16.7)		
General Insurance Association of Japan	Japan	While it is useful to understand the impact of climate change risk on the interconnectedness of asset management risk and underwriting risk, as well as on assets and liabilities in ALM, scenario analysis is expected to involve complexity and technical difficulties. Therefore, consideration should be given to its feasibility and the workload on insurers. Paragraph 71 refers to investee engagement, restricted lists, and divestment lists as examples of mitigation strategies prompted by scenario analysis. However, it lacks elements of engagement to encourage transition of hard-to-abate sectors. Paragraph 70 also refers to an example of sectoral investment limits, leaving an impression that divestment is encouraged. For this AP to prevent the inducement of ill-considered divestment and to promote awareness of the importance of engagement to encourage the decarbonization of the investee, we suggest making reference to transition finance.

National Association of Insurance Commissioners (NAIC)	United States of America	• Para 72: for clarity, suggest quoting what is ICP 16.5: ICP 16.5 requires “the insurer’s ERM frameworks to include an explicit asset- liability management (ALM) policy that specifies the nature, role and extent of ALM activities and their relationship with product development, pricing functions and investment management”. • Para 72: Scenario analysis could help to identify correlation risks between assets and insurance liabilities that are not apparent For instance, it can reveal risks associated with retail mortgage backed assets in areas subject to significant climate risk , which are held as assets on an insurer’s balance sheet while the insurer underwrites cover for residential property in the same area.
Insurance Europe	Europe	• In some jurisdictions, for instance in Europe, insurers are required to reflect climate-related considerations in their policies.
Finance Watch	EU	If scenario analyses are improved as outlined in the response to questions 1 & 3 and combined with work done by insurers on transition planning, then the guidance in this section would be an important improvement to advise on the application of the ICPs here. Until then the limitations of climate scenario analyses should be prominently acknowledged so that their (until now very benign) conclusions do not prevent timely development of mitigation strategies such as the ones mentioned in the draft -”investee engagement, restricted lists and divestment lists for asset types that have been identified as vulnerable”. This also relates to using the results of climate scenario exercises to make conclusions about insurers’ solvency and liquidity. The point raised on risk correlation and looking into application of ICP 16.5 is particularly important and can also be used to inform insurers work on transition planning.

Global Federation of Insurance Associations (GFIA)	Global	While it is useful to understand the impact of climate change risk on the interconnectedness of asset management risk and underwriting risk, as well as on assets and liabilities in asset liability management (ALM), scenario analysis is expected to involve complexity and technical difficulties. There needs to be a strict focus and is heavily reliant on materiality of such risks to the firm and uncertain assumptions. Therefore, consideration should be given to its feasibility and whether scenario analysis can practically inform investment and ALM policies. Consideration should also be given to the distinctiveness of climate risk relative to other risks when it comes to risk policies. For instance, the correlation of VA minimum guarantees to general account returns, discussed in Box 5, is not unique to climate risk factors, and it's not clear why climate transition risk would then need to be separately addressed in that context. Rather than specific recommendations, a more principles-based approach ought to be outlined in this section for how climate scenario analysis could be implemented into risk policies. Paragraph 70: ■ It refers to an example of sectoral investment limits, leaving an impression that divestment is encouraged. For this AP to prevent the inducement of ill-considered divestment and to promote awareness of the importance of engagement to encourage the decarbonisation of the investee, GFIA suggests making reference to transition finance. Paragraph 71: ■ It also refers to investee engagement, restricted lists, and divestment lists as examples of mitigation strategies prompted by scenario analysis. However, it lacks elements of engagement to encourage transition of hard-to-abate sectors.
International Actuarial Association (IAA)	International	In para 70, discussion of appropriate frequency for reviewing investment policies, this probably is generic and not just related to climate change, as the investment markets are continually impacted by events in the region/sector/world. Suggest replacing the words "to determine the appropriate frequency for reviewing" with "in". Note also that such reviews will be dependent on the duration of investments and liquidity of investments.

Ceres	United States	Ceres strongly supports the value of scenario analyses for enabling insurers' substantive reviews of vulnerabilities across interlinked investment and underwriting realms. Guidance to unearth hidden correlations demonstrates advanced ambitions for risk identification. Relating findings to limits frameworks and stranded asset dangers shows temperance regarding future solvency strains, and suggestions to support managed transactions endorses constructive market leadership during turbulent times. However, more specific transparency expectations may further reinforce positive accountability. Additionally, further detail on quantitative model usability and proprietary methodological flexibility could support smooth adoption amidst data limitations. Overall, clearly embedding exercises directly into core risk policies cements climate resilience responsibly into existing governance frameworks. This integration can yield major risk management dividends as exposures escalate over years ahead.
The Sunrise Project, Financial Regulation and Policy Program	European Union	Supervisors should ensure that insurers include an assessment of climate risks as part of their overall review of investment and underwriting, not just encourage such assessments. Paragraph 69 should be revised accordingly. Doing so would be consistent with paragraph 71, which states, in part, "supervisors should require insurers to incorporate consideration of climate-related risks in their investment and underwriting policies, where there is material exposure of individual products to climate change risk." Supervisors should set "expectations on the role of scenario analysis to determine the appropriate frequency for reviewing and making changes to investment policies, including the limits framework" not merely "consider" doing so as paragraph 70 contemplates. Supervisors must establish minimum expectations, especially with respect to the use and application of new tools. However, supervisors should also clarify that each insurer may need to review and adjust investment policies more frequently and that decisions should not rely on scenario analysis alone, given its limitations.

The Geneva Association	International	- Although the paper acknowledges the evolving-stage status of climate scenario analysis and some of the limitations of the tool, most notably in paragraph 34d, it gives insufficient attention to these limitations throughout the paper. Instead, the paper promotes a variety of uses for scenario analysis, including investment management and underwriting processes (incl. pricing), risk management (incl. risk appetite statements), capital/ solvency management, business strategy, and macroprudential analysis (by supervisors). The IAIS also provides descriptive indications on how firms have to incorporate the outcomes of climate scenario analysis in their governance, indicating that such assessments should provide an adequate basis for the assessment of overall solvency needs or to inform concrete management actions based on adverse scenarios (paragraph 78). The suggested expansive use of a tool that has structural limitations creates a fundamental tension within the application paper.- The Geneva Association view is that company specific forward looking climate risk assessments should be aligned with the effective duration of the underlying insurance liabilities to inform concrete business decisions today. But the impact of climate change is for some parts slow moving while weather-related exposures can be flexibly managed and steered through limited duration of re/insurance contracts (typically one-year contracts for property insurance) as well as active portfolio steering. For the same reasons, such forward-looking analysis is not adequate for conclusive risk management decisions, including prudential requirements, e.g., capital requirements, which are also set for a short time horizon. - While some limitations may be addressed over time such as the lack of reliable data, the uncertainty regarding projections of frequency and severity of insured perils and the uncertainty around climate adaptation measures taken. Other limitations, however, are more endemic, such as the uncertainty of any projection spanning multiple decades into the future. Still, such challenges limit the suitability of such assessments to inform concrete business decisions such as pricing, underwriting, the ERM framework, ORSA or investment decisions or capital/ solvency requirements. We believe the paper is grounded in an assumption of an unrealistic degree of precision in scenario analysis and urge the IAIS not to promote or overutilize tools for purposes for which they are not necessarily well suited.- It is in our view important to address the discrepancy between the paper's acknowledgement of the unreliability of scenario analysis and the proposed broad uses of the tool. It may therefore be more appropriate to position the AP as aspirational, emphasizing the potential future applications of scenario analysis, while acknowledging its limitations in terms of supervisory and risk management effectiveness. Concrete paragraphs that merit reconsideration in line with the aforementioned limitations are: 27 (the use of scenario analysis for investment portfolio and capital position); 34 (conducting scenario analyses to support pricing and capital positions); 55 (use of scenario analysis for testing the robustness and adequacy of solvency positions and defining strategy); 60 (integrating the results of climate scenario analysis into underwriting processes); 74 (use of scenario analysis to assess the adequacy and appropriateness of the existing risk appetite statement); 75 (SA as a tool to identify and assess the robustness of their risk appetite statement); 78 (providing Board with scenarios that provide an adequate basis for the assessment of overall solvency needs).
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The Geneva Association	International	o Although the paper acknowledges the evolving-stage status of climate scenario analysis and some of the limitations of the tool, most notably in paragraph 34d, it gives insufficient attention to these limitations throughout the paper. Instead, the paper promotes a variety of uses for scenario analysis, including investment management and underwriting processes (incl. pricing), risk management (incl. risk appetite statements), capital/ solvency management, business strategy, and macroprudential analysis (by supervisors). The IAIS also provides descriptive indications on how firms have to incorporate the outcomes of climate scenario analysis in their governance, indicating that such assessments should provide an adequate basis for the assessment of overall solvency needs or to inform concrete management actions based on adverse scenarios (paragraph 78). The suggested expansive use of a tool that has structural limitations creates a fundamental tension within the application paper. o The Geneva Association view is that company specific forward looking climate risk assessments should be aligned with the effective duration of the underlying insurance liabilities to inform concrete business decisions today. But the impact of climate change is for some parts slow moving while weather-related exposures can be flexibly managed and steered through limited duration of re/insurance contracts (typically one-year contracts for property insurance) as well as active portfolio steering. For the same reasons, such forward-looking analysis is not adequate for conclusive risk management decisions, including prudential requirements, e.g., capital requirements, which are also set for a short time horizon. o While some limitations may be addressed over time such as the lack of reliable data, the uncertainty regarding projections of frequency and severity of insured perils and the uncertainty around climate adaptation measures taken. Other limitations, however, are more endemic, such as the uncertainty of any projection spanning multiple decades into the future. Still, such challenges limit the suitability of such assessments to inform concrete business decisions such as pricing, underwriting, the ERM framework, ORSA or investment decisions or capital/ solvency requirements. We believe the paper is grounded in an assumption of an unrealistic degree of precision in scenario analysis and urge the IAIS not to promote or overutilize tools for purposes for which they are not necessarily well suited. o It is in our view important to address the discrepancy between the paper's acknowledgement of the unreliability of scenario analysis and the proposed broad uses of the tool. It may therefore be more appropriate to position the AP as aspirational, emphasizing the potential future applications of scenario analysis, while acknowledging its limitations in terms of supervisory and risk management effectiveness. Concrete paragraphs that merit reconsideration in line with the aforementioned limitations are: 27 (the use of scenario analysis for investment portfolio and capital position); 34 (conducting scenario analyses to support pricing and capital positions); 55 (use of scenario analysis for testing the robustness and adequacy of solvency positions and defining strategy); 60 (integrating the results of climate scenario analysis into underwriting processes); 74 (use of scenario analysis to assess the adequacy and appropriateness of the existing risk appetite statement); 75 (SA as a tool to identify and assess the robustness of their risk appetite statement); 78 (providing Board with scenarios that provide an adequate basis for the assessment of overall solvency needs).
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Comments on section 5.6 Risk appetite statement (ICP 16.4)

General Insurance Association of Japan	Japan	Although it is useful to understand potential breaches to the risk appetite statement through climate risk scenario analysis, the complexity, uncertainty, and technical difficulties involved in scenario analysis limit the use of the analysis results. When using the results of scenario analysis to determine breaches to the risk appetite statement, these limitations should be carefully considered. Since risks attributable to climate change have a longer-term impact than other risks, even when a risk appetite statement deals with the same risk categories, it is expected that the description will be more complex. It should also be noted that risk appetite is determined by considering various risks in the overall business portfolio, and it is not always feasible to use the results of climate risk scenario analysis for assessment in a risk appetite statement.
National Association of Insurance Commissioners (NAIC)	United States of America	• Para 73: for clarity, suggest quoting what is ICP 16.4: ICP 16.4 requires “the insurer to have a risk appetite statement that: ... through a more granular risk limits structure”.
Insurance Europe	Europe	• The IAIS’s recommendation that scenario analysis should be used to assess the strength/robustness of their risk appetite in the current risk environment and to then update the statement based on these scenarios is not realistic. Using multiple scenarios could lead undertakings to redefine their risk appetite based on various sets of results, which may vary considerably. • In addition, the IAIS’s expectations that insurers change their risk appetite (e.g. by already incorporating potential future changes to reinsurance capacity) based on climate risk scenario analysis is likely to have an unnecessary and immediate negative effect on the protection gap.
Finance Watch	EU	If scenario analyses are improved as outlined in the response to questions 1 & 3 and combined with work done by insurers on transition planning, then the guidance in this section would be an important improvement to advise on the application of ICP 16.4 here. Until then the limitations of climate scenario analyses should be prominently acknowledged.

Global Federation of Insurance Associations (GFIA)	Global	The complexity, uncertainty, and technical difficulties involved in scenario analysis limit the use of the analysis results to inform business decisions. When using the results of scenario analysis to determine breaches to the risk appetite statement, these limitations should be carefully considered. Since risks attributable to climate change have a longer-term impact than other risks, even when a risk appetite statement deals with the same risk categories, it is expected that the description will be more complex. It should also be noted that risk appetite is determined by considering various risks in the overall business portfolio, and it is not always feasible to use the results of climate risk scenario analysis for assessment in a risk appetite statement.
Ceres	United States	Section 5.6 frames scenario analysis as an ideal tool for enabling substantive reviews of risk appetite adequacy amidst shifting climate exposures. Relating findings to risk thresholds demonstrates advanced integration ambitions to embed climate resilience responsibly. Guidance noting heightened catastrophe risk and constrained risk transfer capacity shows prudence regarding future solvency strains, and considerations to evolving reinsurance and product dynamics endorses constructive agility. However, more detail on associated public transparency aims and quantitative model usability expectations could further reinforce positive accountability. Overall, positioning exercises to clearly inform risk appetite evaluations and business model vulnerability assessments cements prudent planning into existing governance. This integration promises significant risk management benefits as climate uncertainties crescendo over years ahead.
The Sunrise Project, Financial Regulation and Policy Program	European Union	The recommendations in paragraphs 74-76 should be strengthened. Supervisors should set expectations on “scenario analysis design that allows for assessing alignment of the existing portfolio of assets and liabilities with the risk appetite statement, under different scenarios, over longer time horizons,” not merely consider doing so. Establishing minimum expectations is a crucial supervisory role. Insurers must incorporate changes to reinsurance capacity into scenario analysis exercises. Failing to do so would ignore current developments in the reinsurance market. [1] Scenario analysis should be used to evaluate the robustness of risk appetite statements and make adjustments and potential vulnerabilities in the business model. While scenario analysis is imperfect and should not be the only tool relied on, failure to consider adverse climate scenarios increases the likelihood that insurers will not appropriately consider climate-related financial risks. [1] AFP, “As climate catastrophes rise, reinsurers reduce risks” (Sept. 13, 2023), https://www.france24.com/en/live-news/20230913-as-climate-catastrophes-rise-reinsurers-reduce-risks.

The Geneva Association	International	- Although the paper acknowledges the evolving-stage status of climate scenario analysis and some of the limitations of the tool, most notably in paragraph 34d, it gives insufficient attention to these limitations throughout the paper. Instead, the paper promotes a variety of uses for scenario analysis, including investment management and underwriting processes (incl. pricing), risk management (incl. risk appetite statements), capital/ solvency management, business strategy, and macroprudential analysis (by supervisors). The IAIS also provides descriptive indications on how firms have to incorporate the outcomes of climate scenario analysis in their governance, indicating that such assessments should provide an adequate basis for the assessment of overall solvency needs or to inform concrete management actions based on adverse scenarios (paragraph 78). The suggested expansive use of a tool that has structural limitations creates a fundamental tension within the paper.- The Geneva Association view is that company specific forward looking climate risk assessments should be aligned with the effective duration of the underlying insurance liabilities to inform concrete business decisions today. But the impact of climate change is for some parts slow moving while weather-related exposures can be flexibly managed and steered through limited duration of re/insurance contracts (typically one-year contracts for property insurance) as well as active portfolio steering. For the same reasons, such forward-looking analysis is not adequate for conclusive risk management decisions, including prudential requirements, e.g., capital requirements, which are also set for a short time horizon. - While some limitations may be addressed over time such as the lack of reliable data, the uncertainty regarding projections of frequency and severity of insured perils and the uncertainty around climate adaptation measures taken. Other limitations, however, are more endemic, such as the uncertainty of any projection spanning multiple decades into the future. Still, such challenges limit the suitability of such assessments to inform concrete business decisions such as pricing, underwriting, the ERM framework, ORSA or investment decisions or capital/ solvency requirements. We believe the application paper is grounded in an assumption of an unrealistic degree of precision in scenario analysis and urge the IAIS not to promote or overutilize tools for purposes for which they are not necessarily well suited.- It is in our view important to address the discrepancy between the paper's acknowledgement of the unreliability of scenario analysis and the proposed broad uses of the tool. It may therefore be more appropriate to position the AP as aspirational, emphasizing the potential future applications of scenario analysis, while acknowledging its limitations in terms of supervisory and risk management effectiveness. Concrete paragraphs that merit reconsideration in line with the aforementioned limitations are: 27 (the use of scenario analysis for investment portfolio and capital position); 34 (conducting scenario analyses to support pricing and capital positions); 55 (use of scenario analysis for testing the robustness and adequacy of solvency positions and defining strategy); 60 (integrating the results of climate scenario analysis into underwriting processes); 74 (use of scenario analysis to assess the adequacy and appropriateness of the existing risk appetite statement); 75 (SA as a tool to identify and assess the robustness of their risk appetite statement); 78 (providing Board with scenarios that provide an adequate basis for the assessment of overall solvency needs).
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The Geneva Association	International	o Although the paper acknowledges the evolving-stage status of climate scenario analysis and some of the limitations of the tool, most notably in paragraph 34d, it gives insufficient attention to these limitations throughout the paper. Instead, the paper promotes a variety of uses for scenario analysis, including investment management and underwriting processes (incl. pricing), risk management (incl. risk appetite statements), capital/ solvency management, business strategy, and macroprudential analysis (by supervisors). The IAIS also provides descriptive indications on how firms have to incorporate the outcomes of climate scenario analysis in their governance, indicating that such assessments should provide an adequate basis for the assessment of overall solvency needs or to inform concrete management actions based on adverse scenarios (paragraph 78). The suggested expansive use of a tool that has structural limitations creates a fundamental tension within the paper. o The Geneva Association view is that company specific forward looking climate risk assessments should be aligned with the effective duration of the underlying insurance liabilities to inform concrete business decisions today. But the impact of climate change is for some parts slow moving while weather-related exposures can be flexibly managed and steered through limited duration of re/insurance contracts (typically one-year contracts for property insurance) as well as active portfolio steering. For the same reasons, such forward-looking analysis is not adequate for conclusive risk management decisions, including prudential requirements, e.g., capital requirements, which are also set for a short time horizon. o While some limitations may be addressed over time such as the lack of reliable data, the uncertainty regarding projections of frequency and severity of insured perils and the uncertainty around climate adaptation measures taken. Other limitations, however, are more endemic, such as the uncertainty of any projection spanning multiple decades into the future. Still, such challenges limit the suitability of such assessments to inform concrete business decisions such as pricing, underwriting, the ERM framework, ORSA or investment decisions or capital/ solvency requirements. We believe the application paper is grounded in an assumption of an unrealistic degree of precision in scenario analysis and urge the IAIS not to promote or overutilize tools for purposes for which they are not necessarily well suited. o It is in our view important to address the discrepancy between the paper's acknowledgement of the unreliability of scenario analysis and the proposed broad uses of the tool. It may therefore be more appropriate to position the AP as aspirational, emphasizing the potential future applications of scenario analysis, while acknowledging its limitations in terms of supervisory and risk management effectiveness. Concrete paragraphs that merit reconsideration in line with the aforementioned limitations are: 27 (the use of scenario analysis for investment portfolio and capital position); 34 (conducting scenario analyses to support pricing and capital positions); 55 (use of scenario analysis for testing the robustness and adequacy of solvency positions and defining strategy); 60 (integrating the results of climate scenario analysis into underwriting processes); 74 (use of scenario analysis to assess the adequacy and appropriateness of the existing risk appetite statement); 75 (SA as a tool to identify and assess the robustness of their risk appetite statement); 78 (providing Board with scenarios that provide an adequate basis for the assessment of overall solvency needs).
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Comments on section 5.7 Board accountability (ICP 16.11)		
General Insurance Association of Japan	Japan	In order to recognize climate change risks as material risks and to understand the impact of these risks on the individual insurer, if relevant for such individual insurer, it is important for the board of directors to be well informed. However, the methodology for scenario analysis, the content to be reported, and the items to be discussed should be based on the insurer's risk profile, as well as the nature and size of its business. As for the 2nd sentence of the 3rd bullet of Paragraph 78 ("Management actions should be concrete, applicable within a short timeframe and tailored to the specific risk profile of the insurer"), management actions can vary depending on the time horizon and the assumptions of scenario analysis. What measures can be implemented in a short timeframe can also vary according to market conditions. Therefore, there may well be cases where management actions have to be similar to a high-level direction or something like a decision tree.
Principles for Responsible Investment	United Kingdom	The PRI welcomes and supports the recommendations that boards explicitly consider how climate-related scenario analysis is integrated into existing governance frameworks. We particularly agree with the recommendations that boards should explore management actions to be taken in adverse scenarios, that boards should dedicate time to discussing the results of scenario analysis and their implications for strategy, and that board subcommittees may be particularly useful for discussion of detailed findings. At many asset managers and asset owners around the world, it has been found useful to assign specific board committees responsibility for the oversight of climate change issues. Periodic examination of climate scenario results may be a useful tool for the implementation of such oversight.
Insurance Europe	Europe	• Para 78: The expectations regarding the Board are too prescriptive. The time spent by the Board on scenario analysis should be commensurate to the meaningfulness and decision usefulness of the scenario design and the results.
American Property Casualty Insurance Association	United States	APCIA believes that the recommendations in Paragraph 78 are overly prescriptive and are not appropriate for an application paper. The concept of proportionality which is properly applied elsewhere in the paper should also be applied here. We endorse the comments of the Global Federation of Insurance Associations (GFIA) that: "The expectations regarding the Board are rather prescriptive. The time spent by the Board on scenario analysis should be commensurate to the meaningfulness and decision-usefulness of the scenario design and the results."

Finance Watch	EU	We support section 5.7 and the principle of working to ensure that the board of directors receives and properly considers information on climate risks, including from scenario analyses. It is, however, important for the board to understand the limitations of climate scenario analyses in order to define timely measures. This should be an important part of the time taken to understand scenarios and their implications outlined in paragraph 79. An additional role for Board accountability around the ORSA can be to ensure that climate scenario analyses provide realistic results. This can fit well with ICP 16.11.2, where an independent review can be conducted of the results of the scenario analyses to this end.
Global Federation of Insurance Associations (GFIA)	Global	It is important for the board of directors to be well informed and to understand the impact of climate change risks on the individual insurer. If insurers use scenario analysis, the methodology for scenario analysis, the content to be reported, and the items to be discussed should be based on the insurer's risk profile, complexity of its operations, as well as the nature, scope, and size of its business. In this section, climate risk ought to be contextualised as a risk that is affecting other risks that are already monitored and managed by the insurer and positioned for board accountability in terms of materiality and complexity in relation to those other risks. For instance, if climate risk is less material for an insurer than other risks or is captured within other, non-climate-specific scenario analysis, it may be an imprudent use of time, oversight, and resources for the board to receive a separate "set of scenarios aimed at assessing climate risk in a forward-looking manner". Rather, a more principles-based approach for board accountability as it relates to scenario-based analysis ought to be outlined in this section. Paragraph 78: ■ The expectations regarding the Board are rather prescriptive. The time spent by the Board on scenario analysis should be commensurate to the meaningfulness and decision-usefulness of the scenario design and the results. ■ As for the 2nd sentence of the 3rd bullet of Paragraph 78 ("Management actions should be concrete, applicable within a short timeframe and tailored to the specific risk profile of the insurer"), management actions can vary depending on the time horizon and the assumptions of scenario analysis. What measures can be implemented in a short timeframe can also vary according to market conditions. Therefore, there may well be cases where management actions have to be similar to a high-level direction or something like a decision tree.
International Actuarial Association (IAA)	International	In para 78, second bullet, the time horizon for this "long-term" analysis should be relevant to the business model. Applying the same time horizons to all business models would be a mistake. In para 78, third bullet, management actions should not be overly descriptive and limited, to reflect the dynamic environment that insurers live in. As such, the IAA is concerned that the word "concrete" may restrict the ability of management to adapt to the evolving environment.

Ceres	United States	Ceres applauds the rightful positioning of boards as ultimately accountable for climate risk governance despite longer-term uncertainty. Guidance calling for substantive exposure assessments and scenario analysis engagement demonstrates laudable ambitions to overcome short-term orientations, and framing resilience as an enterprise-critical priority and emphasizing demonstrable management actions shows astute strategic thinking. Considerations of solvency impacts beyond normal planning cycles exhibits studied awareness given climate risks play out over decades. This section could further emphasize directors as active shepherds in business model adaptation rather than just analysis monitors, but overall, clearly elevating boards' duties suitably trains attention on governance bodies best able to drive strategic realignment amidst rising climate uncertainty. Governance consideration is clearly built in as one of the four key pillars of the TCFD climate disclosure structure, which has now been incorporated into the International Sustainability Standards Board. Governance is also key to the work in the U.S. from the insurance regulators in their required disclosure. Ceres' report Climate Risk Management in the U.S. Insurance Sector is an analysis of the almost 500 insurance companies and their responses on key topics, including governance.
E3G	United States	Section 5.7 Board accountability (ICP 16.11) We generally agree with the recommendations in paragraphs 78-79, with the following observations: The final paper should note the importance of having top level decision makers be informed about scenarios, including those that may be highly unlikely. The IAIS should ensure that boards have members with appropriate expertise, and/or board members receive training to ensure sufficient understanding of climate risks, scenario design and limitations, scenario results, including the risk of overconfidence and false security in scenario analysis.

The Sunrise Project, Financial Regulation and Policy Program	European Union	The draft application paper recommends that when scenario analysis exercises are conducted, the board should dedicate time to understanding the results and what they mean for the insurer's strategy. Boards may discuss the more detailed findings in board subcommittees (paragraph 79). The draft further provides some clarification on the information that should be provided to the board to form an opinion and make decisions. The draft is vague at best. The final paper must state clearly that it's critical for top level decision making to be informed about scenarios that are unlikely or highly unlikely, but must be avoided under any circumstances. There seems to be a general tendency in the draft application paper to avoid identifying tail risks and acting accordingly. First, scenarios must include tail risks, and second, the information about what can go wrong in the worst case must reach the top. After the Great Financial Crisis struck, Queen Elizabeth asked economists at a visit to the London School of economics in 2008: "Why did no one see it coming?".[1] It seems as if the learnings have already vanished and supervisors are going down the same road again. Turning a blind eye to tail risks is preparing the ground for disaster. Recommendations in the current draft leave much room for willful ignorance on the corporate and supervisory level. IAIS should make it explicit that boards need to include members with expertise or they need to receive training to ensure sufficient understanding of climate risks, scenario design and limitations, scenario results, and the risk of overconfidence and false security leading to erroneous strategic decisions. In addition board members and management should make sure that critical information reaches the top unfiltered including worst case scenarios.----- [1] Giles, C. (2008). The economic forecasters' failing vision. URL: https://www.ft.com/content/50007754-ca35-11dd-93e5-000077b07658
The Geneva Association	International	The IAIS also provides descriptive indications on how firms must incorporate the outcomes of climate scenario analysis in their governance, indicating that such assessments should provide an adequate basis for the assessment of overall solvency needs or to inform concrete management actions based on adverse scenarios (paragraph 78)
The Geneva Association	International	o The IAIS also provides descriptive indications on how firms must incorporate the outcomes of climate scenario analysis in their governance, indicating that such assessments should provide an adequate basis for the assessment of overall solvency needs or to inform concrete management actions based on adverse scenarios (paragraph 78)

Does the draft application paper provide sufficient detail to be a useful tool for supervisors and insurers?

General Insurance Association of Japan	Japan	Box 2 describes scenario analysis and protection gaps. While we agree with this intention, there are many variables regarding protection gaps, such as consumer and reinsurer behaviors, making them difficult to handle in scenario analysis. In addition, while scenario analysis conducted by an insurer is a bottom-up analysis of the individual company's businesses, protection gaps are a macro matter. Since the scopes of the two are different, we do not believe that the former can provide a meaningful analysis of the latter. It is possible to use macro scenario analysis conducted by supervisory authorities, but even in that case, protection gaps will ultimately depend on the underwriting behavior of individual insurance companies and the purchasing behavior of consumers. Therefore, the results are likely to differ significantly depending on the assumptions and hypotheses made.
Finance Watch	EU	The draft application paper should provide more detail communicating the limitations of the climate scenario analyses and interpreting their results in the view of these limitations - in order to avoid a false sense of security on the side of regulators and supervisors responsible for timely mitigation actions. Supervisors should further pursue the work to ensure that climate scenarios produce realistic results, as outlined in the responses to questions 1 and 3. This should be combined with an adequate time-horizon and quantification of the stranded fossil fuel assets borne by investment portfolios for them to be effective tools for assessing climate-related risks. Further, more guidance should be provided on the considerations of litigation risks related to insurers' own practices - refer to our comment on section 2.1 above.
Global Federation of Insurance Associations (GFIA)	Global	Box 2 describes scenario analysis and protection gaps. While GFIA agrees with this intention, there are many variables regarding protection gaps, such as consumer and reinsurer behaviours, making them difficult to handle in scenario analysis. In addition, while scenario analysis conducted by an insurer is a bottom-up analysis of the individual company's businesses, protection gaps are a macro matter. Since the scopes of the two are different, GFIA does not believe that the former can provide a meaningful analysis of the latter. It is possible to use macro scenario analysis conducted by the authorities, but even in that case, protection gaps will ultimately depend on the underwriting behaviour of individual insurance companies and the purchasing behaviour of consumers. Therefore, the results are likely to differ significantly depending on the assumptions and hypotheses made.
American Academy of Actuaries	United States	We don't believe that the scenario analysis as described will be a useful tool for the reasons described above.

International Actuarial Association (IAA)	International	The IAA is concerned that the paper seems to ignore the differences in business models and how that relates to time horizon selections and the use of static vs. dynamic assumptions (as well as the needed granularity of the scenario analysis for some business models). The IAA believes that the guidance leans more towards a “one size fits all” approach.
Ceres	United States	Overall, yes, our assessment is this draft application paper does provide sufficient detail to serve as a valuable tool for both supervisors and insurers. Some of the key strengths include: 1) Clear definitional orientation: the paper effectively distinguishes between scenario analysis and stress testing while elucidating the various dimensions of climate risk to provide helpful context; 2) Actionable integration guidance: there is pragmatic guidance on embedding climate considerations within existing regulatory and internal risk governance frameworks that drives adoption; 3) Holistic approach: rather than a narrow focus, the paper examines implications across the breadth of supervisory mandates and insurer functions, demonstrating sophisticated thinking; 4) Avoidance of over-prescription: while laying out sound practices, the guidance retains flexibility for bespoke localization and proportionate customization as methodologies mature in this still emerging domain; 5) Emphasis on resilience: the repeated focus on enhancing long-term resilience against systemic risk promotes urgent adoption and helps frame climate risk as an enterprise-critical priority. Some sections may benefit from additional specifics on regulatory expectations, disclosure best practices, data sources, and quantitative modelling processes to provide even further tangibility. The paper in sum strikes an effective balance in outlining an ambitious, far-sighted vision for climate risk governance while grounding guidance in practical restraints and provides a strong toolkit for supervisor and insurers alike focused on real-world usability.
The Sunrise Project, Financial Regulation and Policy Program	European Union	n/a
The Geneva Association	International	By providing an overly optimistic and prescriptive perspective of potential use cases of climate scenario analysis to inform macro- and micro prudential policies as well as for insurance firms governance and enterprise risk management, the application paper reduced necessary flexibility for firms to conduct such forward-looking assessments in a most decision useful way for their business model and risk profile. It also risks elevating climate risks above other (potentially more dominant) risk drivers over a longer time horizon, leading to potential mis-incentives for prudential policy. We

		would recommend the IAIS to follow a more principles-based and staggered approach, reflecting the fast moving and still evolving nature of underlying methodology.
The Geneva Association	International	o By providing an overly optimistic and prescriptive perspective of potential use cases of climate scenario analysis to inform macro- and micro prudential policies as well as for insurance firms governance and enterprise risk management, the application paper reduced necessary flexibility for firms to conduct such forward-looking assessments in a most decision useful way for their business model and risk profile. It also risks elevating climate risks above other (potentially more dominant) risk drivers over a longer time horizon, leading to potential mis-incentives for prudential policy. We would recommend the IAIS to follow a more principles-based and staggered approach, reflecting the fast moving and still evolving nature of underlying methodology.
Are the different dimensions of climate risk for insurers namely (i) transition (ii) physical and (iii) climate-related litigation risks effectively covered in the application paper to both sides of insurer balance sheets?		
General Insurance Association of Japan	Japan	As for (iii), while it can be understood as a reference to litigation risks in the investee (asset side) and underwriting such as D&O (liability side), there may be differences in exposures and risk quantities for climate-related litigation risks due to differences in jurisdictional legal systems. This makes it difficult to examine whether climate-related litigation risks are effectively covered in the AP for both sides of insurer balance sheets.

Principles for Responsible Investment	United Kingdom	The PRI welcomes the discussions of transition, physical, and litigation risks. We would suggest that the following be considered when supervisors undertake to address these risks, evaluate their relative importance, and understand the interactions among them from the perspective of both sides of insurer balance sheets. While the type of risk analysis done in the context of underwriting has traditionally been quite different from that used for investment, addressing the climate crisis may necessitate a greater harmonization of approach. Risk analysis for underwriting has often focused in significant part on the worst possible outcomes an insurer might experience, in order to assess maximum possible claims. Investment planning, meanwhile, has been more likely to take an approach that projects an expected outcome as a weighted average, in which the high impact of a worst-case outcome can appear muted by its low probability. In some cases, this may produce a disjunction between an underwriting team's increasingly dire projections of climate change's catastrophic impacts and an investment manager's relative sanguinity about the topic. To bring the two sides into better alignment, insurers may wish to request that investment managers focus on assessing downside risk specifically, rather than variation in general. This could be done using a variety of methods that focus on the risk of loss, rather than simply standard deviation of returns. Investment staff should also be encouraged to explore narrative scenarios (like those created by Business for Social Responsibility on the basis of the quantitative ones developed by the Network for Greening the Financial System). These types of scenarios can help investment professionals to consider climate risk as an investment theme that will alter the entire context of their activity, both through direct impacts and through second and third-order effects such as supply chain disruptions and geopolitical conflict. Seen in this way, the scope of the climate crisis as a financial issue may become more apparent than it does in scenarios that focus solely on transition risk. (The latter may in some cases project relatively minor impacts to portfolios, as expected losses in some sectors are nearly offset by gains in others.) Finally, in some cases, it may be possible for insurers to share the catastrophe models developed by their underwriting teams directly with the investment professionals responsible for their portfolios. Expanding the intellectual tool kit of investment managers in these ways may serve to better align the conceptual approaches being taken by the two sides of insurers' businesses and may thus better protect their long-term prosperity. Modelling to date has emphasized transition risk, particularly in the short term; but physical risk, tipping points, and second-order effects are increasingly being recognized as central to adequate scenario planning. In summer of 2023, the University of Exeter and the Faculty of Actuaries released a report entitled The Emperor's New Climate Scenarios, which argues that the severity of climate risk has been underestimated because of inadequate attention to potential tipping points and second-order effects. At COP 28, the Global Tipping Points report released by Exeter's Global Systems Institute provided more detail on some of these issues, including evidence that five of eight key tipping points are already at risk of being breached. The Intergovernmental Panel on Climate Change, moreover, has noted that the physical changes our planet is already experiencing as a result of climate change may be approaching the limit of humanity's ability to adapt to them. Given this reality, it is no longer prudent for scenarios to assume that physical risk will become significant only in the medium to long term, or that it will grow in a linear fashion. Rather,
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		modelers and users of scenario analysis must grapple with the fact that extreme negative effects could appear quite suddenly and have an impact in the short term.
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Insurance Europe	Europe	- It is noted that: - A dynamic balance sheet approach requires the development of dedicated tools, which might differ significantly between insurers. - The lack of data could prove challenging, in particular for stochastic valuation.
Finance Watch	EU	As referred to in the response to question 4 a key area risk around economic disruption arising from climate change should be considered. Also please refer to our comment on section 2.1 for the consideration of litigation risks.
Global Federation of Insurance Associations (GFIA)	Global	As for (iii), while it can be understood as a reference to litigation risks in the investee (asset side) and underwriting such as D&O (liability side), there may be differences in exposures and risk quantities for climate-related litigation risks due to differences in jurisdictional legal systems. This makes it difficult to examine whether climate-related litigation risks are effectively covered in the AP for both sides of insurer balance sheets.
American Academy of Actuaries	United States	These are well covered in general, but as described above we don't believe the recognition of differences between life and P&C insurers is sufficient.
International Actuarial Association (IAA)	International	The IAA believes that this question has too much of a balance sheet focus. For fast pay non-life insurance, the issue is not "liabilities" but instead the potential for incurred claim impacts that impact net assets more than the liabilities of a year-end financial statement.

Ceres	United States	Yes, in our assessment the draft application paper does effectively cover the core dimensions of climate risk across both sides of the insurer balance sheets. Some of the key strengths demonstrating good multifaceted risk analysis include: 1) Clear definitional distinctions made between physical, transition, and litigation risks that correctly situate them as interconnected; 2) Guidance situating risks as relevant across existing insurance, market, credit, liquidity, and operational risk taxonomy rather than in silos; 3) Examples provided of transmission channels and impacts spanning assets and liabilities containing reasonable breadth; 4) Positing of second and third order effects to prevent overly narrow assessments, demonstrating sophisticated systemic thinking; 5) Proportionality considerations to allow bespoke localization, acknowledging global universality alongside geographical variability in risk factors; 6) Encouragement to take sufficiently long-term views across multiple decades capturing risks playing out over extended timeframes; and 7) Diversified transition pathway scenarios outlined, spanning both orderly and disorderly possibilities. In summary, by providing expansive orientation and diverse illustrative examples, the draft guidance effectively grounds multifaceted, holistic climate risk analysis firmly into existing insurer frameworks, governance, and practices. The dimensions reinforce these risks' complex systemic nature.
The Sunrise Project, Financial Regulation and Policy Program	European Union	n/a
Are there concepts or approaches which should be added to the application paper?		
Finance Watch	EU	The wording of the application paper on certain recommended measures should be strengthened by using the wording of "should" instead of "could" - to facilitate consistency of supervisory practices, among others given the existing supervisory capacity gaps. In particular, we refer to the guidance made in paragraphs 13, 14, 21, 35, 37, 46a, 50, 51, 58b, 62, 67, 71, 74, 76.
Global Federation of Insurance Associations (GFIA)	Global	The suggested addition of climate-related risk implies that it is an example of stand-alone risk. This is not the case. If climate-related risk is going to be included, consider framing it in the context of how climate-related risks may manifest themselves as a material financial risk for purposes of solvency regulation or in other areas. Such an approach of putting into context may be more consistent with the importance of being focused on insurance fundamentals (through a direct link to solvency). Further, it should also be focused on where such risk is material. Additionally, it should also

		incorporate flexibility (where property-casualty insurer risks can manage shorter tail risks over time) while respecting any data challenges.
American Academy of Actuaries	United States	We believe that consideration of management actions and other likely changes over time (versus a static approach) are critical to consider.
International Actuarial Association (IAA)	International	There needs to be better discussion of granularity needs for certain business models.
Ceres	United States	Ceres recommends consideration of potential concepts or approaches that could further strengthen this climate risk application paper, including: 1) More specifics on regulatory expectations for climate risk disclosures, scenario analysis reporting, and associated transparency requirements. Additional detail could better reinforce accountability aims; 2) Concrete illustrations of identified risk concentrations and leading practice examples for risk mitigation across both assets and liabilities. Real-world cases reinforce tangibility; 3) Greater detail on quantitative model usability expectations, data sources, and methodological flexibility to aid adoption by insurers amidst current limitations. Granularity aids application; 4) Inclusion of guidance for smaller, less-resourced insurers on proportionate approaches to progressive climate risk integration; 5) Collaborative approaches to developing open-access climate risk data consortiums through supervisor cooperation and industry initiatives, as accessibility aids smaller firm adoption; 6) References to insurer climate transition plans, as highlighting forward-looking transition planning could complement risk analysis with a solutions-focused, resilience-building imperative befitting IAIS' sustainability mission. These transition plans should include a longer-term net zero goal but also measurable milestones at least every 5 years; 7) Specific needs and services for low- and moderate-income families and 8) Consideration of jurisdictional variation in policyholder vulnerabilities and distributional climate impacts based on socioeconomic factors, providing an equity lens application. In summary, additional levels of granularity, accessibility, tangibility, and specificity could provide helpful supplemental guidance as supervisors and insurers alike navigate an increasingly climate risk-filled landscape in the years ahead.

The Sunrise Project, Financial Regulation and Policy Program	European Union	n/a
Does the application paper cover all relevant issues for scenario analysis from a macroprudential perspective (see section 4)?		
Finance Watch	EU	Please refer to the response to question 8.
Global Federation of Insurance Associations (GFIA)	Global	GFIA suggests that the IAIS not limit climate scenario analysis to quantitative analysis. Qualitative analysis can be useful in (1) providing insights on the interconnectedness of climate risk with other risks (e.g. geopolitical risks) As well as (2) in filling gaps in areas that are less understood or challenging to models (such as tipping point and feedback loops).
Ceres	United States	Yes, we find the draft paper covers key relevant issues for climate scenario analysis from a macroprudential supervisory perspective. Some of the main highlights demonstrating good breadth of guidance include: 1) Assessing systemic importance of individual insurers and the sector through exercises evaluating risk concentrations and transmission channels; 2) Use of analyses to detect protections gaps and consumer impacts alongside financial stability risks; 3) Identification of data and method limitations hindering access by less-resourced firms; 4) Coordination of complexities across jurisdictional, sectoral, and regulatory mandate variations; 5) Role of transparency in risk communication, accountability, and motivating industry changes; 6) Relating findings to capital and liquidity planning, crisis preparedness, and pre-emptive interventions; and 7) Guidance allowing flexibility for bespoke stress-testing while calling for transparency. While certain sections may have benefited from more granularity around methods, coordination protocols, disclosure standards and such, the paper broadly demonstrates sophisticated thinking around key channels for systemic risk amplification. In summary, section 4 details both the purpose and applications of macroprudential-focused climate risk analysis across regulatory dimensions.

The Sunrise Project, Financial Regulation and Policy Program	European Union	n/a
The Geneva Association	International	- The paper seems to assume a link between climate change risk and insurer-generated systemic risk. This going beyond what we believe to be reasonable. - The FSB defines systemic risk a threat to the entire financial system: “the risk of disruption to the flow of financial services that is caused by an impairment of all or parts of the financial system and has the potential to have serious negative consequences for the real economy” . While climate change undeniably poses risks to societies globally, to date, the linkages between climate change, the insurance sector and impairment of the financial system are unsubstantiated. For example, it is unclear how the impact of climate risk on asset values might create a fire sale risk such as what was experienced during the 2008 financial crisis. Also, there are differences in the composition of the investment portfolio between banks and insurers, with the latter being driven by asset liability management and hence significant investments in government bonds that have a different exposure to climate related transition risks. Importantly, the IAIS’s Global Insurance Market Report (GIMAR) published in September 2021 concluded that the insurance industry was well-positioned to withstand potential losses related to climate relevant investments. Considering this, the IAIS should focus on the micro prudential management of risk by individual firms rather than macroprudential threats to the financial system.

The Geneva Association	International	o The paper seems to assume a link between climate change risk and insurer-generated systemic risk. This going beyond what we believe to be reasonable. o The FSB defines systemic risk a threat to the entire financial system: “the risk of disruption to the flow of financial services that is caused by an impairment of all or parts of the financial system and has the potential to have serious negative consequences for the real economy” . While climate change undeniably poses risks to societies globally, to date, the linkages between climate change, the insurance sector and impairment of the financial system are unsubstantiated. For example, it is unclear how the impact of climate risk on asset values might create a fire sale risk such as what was experienced during the 2008 financial crisis. Also, there are differences in the composition of the investment portfolio between banks and insurers, with the latter being driven by asset liability management and hence significant investments in government bonds that have a different exposure to climate related transition risks. Importantly, the IAIS’s Global Insurance Market Report (GIMAR) published in September 2021 concluded that the insurance industry was well-positioned to withstand potential losses related to climate relevant investments. Considering this, the IAIS should focus on the micro prudential management of risk by individual firms rather than macroprudential threats to the financial system.
Does the application paper cover all relevant issues for scenario analysis related to Enterprise Risk Management and governance (see section 5)?		
Insurance Europe	Europe	• While the paper explores a lot of concepts, it is highlighted that it could be challenging for undertakings to apply these in practice.
Finance Watch	EU	Please refer to the responses to questions 13 - 19.

Ceres	United States	Yes, we find the application paper covers the key relevant issues regarding integrating climate scenario analysis into enterprise risk management and insurer governance relatively comprehensively. Main highlights include: 1) Embedding climate considerations across ORSAs, risk appetite evaluations, asset liability management, investment and underwriting policies, and board accountability; 2) Relating findings to strategic planning, risk limits, capital adequacy, stress testing, and solvency considerations; 3) Encouraging investor stewardship for managed climate risk transitions in investee companies; 4) Proportionate and phase-in flexibility afforded for sophistication variations across market participants; 5) Identifying second and third order business impacts spanning future products, services, and business models; and 6) Long-term “tragedy of the horizons” framing underscoring systemic risk urgency. The paper may benefit from further detail around quantitative model usability expectations, data accessibility pathways, disclosure best practices, and remediation protocols for identified deficiencies. Overall, section 5 embeds scenario analysis into risk management and governance mechanisms demonstrating commendable awareness of transmission channels, with key considerations covered well at a broad level.
The Sunrise Project, Financial Regulation and Policy Program	European Union	In the draft application paper, the IAIS suggests that scenario analysis should play a key role in informing corporate risk management and governance. In particular, it is noticeable that the use of scenario analysis results as a basis for strategic decision making for the development of an insurer's core business is a recurring theme throughout the draft application paper. This raises the question of the use of scenario analysis results in relation to the development and implementation of science-based, Paris-aligned, net zero transition plans. A highly relevant issue that is not even briefly touched upon in this draft application paper. It is the responsibility of the IAIS to provide sufficient guidance on how to use the various tools recommended by regulators and supervisors to address climate-related financial risks and inform business strategy. To fulfil their responsibilities, boards and senior management need to have a thorough understanding of scenario analysis and its limitations, and be fully aware that it's not an option to use scenario analysis results to justify any strategic decision that is inconsistent with achieving a net-zero transition in line with the Paris Agreement, and that such an attempt will trigger supervisory intervention. Where appropriate, insurers should add board members with relevant expertise and provide training to other board members. Expertise should not be concentrated in the hands of one board member. The same concerns and recommendations would apply to senior management.

The Geneva Association	International	- As set out previously, forward-looking climate scenario analysis has clear limitations that hamper its viability to inform concrete business decisions. We are of the view that the current draft paper should reflect these limitations more clearly and that it goes too far in terms of promoting the reliance on this tool, particularly for firms' enterprise risk management. Areas where we believe the IAIS has gone too far include: § Informing business strategy (paragraphs 13, 17, 27, 34, 65, 77) § Informing risk appetite (paragraphs 74, 75, 77) § Assessing and managing capital (paragraphs 27, 34, 55, 78) § Assessing and managing investment/ transition risks (paragraphs 13, 26, 27, 58) § Assessing and managing underwriting risks (paragraphs 14, 26, 59, 60) § Identifying climate-change related risk correlations (paragraph 27) § Assessing financial stability implications (paragraphs 25, 26, 35-44) - Also, the governance section is very detailed and prescriptive and by that singles out the treatment of one risk driver (climate risks) over others in an insurers' governance. This is not in line with risk-based supervision.
The Geneva Association	International	o As set out previously, forward-looking climate scenario analysis has clear limitations that hamper its viability to inform concrete business decisions. We are of the view that the current draft paper should reflect these limitations more clearly and that it goes too far in terms of promoting the reliance on this tool, particularly for firms' enterprise risk management. Areas where we believe the IAIS has gone too far include: § Informing business strategy (paragraphs 13, 17, 27, 34, 65, 77) § Informing risk appetite (paragraphs 74, 75, 77) § Assessing and managing capital (paragraphs 27, 34, 55, 78) § Assessing and managing investment/ transition risks (paragraphs 13, 26, 27, 58) § Assessing and managing underwriting risks (paragraphs 14, 26, 59, 60) § Identifying climate-change related risk correlations (paragraph 27) § Assessing financial stability implications (paragraphs 25, 26, 35-44) o Also, the governance section is very detailed and prescriptive and by that singles out the treatment of one risk driver (climate risks) over others in an insurers' governance. This is not in line with risk-based supervision.

Is there any additional work the IAIS should be undertaking in the area of climate-related scenario analysis?		
Finance Watch	EU	Please refer to the response to questions 1 and 3.
Ceres	United States	Ceres recommends the following potentially productive areas of additional work the IAIS could undertake to build on this strong foundation: 1) Issue supplementary guidance with greater specification on regulatory disclosure expectations, modelling standards, data accessibility pathways and flexible but standardized methodological frameworks. More granularities would support adoption; 2) Provide a repository of physical and transition risk climate data sets, tools, and leading practice case studies curated for the insurance sector. Accessibility aids adoption; 3) Conduct cross-jurisdictional scenario analysis projects evaluating consistent, comparable results across regions to better understand interconnectivity of climate impacts; 4) Develop inspector training modules and run industry workshops supporting capability improvement proportionate to insurer sophistication and based on evolving leading practices. Capacity building aids progression; and 5) Issue guidance supporting smaller, less-resourced insurers focused on incremental integration and highlighting alternative avenues to access external expertise. Supplementary work enabling greater harmonization, coordination, accessibility, transparency, capability building, and progress visibility could further amplify the IAIS' influence in this critical area of insurer insolvency and systemic risk resilience.

The Sunrise Project, Financial Regulation and Policy Program	European Union	The IAIS should undertake efforts to improve development and understanding of scenario analysis so that they can be used effectively by supervisors, insurers, and other stakeholders. This work would include educating key IAIS decision makers in the relevant IAIS committees such as the Executive Committee, the Implementation and Assessment Committee, the Macroprudential Committee and the Policy Development Committee on the limitations of scenario analysis and support knowledge diffusion among all relevant stakeholders in the insurance sector. In particular, it is the full responsibility of the IAIS to ensure that insurers and supervisors understand the limitations of the NGFS and other models that underpin the scenarios, as the draft application paper states that it "does not consider the development of climate scenarios themselves, which are issues to be considered by bodies such as the Network for Greening the Financial System (NGFS)". It must be considered inherently dangerous to propose the use of a new forward-looking tool to identify climate-related financial risks and to use the results as a basis for strategic decision making, which could potentially create a false sense of security if applied without an understanding of the limitations rooted in the underpinning models (such as the NGFS models). A growing number of economic reports are taking a critical view of scenario analysis and the economic models upon which they are based (in addition to those referred to elsewhere in this response, a non-exhaustive list is provided below). We strongly encourage the IAIS to ensure that these findings are brought to the attention of the relevant IAIS Committees (see above) and stakeholders in the insurance sector. The IAIS should consider providing supervisors and insurers with an application guide to scenario analysis, covering the full range of currently available information on scenario analysis and ensuring that the tool is fully understood and correctly applied.¹) Hugues, C., Ryan-Collins, J., Van Lerven, F. (2020). Finance, climate-change and radical uncertainty: Towards a precautionary approach to financial policy. URL: https://www.sciencedirect.com/science/article/pii/S092180092100015X2) Keen, S. (2023). Loading the DICE against pension funds. Flawed economic thinking on climate has put your pension at risk. URL: https://carbontracker.org/reports/loading-the-dice-against-pensions/3) Monasterolo, I., Nieto, M., Schets, E. (2022). The Good, the Bad and the Hot House World: Conceptual Underpinnings of the NGFS Scenarios and Suggestions for Improvement. URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=42113844) Monasterolo, I., Nieto, M. J., Schets, E. (2023). Assessing the "Tragedy of the Horizons": Conceptual underpinnings of the NGFS scenarios and suggestions for improvement. URL: https://www.suerf.org/publications/suerf-policy-notes-and-briefs/assessing-the-tragedy-of-the-horizons-conceptual-underpinnings-of-the-ngfs-scenarios-and-suggestions-for-improvement/5) Philipponnat, T. (2023). Finance in a hot house world. A call for economic models that do not mislead, scenario analyses that prepare the market, and a new prudential tool. URL: https://www.finance-watch.org/wp-content/uploads/2023/10/report-finance-in-a-hot-house-world-1.pdf6) Ranger, N. A., Mahul, O., Monasterolo, I. (2022). Assessing Financial Risks from Physical Climate Shocks: A Framework for Scenario Generation. URL: https://openknowledge.worldbank.org/entities/publication/99308d14-488c-5ff1-81ca-ff5417b789787) Täger, M. & Dikau, S. (2023). Purposeful scenario analysis: A framework to guide central banks and financial supervisors in the selection
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		and design of climate scenarios. URL: https://www.lse.ac.uk/granthaminstitute/publication/purposeful-scenario-analysis-a-framework-to-guide-central-banks-and-financial-supervisors-in-the-selection-and-design-of-climate-scenarios/
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The Geneva Association	International	Climate scenario analysis is an evolving, fast moving and complex topic. In light of this, we would welcome the IAIS to conduct more engagement with the industry before finalizing the paper.
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