California’s insurance sector faces significant risks from climate change. These include both the transition risks facing all financial institutions as the global economy shifts toward decarbonization, and the singular combination of physical risks–wildfire, drought, coastal hazards, extreme heat—that threaten California’s communities and businesses.

Accurately assessing these risks will be vital to ensuring the long-term viability of the insurance market in California, the availability and affordability of insurance for California residents and businesses, and the state’s physical and financial resilience in a changing climate.

A new report from CLEE explores the field of climate risk scenario analysis—a key instrument to assess financial risk in projected future scenarios—and makes recommendations for implementation by the California Department of Insurance (CDI). California Insurance Commissioner Ricardo Lara also sat down with CLEE to discuss the issue in a video interview.

In scenario analysis, financial institutions and their regulators assess risk by modeling various possible economic scenarios (representing combinations of policy and technology outcomes, for example) and how their assets would perform under those scenarios. Financial institutions, central banks, and regulators are beginning to use scenario analysis (and its related practice, stress testing) to prepare for the financial effects of climate change, with European institutions leading many initial efforts. In January 2023, the Federal Reserve announced its first-ever pilot exercise for climate risk scenario analysis for large US banks.

These practices are highly relevant for insurance companies, which are financial institutions with significant investment portfolios (including in fossil fuel-related industries) as well as providers of insurance policies that play a key role in the financial health and resilience of communities and industries. Insurers face unique financial risks from climate change due to the potential business impacts of increased claims from policyholders and reduced profitability of insurance in a shifting natural disaster landscape.

The insurance sector, however, is a relative newcomer to climate risk stress testing and scenario analysis. In 2018, CDI commissioned a first-of-its kind climate risk scenario analysis of California insurers, analyzing the investment portfolios of insurance companies operating in California and earning over $100 million annually in national premiums.

CDI asked CLEE to prepare an analysis of the state of practice in climate risk scenario analysis and offer input on how the Department should craft exercises going forward. Our new report identifies a number of key decisions for CDI and offers recommendations for initial rounds of new exercises.

Among these key decisions are whether to structure exercises as “top-down” (in which a supervisor performs the analysis without the direct involvement of financial institutions) or “bottom-up” (in which a supervisor sets out one or more scenarios and methodological rules, and financial institutions run the scenarios against their own balance sheets). Regulators must also decide which risks to assess (transition, physical, or subsets of each), what risk timeframe(s) to cover, how to share data and results, nd what policy decisions (if any) they seek to inform through the exercise.

Drawing from research on the experiences and recommendations of peer institutions, expert interviews, and a stakeholder roundtable, our report offers recommendations for CDI including the following:

- Early exercises should focus on departmental and insurer capacity-building, but the Department should quickly shift into analyses that inform policy decision-making.
- A top-down approach may be most appropriate for initial efforts, but the Department should rapidly develop limited-scope, bottom-up pilot exercises.
- The Department should explicitly structure exercises to facilitate collaboration and information-sharing with peer supervisors, other California climate policymakers, and academic institutions.
- The Department should conduct exercises on an annual or biennial basis with each iteration tackling new risk types and scenarios.
- The Department should engage state government partners such as the Governor’s Office of Planning and Research (which was the state lead for the California Climate-Related Risk Disclosure Advisory Group’s report on climate risk disclosure), the California Department of Water Resources (for flood risk), Cal Fire (for wildfire risk), and the California Coastal Commission (for sea-level rise).

As the global economy grapples with the risks and opportunities created by a warming climate, so too does California’s insurance sector. Regular and enhanced scenario analysis exercises can play a critical role in ensuring that insurers and consumers are prepared.

You can download the report and watch the interview here.