



Institute
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Climate Scenarios

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Climate Scenario Analysis

- Climate scenarios allow organisations to develop an understanding of various combinations of climate related events and risks, both transition and physical*.
- It helps them to understand how these combinations may affect their operations, businesses, strategies, and financial performance over time.

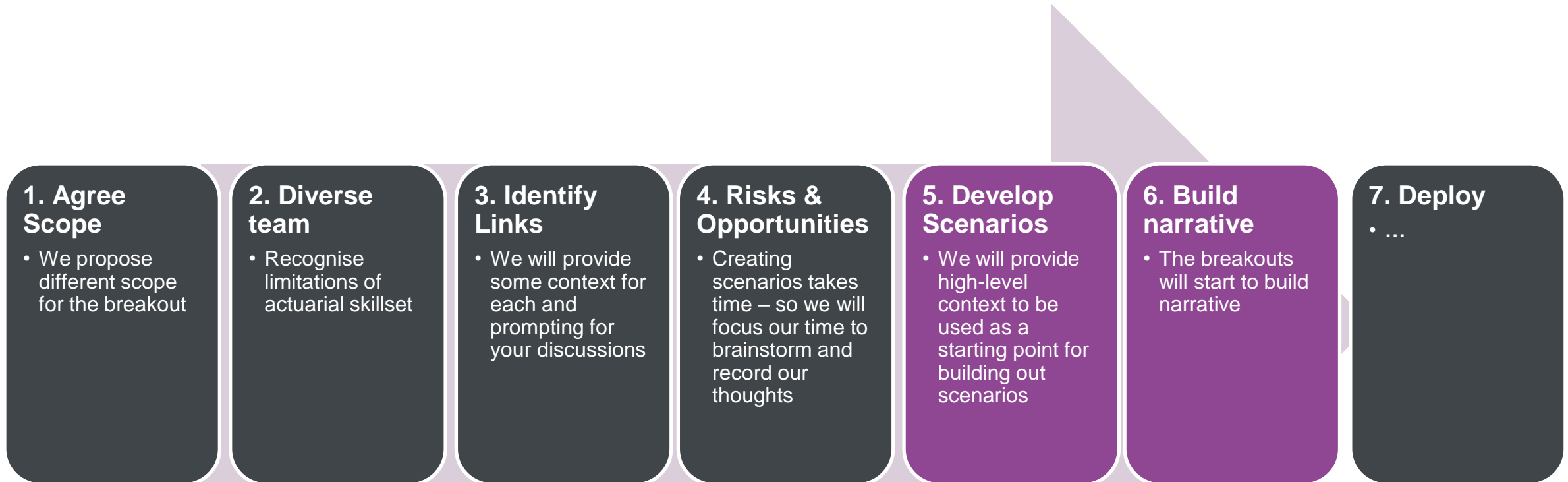
Current regulatory guidance on climate scenarios (1)

Countries/Regions	Regulatory Guidance	Description
UK	SS3/19	It sets out Prudential Regulation Authority's (PRA) expectations concerning the strategic approach firms are taking to manage the financial risks arising from climate change.
	Climate Biennial Exploratory Scenario (CBES) 2021	The PRA developed 3 scenarios designed to explore the physical and transition risks of climate change.
	General Insurance Stress Test (GIST)	It invites the largest general insurance companies to provide information about the impact of a range of stress scenarios on their business
	Realistic Disaster Scenario (RDS)	Lloyd's maintains a set of mandatory realistic disaster scenarios to stress test both individual syndicates and the market as a whole.

Current regulatory guidance on climate scenarios (2)

Countries/Regions	Regulatory Guidance	Description
European Union	EIOPA's application guidance	It provides examples using mock non-life and life companies to help undertakings design the steps for the materiality assessment and run climate change scenarios
USA	Reporting requirements for climate-related risks	The National Association of Insurance Commissioners (NAIC) has set up the Task Force to coordinate discussion and engagement on climate-related risk and resiliency issues with various stakeholders.
	Guidance for New York Domestic Insurers on Managing the Financial Risks from Climate Change	The guidance was issued by the New York Department of Financial Services which joined the Network for Greening the Financial System (NGFS).
Canada	Guideline B-15: Climate Risk Management published by Canada's Office of Superintendent of Financial Institutions	One of the guidelines is for federally regulated financial institutions (FRFIs). When selecting climate scenarios, it says they should consider industry-accepted sources.

The aim is to develop scenarios and build a narrative.



1. Agree Scope

Develop a scenario analysing the strategic risks and opportunities facing general insurers in the 2050s, following incremental action on climate change between the 2020s and 2040s. This scenario explores the consequences of delayed comprehensive action and the shifts in global risk profiles.

3. Identify Links

By 2050, the world has experienced increased frequency and severity of extreme weather events, compounded by decades of insufficient mitigation efforts. Advanced technologies, such as predictive AI and satellite monitoring provide better forecasting, but the scale of realised physical impacts puts significant strain on the insurance sector. This environment creates a dual challenge: managing escalating claims while adjusting business models for the future.

4. Risks and opportunities

The ongoing climate impacts have led to a situation where general insurers are confronted with multiple challenges:

Increased Claims: With more frequent floods, fires, and storms, the insurance industry is facing heightened loss ratios. Traditional models of underwriting are increasingly ineffective in forecasting the magnitude of risks, leading to a strain on profitability.

Market Repositioning: As extreme weather events become more frequent, insurers that have adapted to the "new normal" by investing in risk mitigation technologies or working with governments on resilience-building measures have an opportunity to dominate the market.

Systemic Risks: A key risk is the potential for systemic market failure in regions particularly vulnerable to climate change, such as coastal areas or those prone to droughts. Insurers in these areas may be forced to exit certain markets or dramatically increase premiums, creating affordability issues for policyholders.

Innovation & Collaboration: The insurers that succeed will be those that collaborate with tech firms, governments, and environmental groups to create new risk models, offering products that incentivize adaptation, such as green building incentives or flood-resistant property measures.

5. Develop scenarios

In the breakout, we would like each group to explore scenarios under different levels of adaptation and resilience building:

- Scenario 1: Fragmented Action: Climate impacts continue to worsen with only localised efforts to mitigate risks. Insurers face significant portfolio reductions in high-risk areas and the industry as a whole struggles with affordability and availability of coverage.
- Scenario 2: Coordinated Global Response: Major nations and corporations cooperate on long-term climate resilience leading to reduced risks over time. General insurers pivot towards innovative, dynamic products that emphasise prevention, rather than simply risk mitigation.
- Scenario 3: High-Impact Innovation: Technological breakthroughs in climate prediction and resilience dramatically reduce the frequency of certain catastrophic events, but the global economic disruption leads to a fundamental reshaping of the insurance market. Traditional products are replaced by parametric insurance models.

6. Build narratives

In each breakout group, we encourage you to craft a detailed narrative around your selected scenario asking yourselves:

- How does the scenario evolve through the 2030s and 2040s to impact general insurers in the 2050s?
- What opportunities exist for insurers in your scenario to innovate or reposition their portfolios?
- How do global and regional insurance markets change in response to physical risks and economic factors?

Questions

Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged. The views expressed in this presentation are those of the presenters.

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