# Climate change – Evolving risk and regulation

Guy Carpenter's Kieran Bhatia, Sam Phibbs and Katy Reyner on the need to navigate the changing regulatory landscape related to climate change

**In 2023, we have seen record-breaking temperatures, updated projections on the accelerating pace of climate change and a growing number of severe events. With the forecasted strengthening of El Niño, multiple outlooks have suggested over a 90 percent probability of 2023 becoming the warmest year on record and a 50 percent chance of meeting or beating the 1.5°C (2.7°F) above pre-industrial temperatures threshold.**

Climate change has significant impacts beyond increasing global temperature, and its effect on natural catastrophe activity can manifest in extreme events for multiple perils:

- **Tropical cyclone:** Since mid-March, sea surface temperatures (SSTs) in the North Atlantic have exceeded daily records every day, while global SSTs surpassed 21°C for the first time. Warmer SSTs mean stronger and wetter tropical cyclones are possible. Despite a strengthening El Niño (which typically supresses hurricane activity), the ongoing North Atlantic hurricane season has seen elevated activity.
- **Flood:** At the end of September, New York City and surrounding areas experienced widespread flooding: 8.65 inches of rain fell at John F Kennedy International Airport, surpassing the record for any September day. Warmer air holds more moisture, increasing the probability of storms bringing heavier precipitation.
- **Wildfire:** After experiencing its warmest May to July on record, Canada endured a record wildfire season. From 1 January to 10 September, accumulated carbon emissions from wildfires across Canada totaled approximately 400 megatons, already more than four times the previous record for an entire year. According to a recent study, climate change more than doubled the likelihood of extreme fire weather conditions in eastern Canada.

Industry loss estimates for the first half of 2023 remain well above the decadal average despite the comparatively smaller impact on reinsurers.

## Climate change disclosure

In the US, while the Securities and Exchange Commission's climate disclosure rules are finalized, the National Association of Insurance Commissioners has instituted a revised and more thorough climate change questionnaire, which is better aligned with the Task Force on Climate-related Financial Disclosures. This survey has been adopted across 16 states, accounting for more than 80 percent of gross written premium in the US. In September, the California legislature passed two climate-related bills that will impose mandatory climate-related reporting requirements for large public and private companies doing business in the state.

Challenges remain around availability of data, but increasing guidance, particularly around materiality assessments and scenario analysis, is an opportunity for the industry to develop the needed toolkit to incorporate climate change into risk management, pricing and capital decisions, and navigate the changing regulatory landscape.

## How Guy Carpenter can help

Guy Carpenter is uniquely positioned to help clients understand which perils and regions are most at risk due to climate change. Our offerings include custom views of proprietary and vendor catastrophe models, not only contemplating future projections of climate outcomes, but also assessments of where climate may already be altering the frequency and severity of outcomes.

A suite of current and future climate risk scores afford clients the ability to assess geographic accumulations of risk and influence territory and underwriting strategies. By understanding potential future outcomes of climate-induced change, we can enable clients to quantify the impacts under appropriate climate scenarios to assess the overall volatility and tail risk of their insured portfolio. Deterministic assessments available from the GC AdvantagePoint® platform complement the catastrophe model and risk score approaches, measuring where severity may ultimately cause a potential risk to policy surplus erosion.

Collectively, these techniques provide a range of outcomes that are fit for purpose in response to third-party constituents including state and federal regulatory bodies, rating agencies and reinsurers. These climate analytics can play a role to bolster holistic enterprise risk management strategies within a carrier's risk tolerance framework.

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