February 12, 2020

AIR Worldwide Testimony before California Senate Insurance Committee Informational Hearing: Wildfires and Homeowners Insurance: Availability in High Risk Communities

Chair Rubio, Members of the Committee:

I'm Roger Grenier, and I am Senior Vice President for AIR Worldwide, a major provider of catastrophe models for the insurance industry and the public sector.   I want to start by thanking you for the opportunity to speak to you today about the wildfire challenges in the State of California, and in particular why catastrophe models are an important and necessary component for assessing wildfire risk in California. Part of our goal as a company is to help society prepare for the impacts of catastrophes before they occur, and we are pleased to be part of the conversation towards developing solutions to benefit residents and businesses throughout the State.

In the few minutes I have today I'd like to briefly describe our models and the value they provide. But first, I'll provide a short history.

Prior to Hurricane Andrew in 1992, insurers made assumptions about the size of the maximum loss they could suffer in a large event. They employed rules of thumb, largely based on historical experience, and the consensus opinion was that a Category 5 Hurricane in South Florida could cause, at most, a $5B industry loss. Unfortunately, Hurricane Andrew exposed the inadequacy of that approach – after the industry suffered a $15B loss from the event, many companies were unable to pay claims. Several insurers became insolvent, precipitating an insurance crisis in the state.

Here in California, the 1994 Northridge Earthquake provided a similar wake-up call – exposing the limitations of historical data for estimating large losses and completely remaking the insurance industry in the state. Recognizing the inadequacy of relying solely on historical data, the California Earthquake Authority now relies heavily on catastrophe models in assessing risk.

Our company, founded in 1987, was the first to apply science and data to the problem – that is, to overlay the windspeeds from actual hurricanes onto the map of a city and CALCULATE the damage that could occur. Since that time, catastrophe models have become standard tools used by insurers and reinsurers to manage the financial impact of extreme events.

The fundamental problem we're solving is one of estimating loss from very low frequency, but very high severity events – the type of events that can cause a company to go insolvent and leave policy holders without protection at a time when they need it most.   The events are rare, and the underlying exposures are constantly evolving. For these events, relying on loss history, as is done in the California property insurance market, is simply not enough. When catastrophe modelling is allowed for loss estimation it can provide more temporal stability to the process, avoiding the spikes that would be observed relying solely on traditional, historical data sources.

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Catastrophe models simulate realistic catastrophe events, relying on scientific and engineering data, to develop a range of scenarios. The models offer large catalogs of simulated events; in effect, we're providing 10,000 simulations of what could happen next year. In this way, the models augment and effectively extend the available loss experience.

AIR's Wildfire model starts with an objective assessment of the landscape and propensity to burn, considering a region-specific assessment of vegetative fuels, slope, and road access, and the homes and businesses are then mapped on to this surface. The model begins by first creating an ignition, and then simulates the effects of wind and weather, fire spread, fire suppression, and the physical characteristics of the structures. It considers the impact on the fuel load from multi-year cycles of rainfall and drought, creating a catalog of events that are physically realistic and statistically consistent with the historical record. The model considers many thousands of events, including those that have not yet occurred, but could occur. In addition, the model fills a critical gap in the historical record by including events similar to events that have occurred in the past, but on TODAY's exposure. AIR serves the insurance industry and the public sector by providing realistic and objective models that enable all stakeholders to better understand and effectively manage risk from extreme events. Catastrophe models allow the market to operate efficiently by creating a common means of understanding and transferring risk.

Today, catastrophe models are used throughout the entire insurance value chain, by brokers, insurers and reinsurers, and the capital markets, with the modeled results regarded as the "currency" for catastrophe risk transfer. In a very recent and relevant example, AIR's Wildfire model was used as one input into the design of the California Wildfire Fund, recommended by the SB 901 Commission and the Governor, and later introduced by AB 1054. Estimates from the model were used along with the historical data in determining the size of the fund.

The models also provide a framework on which to measure and assess the impact of mitigation, changes to land use, and updates to building codes. Enhancing the science and the data through a process of continual improvement allows models, and the insurance industry, to evolve. This helps fulfill the industry's mission of providing financial resilience to homes, businesses and communities. A key factor in this mission is a recognition that the risk must be measured to be managed. Companies should be able to use the most relevant tools available to develop actuarially sound rates. There should be consistency between those rates and the metrics underlying risk transfer to the reinsurance and capital markets.

Currently, the State of California's insurance regulations reflect a dated understanding of analytical tools such as catastrophe models. While earthquake models can be considered in ratemaking, a positive outcome from the Northridge event, models for wildfire and other perils are currently not allowed. This introduces an inconsistency between various underwriting and rating activities of insurers and the related downstream assumption of risk by other entities.

We recommend an approach that considers the full range of risk management tools, recognizing that this can be done while still protecting consumer rights, as is the case in many other states.

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We look forward to continuing the discussion on using the best science available to assess wildfire risk. Please let us know how AIR can be a helpful resource for the State as you move forward in building a more resilient California.

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