

## **New Knocks Against Ethanol**

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While promoters of ethanol sometimes plug the fuel as a panacea for climate woes and America's dependence on foreign oil, a study from Stanford University suggests ozone produced by ethanol-fueled vehicles might end up killing more people than emissions from gas vehicles. Ozone is a component of smog that's produced in a chemical reaction involving hydrocarbons and nitrogen oxide in the presence of sunlight. The gas is known to inflame lung tissue, worsen asthma, and weaken the immune system.

Led by Stanford civil and environmental engineering professor Mark Z. Jacobson, the new study used a computer simulation to compare air quality in the U.S.—and specifically, in Los Angeles—in the year 2020 under two different scenarios. In one, the vehicle fleet is fueled by traditional gasoline; in the other, it runs on 85% ethanol and 15% gasoline, a blend known as E85. According to Jacobson, this is the first such study to account for population distribution and the complex interaction of environmental factors like sunlight, clouds, and wind. Based on the simulation, he concludes that the switch to an ethanol fleet could result in a 4% increase in U.S. deaths overall, and a 9% increase in L.A.

Defenders of ethanol are quick to point out potential flaws in Jacobson's assumptions. And some environmentalists argue that ethanol, while not perfect, has an important role to play in America's green-fuel future. Jacobson favors electric vehicles recharged using wind, solar, or hydro power.