

# Debunking False Solutions

Ethanol subsidies harm environment, benefit corporate agriculture

By Sasha Lilley

**E**arlier this year, U.S. Energy Secretary Samuel W. Bodman visited agribusiness giant Archer Daniels Midland's Decatur, Illinois headquarters to tout its part in President Bush's Biofuels Initiative. The secretary posed for photos with then Archer Daniels Midland (ADM) Chair G. Allen Andreas and announced that the Department of Energy would offer up to \$160 million for the construction of three bio-refineries to expand U.S. ethanol production.

"Partnerships with industries like these will lead to new innovation and discovery that will usher in an era of reduced dependence on foreign sources of oil, while strengthening our economy at home," Secretary Bodman said from ADM's trade floor.

Given the absence of conditions imposed by the Department of Energy, the three bio-refineries could well be partially coal-powered. ADM already operates coal-fired plants at its company base in Decatur, Illinois, and Cedar Rapids, Iowa, is currently adding another coal-powered facility at its Clinton, Iowa ethanol plant and planning another coal fired plant in the town of Columbus, Nebraska.

Archer Daniels Midland is the largest U.S. producer of ethanol, which it makes by distilling corn. Ironically, it turns out that ADM's clean and green biofuels program is heavily reliant on coal-fired energy plants, one of the dirtiest forms of energy. When burned, coal emits carcinogenic pollutants and high levels of the greenhouse gases linked to global warming.

That's not all. "[Ethanol] plants themselves — not even the part producing the energy — produce a lot of air pollution," says Mike Ewall, director of the Energy Justice Network. "The EPA (the U.S. Environmental Protection Agency) has cracked down in recent years on a lot of Midwestern ethanol plants for excessive levels of carbon monoxide, methanol, toluene, and volatile organic compounds, some of which are known to cause cancer."

Given all the energy inputs needed to make it, latest estimates show that corn-based ethanol reduces

green house gas emissions by only 13 percent compared to conventional gasoline.

A single ADM corn processing plant in Clinton, Iowa, generated nearly 20,000 tons of pollutants, including sulfur dioxide, nitrogen oxides, and volatile organic compounds in 2004, according to federal records. The EPA considers an ethanol plant as a "major source" of pollution if it produces more than 100 tons of any one pollutant per year, although it has recently proposed increasing that cap to 250 tons.

Sulfur dioxide is classified by the EPA as a contributor to respiratory and heart disease and the generation of acid rain. Nitrogen oxides produce ozone and a wide variety of toxic chemicals as well as contributing to global warming, according to the EPA, while many volatile organic compounds are cancer-causing. Last year, Environmental Defense, a national environmental group, ranked the Clinton plant as the 26th largest emitter of carcinogenic compounds in the U.S.

For years, ADM promoted itself as the "supermarket to the world" on major U.S. radio and television networks like NPR, CBS, NBC, and PBS where it underwrites influential programs such as the NewsHour with Jim Lehrer. Now, as it actively promotes its ethanol business forays, ADM has rolled out its new eco-friendly slogan, "Resourceful by Nature" which "reinforces our role as an essential link between farmers and consumers."

Despite the company's attempts at green packaging, ADM is ranked as the tenth worst corporate air polluter, on the "Toxic 100" list of the



a cancer-causing gasoline additive, with ethanol. 45 states have adopted policies to encourage the production and use of the fuel. ADM has responded with plans to increase its output of ethanol by 42 percent over the next three years.

### When Corn is King

Subsidies and tax incentives might make public policy sense even when they flow into the coffers of a Fortune 500 company with mega-profits but only if corn ethanol delivers on the promise that its boosters claim: to significantly cut greenhouse emissions, protect the environment, and slow global warming.

Debate has raged for years over whether ethanol made from corn generates more energy than the amount of fossil fuel that is used to produce it. UC Berkeley's Alexander Farrell recently co-authored a comprehensive study, published in *Science*, on the energy and greenhouse gas output of various sources of ethanol. His group found that corn ethanol reduces greenhouse gases by only 13 percent, which compares unfavorably with ethanol made from vegetable cellulose such as switch grass.

Yet the enormous amounts of corn that ADM and other ethanol processors buy from Midwestern farmers wreak damage on the environment in numerous ways. Modern corn hybrids require more nitrogen fertilizers, herbicides, and insecticides than any other crop, while causing the most extensive erosion of top soil. Pesticide and fertilizer runoff from the vast expanses of corn in the U.S. prairies bleed into groundwater and rivers as far as the Gulf of Mexico. The nitrogen runoff flowing into the Mississippi River has fostered a vast bloom of dead algae in the Gulf that starves fish and other aquatic life of oxygen.

The hidden costs of corn-based ethanol thus include "the huge, monstrous costs of cleaning up polluted water in the Mississippi River drainage basin and also trying to remedy the negative effects of poisoning the Gulf of Mexico," says Tad Patzek of the University of California's Civil and Environmental Engineering department.

"These are not abstract environmental effects," Patzek asserts, "these are effects that impact the drinking water all over the Corn Belt, that impact also the poison that people ingest when they eat their food, from the various pesticides and herbicides." Corn farming substantially tops all crops in total application of pesticides according to the US Department of Agriculture, and is the crop most likely to leach pesticides into drinking water.

Atrazine, a carcinogenic herbicide used primarily in cornfields has been banned by the European Union but the US Geological Survey has found midwestern streams to contain atrazine upto 224 parts per billion and about 2,300 parts per billion in Corn Belt irrigation reservoirs – well over the EPA's 3 parts-per-billion as the maximum safe level for this carcinogen.

Then there is the question of how practical it is to replace petroleum with corn-based ethanol. "There are conflicting figures on how much land would be needed to meet all of our petroleum demand from ethanol," says Energy Justice Network's Ewall, "and those range from some portion of what we currently have as available crop land to as much as five times as the amount of crop land in the US."

"No one who's looked at this issue [from an environmental perspective] talks about using corn kernels as the only, or even major component, of the long term solution," counters Nathanael Greene, senior policy analyst with the Natural Resources Defense Council. "Everyone assumes we'll evolve the industry from its current technology to the advanced technologies."

If they do move away from corn, it will be a marked reversal of many decades of government policy, in support of Archer Daniels Midland and the company may well wonder what it's getting for its unceasingly ample gifts to both political parties. But with the "full-throated support of the Bush Administration", in the words of the Renewable Fuels Association, a corn ethanol-dominated, ADM-led trade group, that day doesn't seem to be approaching any time soon.

The Apollo Alliance  
1025 Connecticut Avenue, Suite 205  
Washington, DC. 20036  
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[www.apolloalliance.org](http://www.apolloalliance.org)

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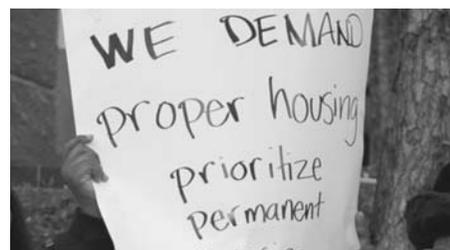
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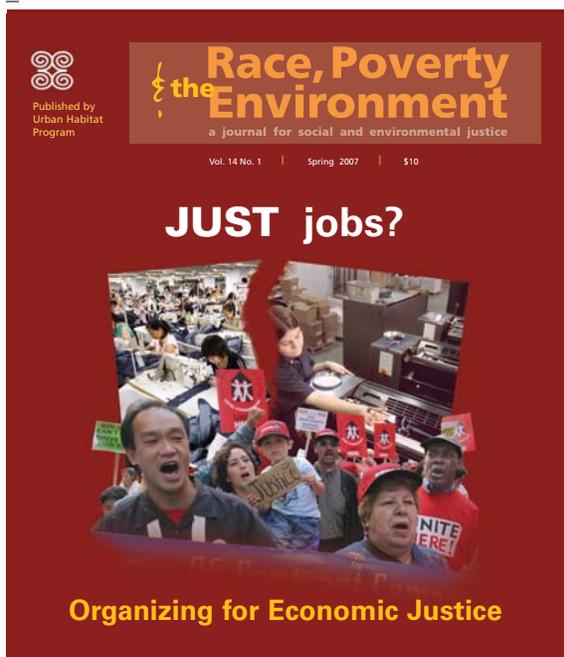
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