

Low-Carbon-Fuel-Standard (LCFS) & Environmental Justice (EJ)

Potential AB32 Statutory violations

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AB32 & LCFS

- LCFS must satisfy all of the statutory requirements under AB32
 - Early Action Measure (EAM)
 - CARB Staff initial recommendation to allow export of LCFS credits to the broader AB32 framework.
 - Recommendation 16 from the UC Berkeley Policy report - “The design of both the LCFS and AB32 polices must be coordinated and it is not possible to specify one without the other.”



Potential AB32 Statutory Violations

1. Criteria & toxic co-pollutants from Fuel Blends

- § 38562(b)(4) – must ensure that activities undertaken do not interfere with state and federal efforts to reduce toxic air contaminant emissions
- § 38562(b)(6) – requires the ARB to consider “overall societal benefits, including reductions in other air pollutants.”
- § 38570(b)(2) – requires the ARB to “Design any market-based compliance mechanisms to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants.”

2. Biorefineries

- § 38570(b)(1) - under any market-based compliance mechanism the State Board shall “consider the potential for direct, indirect, and cumulative emission impacts from these mechanisms including localized impacts in communities that are already adversely impacted by air pollution.”

3. Food Insecurity

- § 38562(b)(2) – must ensure that activities undertaken do not disproportionately impact low-income communities

4. “Hot-Spots”

- § § 38562(b)(2)(4)(6); 38570(b)(1)(2)



1. Criteria & Toxic Co-pollutants from Fuel Blends

- **Additional research** - needs to be conducted on the various fuel type varieties and blends in order to ensure no increases in criteria & toxic co-pollutants:
 - E.g. “[e]quivalent CO₂ emissions of particulate black carbon (BC), the second-leading cause of global warming. BC has a global-warming potential of 90-190 times that of carbon dioxide.”
- * **Agrofuels**
 - i.e. fuels derived from large-scale agricultural production
 - Focus on corn-based ethanol because 95% of bioethanol is made from corn in the U.S.
- **Example – corn-based Ethanol:**
 - The EPA concluded in April 2007 that “ozone levels generally increase with increased ethanol use.”
 - Initial study on E85 suggests that E85 fuel “will increase atmospheric levels of ozone and PAN, leading indicators of photochemical smog, in the Los Angeles basin.
 - “In [a] 2020 Case-1 scenario, E85 was calculated to increase ozone-related mortality by 120 deaths/yr (with a range of 47-140/yr) in LA and 185 deaths/yr (72-216/yr) in the U.S. ... E85 also increased hospitalization by about 650 and 990 in LA and the U.S., respectively, and asthma-related emergency-room visits by about 770 and 1200 in LA and the U.S., respectively.”



2. Biorefineries

Increased siting of Biorefineries:

- 10 biorefineries are proposed in CA (2 already in operation) - typically produce 50 million gallons of ethanol each per year.
- The CEC recommended that at least 30-60 bioethanol plants be constructed.

Biorefineries pose new and potentially significant sources of water and air pollution:

- In Iowa, newspaper identified 394 environmental violations associated with biorefineries over 6 years.
- Increased transportation and processing pollution from biorefineries from rise in ethanol production. 68 million gallons last year to as much as 364 million gallons per year if 10 additional refineries are built.

Potential Disproportionate Impacts:

- Example:
 - Kern County currently processing permits for 3 corn ethanol plants, 2 in Wasco and 1 at Famoso
 - 2 ethanol plants being built just north of Kern County in Pixley and Hanford
- Direct/ Indirect Impacts:
 - Increased pollution from processing, exacerbated water shortages
 - Increased truck and rail transportation fueled by toxic-emitting coal and diesel - 95% of corn shipped from Midwest
- Cumulative impacts:
 - a large portion of the state's oil production
 - 100's of daily truck trips bringing sludge and garbage from the South Coast Region to 3 different dump sites in Kern County
 - floods of extra traffic from Port of Oakland and LA Ports from a bi-modal transfer station and International Trade and Technology Center constructed as an inland port.



3. Food Insecurity

- CARB is statutorily required not to disproportionately impact low-income communities. § 38562(b)(2)
- 4,706,130 people in California were considered to be in poverty in 2004, while CA ranked as the 15th worst state for food insecurity.
- When biofuel production drives up food commodity prices food access is compromised for low-income food purchasers.



3. Food Insecurity cont.

The Rising Price of Corn

- Bioethanol production - 3.5% of national gasoline consumption, but consumes 20% of the entire U.S. corn crop.
- This year biofuels will take 1/3 of America's (record) maize harvest.
- Price of corn has doubled in last 2 years - from about \$2 a bushel in 2005-06 to \$4 a bushel several times in early 2007, and recently, to \$5/ bushel.
- Result - price of white corn in Guatemala rose from U.S. \$180 to \$320 per ton = 78% increase in 3 months
- Triggered food riots in Mexico after the price of maize tortillas rose by over 400%
- Estimated that prices will continue to rise dramatically if production of biofuels increases - causing 20% rise in the international price of maize between now and 2010, and a 41% rise by 2020.

Rising Prices of other food crops

- The U.S. Department of Agriculture documented that farmers have shifted from growing other crops to corn, creating a short supply of food crops and causing other crop prices to increase as well.
- The top FAO official of the UN warned as recently as December 18, 2007 that in an “unforeseen and unprecedented’ shift, the world food supply is dwindling rapidly and food prices are soaring to historic levels.”
- *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 FAO's food price index rose more than 40% this year, compared with 9% the year before, while the total cost of foodstuffs imported by the neediest countries rose 25%.
- Price increases have already occurred in the following major biofuel feedstock markets: sugar, maize, rapeseed oil, palm oil, and soybean.



Worldwide Famine

Rapid diversion of America's corn crop toward the bioethanol industry has raised corn prices worldwide and reduced U.S. corn exports, which provides 2/3 of all global corn exports.

“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.” - Jean Ziegler, Special Rapporteur

U.N. Special Rapporteur on the Right to Food – call to the U.N. General Assembly for a 5-year moratorium on Agrofuels:

- By 2025 rising food prices caused by the demand for biofuels could cause as many as 600 million *more* people to go hungry worldwide.
- Hunger claims up to 25,000 lives every day
- Meaning that more than 1.2 billion people would be suffering from hunger by 2025 with expected biofuel expansion.
- Estimates that the number of people suffering from undernourishment would increase by 16 million people for each % point increase in the real price of staple food.
- See full report at, <http://www.righttofood.org/A62289.pdf>



Other consequences of famine

“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.” - Jean Ziegler, Special Rapporteur

- Most of the plants used for biofuels are food products and form the basic staple foods of millions of people in the poorest regions of the world where food security is already seriously in peril.
- In the poorest regions of sub-Saharan Africa, Asia and Latin America, the price of manioc could rise by 33% and up to 135% by 2020.
- The diversion of maize into fuel will have huge impact on the prices & availability of global food aid.
- According to the FAO, 34 countries faced food crises in 2007 - majority in sub-Saharan Africa, where millions regularly face hunger and famine.
- 12 African nations joined Senegal in 2006 in forming the Pan-African Non-Petroleum Producers Association, aimed at developing a robust biofuels industry in Africa.



4. LCFS – contribution to “Hot-Spots”

- What is a “Hot-Spot”?

- Pollution trading “enables polluters to avoid emission reductions, or even increase emissions, at one location by purchasing credits earned elsewhere.”
- Emissions “trading programs can exchange small reductions in widespread pollution for increased exposure to concentrated, and often more toxic, pollution in the neighborhoods surrounding large industrial facilities.”

- Carbon Trading Hot-spots

- Carbon may be global, but its co-pollutants are local
- The co-pollutants associated with that emission source may also persist and concentrate around that polluter

- Potential Hot-spots from LCFS:

- Initial Staff recommendation to allow LCFS credits to be exported to larger AB32 (presumably) cap&trade program
- Then regulated stationary source entities can purchase LCFS credits, enabling them to concentrate pollution at stationary sources disproportionately in low-income and communities of color

