THE IMPACT OF CHANGING WILDFIRE RISK ON CALIFORNIA’S RESIDENTIAL INSURANCE MARKET

CITATION

ABSTRACT
Wildfire currently poses considerable risk to many California homeowners and residents, and climate change and population growth are expected to make matters worse. Insurance provides resources to rebuild after disaster strikes and, if priced appropriately, provides signals about what areas to avoid and what mitigation measures to adopt. However, price increases that reflect rising risks can also cause financial hardship for families. Therefore, it is critical to understand how the insurance market is currently performing with regard to wildfire risk and how climate change may affect this performance. This study uses the outputs from detailed wildfire and population models and ZIP code–level data on insurance policies to examine how risk is expected to change and what the potential implications are for residential insurance markets. We focus on two study areas—one in the Sierra foothills east of Sacramento and one in the western portion of San Bernardino County. We find that the insurance market currently faces challenges in the high-risk portions of the study areas. Insurer-initiated policy nonrenewal rates are higher in those parts of the study area with the highest wildfire risk, as are the market shares of the state’s residual insurance market and the more lightly regulated surplus lines market. As expected, premiums in the higher-risk areas are higher. Insurers interviewed for this study did not believe that the difference captures the full difference in risk. The California Department of Insurance, however, holds that insurers have not provided sufficient evidence that actual risk supports requested differentials between high- and low-risk properties. We provide estimates of how much climate change will affect premiums, the market share of the admitted insurers, and other market indicators. We find that an aggressive emission control strategy substantially reduces impacts after the middle of the 21st century. The study concludes by identifying insurance regulations (and public policies more generally) that will have an important impact on future market conditions.

HIGHLIGHTS
• The average acres burned annually in the Sierra Foothills Study Area (SFSA) is projected to double by midcentury and, under a business-as-usual greenhouse
gas (GHG) emission scenario, to double again by the end of the 21st century. An aggressive and successful GHG emission strategy stabilizes average annual acres burned in the second half of the century at midcentury levels.

• Based on the wildfire model used in this analysis, climate change is expected to have a minor impact on the average annual acres burned in the San Bernardino Study Area (SBSA). The wildfire model used in the analysis served as a common basis for all the studies that were part of California's Fourth Climate Change Assessment; however, wildfire models developed by other researchers do project that climate change will affect the SBSA. Further work in fire science is needed to reconcile these disparate findings.

• The insurance market currently faces challenges in those portions of the two study areas with high wildfire risk. The insurer-initiated policy nonrenewal rate is higher, as are the market shares of the state’s residual insurance market (the FAIR Plan) and the more lightly regulated surplus lines market. Although we did not find that take-up rate falls as structure risk increases when other factors are held constant, we did find evidence that homeowners in high-risk areas are purchasing less coverage relative to structure value and selecting higher deductibles than homeowners in low-risk ZIP codes.

• Premiums in the higher-risk areas are higher and have been growing more rapidly in recent years than those in lower-risk areas. Even so, insurers interviewed for this study believed that the difference between premiums for high- and low-risk structures still did not reflect the full difference in risk. The California Department of Insurance has approved substantial rate increases in high-risk areas; however, the department holds that insurers have not provided sufficient evidence to justify all requested differentials between high- and low-risk properties.

• In terms of financial performance, admitted insurers in the Homeowners Multiple Peril line broke even in terms of combined underwriting profit between 2001 and 2017. Results for the Fire line were better, with the combined ratio well below 100 percent over the same period. The industry was profitable when investment returns were considered; however, insurers’ experience between 2001 and 2017 illustrates how a particularly bad wildfire season can wipe out many years of underwriting profits.

• Given current insurance regulations and the behavior of insurers and policyholders, our findings indicate that climate change could have a substantial impact on the residential insurance market in some parts of the SFSA. In the ZIP codes that currently face the highest fire risk, the market share of the admitted insurers is expected to drop by 5 percentage points on average by 2055, and the rate per $1,000 of coverage in the admitted market is projected to rise by 18
percent. The coverage-to-value ratio is expected to fall by 6.5 percentage points and the deductible to increase by $121.

• Successful efforts to reduce GHG emissions will not make a great deal of difference through midcentury because of the inertia of the climate system. However, reducing emissions will substantially reduce additional impacts between 2055 and 2095. vii

• Insurance regulations will have an important impact on how climate change will affect the residential insurance market. Insurance regulatory issues include the extent to which rates reflect the full difference in fire risk across structures, whether probabilistic models of wildfire risk are allowed in the rate-approval process, and whether the net reinsurance margin is allowed as an expense in rate filings. Although there is no indication that current FAIR Plan rates are artificially low, the extent to which rates offered by the FAIR Plan keep up with the increase in risk will also be an important factor in how insurance markets respond to climate-induced changes in wildfire risk.

ACCESS
For access to the full report, please email Susan.wilhelm@energy.ca.gov

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