

# CALIFORNIA

## CLIMATE CHANGE



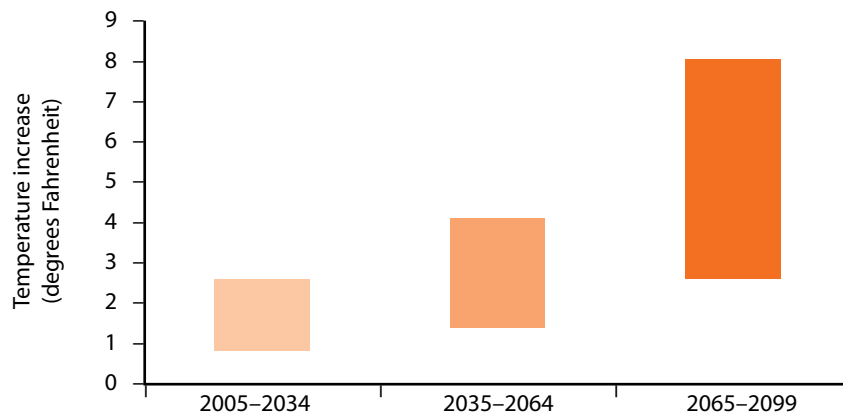
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### CLIMATE CHANGE THREATENS CALIFORNIA'S FUTURE

Increases in global emissions of greenhouse gases are leading to higher air and water temperatures as well as rising sea levels, with serious consequences for California. Air temperatures are projected to increase throughout the state over the coming century. Sea level is expected to rise 20 to 55 inches by 2100, and the frequency of extreme events such as heat waves, wildfires, floods, and droughts is expected to increase. Higher temperatures will result in more rain and less snow, diminishing the reserves of water held in the Sierra Nevada snowpack. Even if all emissions of greenhouse gases ceased today, some of these developments would be unavoidable because the climate system changes slowly.

### AIR TEMPERATURES ARE PROJECTED TO RISE IN CALIFORNIA, ESPECIALLY UNDER HIGH EMISSIONS SCENARIOS



SOURCE: D. R. Cayan, A. L. Luers, et al., "Overview of the California Climate Change Scenarios Project," *Climatic Change* 87 (2008): S1-S6.  
NOTE: Projected temperature increase relative to 1961-1990.

In the face of these threats, California has taken the lead in global efforts to reduce emissions. Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, requires the state to reduce greenhouse gas emissions to 1990 levels by 2020; this would result in emissions roughly one-third less than what would be expected under "business as usual." An executive order calls for emissions to be reduced to 80 percent below 1990 levels by 2050. Reductions of this magnitude are needed on a global scale to stabilize the earth's climate. California now faces a twofold policy challenge: finding the least expensive ways to reduce emissions and preparing for the climate changes that are expected even if emissions are successfully reduced.

California is not alone in tackling this global issue. But its actions are crucial, because they set an example for other states, regions, and the rest of the world, and others are already following its lead. To be effective, the state must continue to forge new strategies, even though the nature and timing of climate change are uncertain and global efforts to reduce emissions may or may not be successful.









