Summary:

California seeks to reduce its green house gas emissions (GHG) in part by increasing the use of biofuels. Approximately 95% of biofuels are corn-based ethanol, with the California Energy Commission recommending 30-60 facilities be built in California to meet the increasing call for biofuels. It is well documented, however, that corn-ethanol will cause the acceleration of climate change, increase food prices in California and worldwide, worsen worldwide famine and political instability, cause significant negative local impacts from the operation of the facilities, and act as a barrier to the technological innovation needed to address emissions from transportation fuels. Fortunately, there are promising alternatives and if we choose to focus on other paths we can, with the same investments, build a real and sustainable transportation fuels portfolio.

Burning Food For Fuel in the Media:

- ***New York Times*** (front page), – "Biofuels Deemed a Greenhouse Threat," Feb. 8, 2008 [1]
- ***LA Times***, "Food or fuel?: As global starvation worsens, the U.S. plans to devote vast amounts of grain to producing ethanol," Feb. 26, 2008 [2]
- ***Time***, "The Clean Energy Scam," Mar. 27, 2008 [3]
- ***Rolling Stone***, "The Ethanol Scam: One of America's Biggest Political Boondoggles," July 2007 [4]
- ***National Geographic***, "Green Dreams," Oct. 2007 [5]

April 2008

Biofuels: worse than doing nothing

Biofuels Accelerate Climate and Negative Land Use Conversion

- "[A]nalyses suggest that biofuels, if produced on converted land, could, for long periods of time, be much greater net emitters of greenhouse gases than the fossil fuels that they typically displace." [6]
- "[The] concern is that any small reduction in greenhouse gas emissions from fossil fuel use due to agrofuel expansion will be at the expense of large increases in greenhouse gas emissions from deforestation, from other land-use change, nitrous oxide emissions, carbon emissions from the loss of soil organic carbon, peat fires and oxidation, and potentially the loss of major carbon sinks." [7]
- "Using a worldwide agricultural model to estimate emissions from land use change, we found that corn-based ethanol, instead of producing a 20% savings, nearly doubles greenhouse emissions over 30 years and increases greenhouse gases for 167 years." [8]
- According to a University of California Berkeley memo, initial calculations including "Direct" land use change (CRP land to crops) meant corn-based ethanol is 2.4 times *worse* than gasoline. Including "Indirect" land use change (global deforestation) meant corn-based ethanol is 6 times *worse* than gasoline. [9]

Increased Food Prices

- "As fuel demand for corn increases, and soybean and wheat lands switch to corn, prices increase by 40%, 20% and 17% for corn, soybeans, and wheat respectively." [10]
- "*The Economist*'s food-price index is higher today than at any time since it was created in 1845... Even in real terms, prices have jumped by 75% since 2005... The 30m tonnes of extra maize going to ethanol this year amounts to half the fall in the world's overall grain stocks." [11]
- The top UN Food and Agriculture Organization official warned on Dec. 18, 2007 that in an "'unforeseen and unprecedented' shift, the world food supply is dwindling rapidly and food prices are soaring to historic levels." [12]

U.N. Special Rapporteur on the Right to Food calls for a 5-year moratorium on Biofuels

"The Special Rapporteur is gravely concerned that biofuels will bring hunger in their wake. The sudden, ill-conceived, rush to convert food — such as maize, wheat, sugar and palm oil — into fuels is a recipe for disaster. There are serious risks of creating a battle between food and fuel that will leave the poor and hungry in developing countries at the mercy of rapidly rising prices for food, land and water... The close links between hunger and conflict have often been exacerbated when food and famine have also been used as weapons of war, as in many African countries, against certain groups or communities." [13]

"By 2025 rising food prices caused by the demand for biofuels could cause as many as 600 million more people to go hungry worldwide." [14]

For further information and links to all citied articles visit, **http://www.ejmatters.org/**

Local Impacts

- The EPA concluded in April 2007 that "ozone levels generally increase with increased ethanol use." [15] – a leading indicator of smog and major cause of illness.
- A Pacific Ethanol facility currently planned for Madera, CA, will emit nearly 132,000 lbs per year of criteria pollutants, including more than 28,000 lbs per year of Particulate Matter, having a direct impact on the local community. [16]
- Biorefineries can pose new and potentially significant sources of water and air pollution. In Iowa, a newspaper identified 394 environmental violations associated with biorefineries over a 6 years period. [17]
- Known increase of food prices have a disproportionate impact on low-income people—negatively impacting food security and increasing hunger.

"Rushing to turn food crops — maize, wheat, sugar, palm oil — into fuel for cars, without first examining the impact on global hunger is a recipe for disaster. It is estimated that to fill one car tank with biofuel (about 50 litres) would require about 200 kg of maize — enough to feed one person for one year."

—U.N. Special Rapporteur on the right to food, Jean Ziegler

Technological Innovation

- Subsidies to ethanol serve to suppress technological innovation - Ethanol propped up by more than 200 tax breaks and subsidies worth > $5.5 billion a year. [18]
- Study by the International Institute for Sustainable Development found that ethanol subsidies amount to as much as $1.38 per gallon -- about 1/2 of ethanol's wholesale market price. [19]
- Other lower carbon fuel alternatives cannot compete – making alternatives cheaper than gas being the biggest barrier for most start-up fuels. [20]
- Cellulosic sources, while preferable to agrofuels, still pose significant risks. "Biofuels from switchgrass, if grown on U.S. corn lands, increase emissions by 50%. This result raises concerns about large biofuel mandates..." [21]

Transportation Sector Alternatives

- Plug-in hybrids from renewable solar and wind, Public Transit, and Fuel efficiency standards – (long-term)
- Zero-input sources (e.g. algae and compressed air), and recycled vegetable oil (interim)

Endnotes:

[1] Rosenthal, Elizabeth, "Biofuels deemed a greenhouse threat," *New York Times*, Feb. 8, 2008, http://www.nytimes.com/2008/02/08/science/earth/08wbiofuels.html?pagewanted=1&_r=1&hp. [2] *LA Times*, "Food or fuel?: As global starvation worsens, the U.S. plans to devote vast amounts of grain to producing ethanol," Feb. 26, 2008, http://www.latimes.com/news/printedition/asection/la-ed-food26feb26,1,5542093.story. [3] *Time*, "The Clean Energy Scam," Mar. 27, 2008, http://www.time.com/time/magazine/article/0,9171,1725975,00.html. [4] Goodell, Jeff, "The Ethanol Scam: One of America's Biggest Political Boondoggles," *Rolling Stone*, July 2007, http://www.rollingstone.com/politics/story/15635751/ethanol_scam_ethanol_hurts_the_environment_and_is_one_of_americas_biggest_political_boondoggles/1. [5] Bourne, Joel K., Jr., "Green Dreams," *National Geographic*, Oct. 2007, http://magma.nationalgeographic.com/ngm/2007-10/biofuels/biofuels.html. [6] Fargione, Joseph, The Nature Conservancy, et. al., "Land Clearing and the Biofuel Carbon Debt," *Sciencexpress*, Nov. 8, 2007; accepted Jan. 24, 2008; Published online Feb. 7, 2008; 10.1126/science.1152747, www.sciencexpress.org. [7] Boswell, Dr. Andrew; Ernsting, Almuth; Rughani, Deepak, "Agrofuels threaten to accelerate global warming," Biofuelwatch, Updated Dec. 2007, *UNFCCC, Bali version*, http://www.biofuelwatch.org.uk/docs/biofuels-accelerate-climate-change.pdf. [8] Searchinger, Timothy, et. al., Princeton University, "Use of U.S. Croplands for Biofuels Increases Greenhouse Gases Through Emissions from Land Use Change," *Sciencexpress*, Feb. 7, 2008, www.sciencexpress.org. [9] O'Hare, Michael, "Greenhouse Gas Emissions From Indirect Land Use Change," presentation at CARB Low-Carbon-Fuel-Standard Workgroup 3, Jan. 17, 2008, http://www.arb.ca.gov/fuels/lcfs/011708UCBLUCB&W.pdf. [10] Searchinger, 2008. [11] *The Economist*, "The End of Cheap Food," Dec. 6, 2007, http://www.economist.com/opinion/displaystory.cfm?story_id=10252015. [12] Rosenthal, Elisabeth, "World food stocks dwindling rapidly, UN warns," *International Herald Tribune*, Dec. 18, 2007, http://www.iht.com/articles/2007/12/17/europe/food.php. [13] Ziegler, Jean, Report of the U.N. Special Rapporteur on the right to food to the U.N. General Assembly, p. 8-16, http://www.righttofood.org/A62289.pdf. [14] Goodell, 2007. [15] Romm, Joseph, "The fuel on the hill," Dec. 20, 2007, http://www.salon.com/news/feature/2007/12/20/biofuel/print.html, *citing*, EPA, "Regulatory Impact Analysis: Renewable Fuel Standard Program," Assessment and Standards Division, Office of Transportation and Air Quality, Apr. 2007, http://www.epa.gov/otaq/renewablefuels/420r07004chap5.pdf. [16] San Joaquin Valley Unified Air Pollution Control District, "Initial Study/ Proposed Negative Declaration—Pacific Ethanol Madera, LLC," Jul. 13, 2006, http://www.valleyair.org/notices/Docs/7-13-06/IS-NegDecPacific%20Ethanol.pdf. [17] Widenoja, Raya, "Destination Iowa: Getting to a Sustainable Biofuels Future," Worldwatch Institute, Oct. 2007, http://www.sierraclub.org/energy/biofuels/iowa/IowaBiofuelsReport.pdf. [18] *See*, Goodell, 2007. [19] Goodell, 2007. [20] *See e.g.*, Bourne, 2007. [21] Searchinger, 2008.

CERA
California Environmental Rights Alliance

Tel: 510-832-3025
Fax: 866-442-7905
E-mail: naomik@envirorights.org