April 21, 2009

Mary Nichols, Chairman
James Goldstene, Executive Officer
California Air Resources Board
1001 "I" Street
P.O. Box 2815
Sacramento, CA 95812

RE: AB32 Environmental Justice Advisory Committee recommendations on Low-Carbon-Fuel-Standard.

Dear Chairman Nichols and Mr. Goldstene:

This letter outlines the recommendations and comments of the AB32 Environmental Justice Advisory Committee ("EJAC") on the implementation of the low-carbon-fuel-standard (LCFS), established pursuant to the Global Warming Solutions Act of 2006 and Executive Order S-1-07. Given the dangerous social ramifications from turning food into fuel, the great uncertainties in accounting for land use change and other greenhouse gas (GHG) emissions under lifecycle analysis models, and initial studies that indicate biofuels may actually accelerate global warming, the EJAC originally recommended that the ARB Board *not* approve the LCFS as an Early Action Measure.[1] We do not believe that the lifecycle analysis issues have been resolved with the requisite level of certainty with which AB32 requires emission reductions to be "real, permanent, quantifiable, verifiable, and enforceable" under § 38562(d)(1).[2]

[1] See, AB32 EJAC, "Recommendations on Early Action Measures," May 30, 2007, http://www.arb.ca.gov/cc/ejac/ghg_eams_finalcommitteerec.pdf

[2] As an example of the ARB's incomplete lifecycle analysis, ARB staff chose to use the "annualized" method to account for GHG emissions that occur over time such as land use change from biofuel production. See, ISOR, IV-27. Even though the Staff Report knows that the GHG emissions happen over a period of years where "larger emissions occur during the first few years, followed by declining releases," IV-21, ARB staff chose the "annualization" method because it "is the simplest to apply: it does not depend upon the development of an emissions time profile." Id. at IV-26. The Staff Report states that "Staff will continue to analyze the FWP method, however, and may reconsider this decision after a more thorough analysis has been completed." ISOR, IV-26. Therefore, current analysis of GHG emissions from land use change is incomplete and the ARB Board should not approve the proposed "default Lookup Table" when the chosen time accounting method knowingly underestimates actual emissions.

The choice of which time accounting method to use is critical considering that Table IV-7 reflects a pivotal range of land use change carbon intensity values based solely upon this factor. If Staff used the Fuel Warming Potential method over the same covered 30-year period as the annualization method, this factor alone would increase all but one of the proposed carbon intensity values for corn-based ethanol as worse than the baseline for gasoline on the default Lookup Table. The Staff Report recognizes that the **"**carbon intensity values represent the currency upon which the LCFS is based**."** ES-13. As such, the "default Lookup Table" will exponentially help guide investment decisions towards certain fuels as "ARB seeks to establish a fuel carbon regulatory framework that is durable enough to be exported to other jurisdictions." ES-29.

In addition, the proposed LCFS regulation violates the underlying AB32 statute requiring no regressive or disproportionate impacts upon low-income and traditionally overburdened communities, as outlined in this letter. We have raised these issues repeatedly for ARB staff throughout the development of the LCFS and the AB32 Scoping Plan.[3] In light of ARB staff's failures to meet AB32 statutory requirements, we strongly recommend that the Governing Board of the California Air Resources Board not adopt the LCFS regulation at this time. The following is an executive summary of our recommendations, followed by individual explanations of issues raising concern for environmental justice communities throughout California.

Executive Summary

The proposed LCFS regulation will disproportionately impact low-income and traditionally overburdened communities in the following ways: 1) the siting of biorefineries will disproportionately impact communities already adversely impacted by air pollution. ARB staff did not address several potentially significant direct, localized, and cumulative impacts from biorefineries. 2) The siting of carbon capture & sequestration (CCS) technologies may disproportionately impact low-income or traditionally overburdened communities, while CCS incentivization may allow dirtier crudes into the market that will increase toxic and criteria pollutant emissions. We recommend that ARB thoroughly analyze the full lifecycle for each individual grade of feedstock including all dirtier crudes, and that the LCFS should not give any credit for use of CCS technologies. 3) ARB staff cannot claim that there will be no increase in toxic and criteria pollutant emissions as statutorily required because their analysis and testing is incomplete. We recommend that the ARB should delay adoption of the LCFS until 2015 or ARB staff can guarantee that there will be no disproportionate impacts on low-income communities and all analyses are complete. 4) Proposals to use municipal waste as a fuel threaten to increase toxics, criteria, and other pollutants. 5) A credit trading program will create disproportionate impacts in low-income and communities of color by allowing the export of LCFS credits to potentially create "hot-spots." We recommend that the LCFS should be an entity-specific standard – not market based –with no default averaging of fuel values. 6) The promotion of biofuels made from food crops disproportionately impacts low-income communities and endangers food security. Therefore, we recommend that the ARB should exclude agrofuels from the LCFS – all food crops and corn-based ethanol in particular. Finally, in recognition that "maximizing technological feasibility" and "cost-effectiveness" requires

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Considering that ARB staff is "committed to ensuring that all relevant inputs, factors, etc. necessary to compute the carbon intensities of the recommended pathways have been locked into the model and are invariant," IV-14, and that potentially, after adoption the proposed "default Lookup Table" could remain invariant until the first proposed review of the LCFS in 2012, ES-21, it is imperative that ARB completes every aspect of its lifecycle analysis before Board approval that the carbon intensity values represent real reductions. Although under the proposed regulation, "the Executive Officer may approve new or modified pathways… in response to public comments or staff-identified need," IV-5, fluctuating carbon intensity values risks significant stranded investments while even marginally-divergent carbon intensity values can abnegate any purported climate benefit for a particular fuel type. At the March 27, 2009 LCFS workshop, ARB staff stated that they expect that all of the analysis and reports will be finished by 2011 when the requirement takes effect. Because the analysis and reports are incomplete at this time, the LCFS regulation is not ripe for adoption by the ARB Board.

[3] See, e.g., Presentation on "Low-Carbon-Fuel-Standard (LCFS) & Environmental Justice (EJ): Potential AB32 Statutory Violations," AB32 Environmental Justice Advisory Committee meeting, Jan. 28, 2008, http://www.arb.ca.gov/cc/ejac/meetings/12808/lcfsandej_1_28_08.pdf

guidance, specifications, and coordination, we recommend that the ARB should promote proven zero-carbon alternatives. If the ARB Board does approve of the LCFS regulation at this time, we recommend adding a minimum 20% GHG savings requirement for any fuel used to comply.

The Siting of Biorefineries Disproportionately Impacts Communities Already Adversely Impacted by Air Pollution

As a measure under the AB32 framework, the LCFS must ensure that activities undertaken do not disproportionately impact low-income communities under § 38562(b)(2). In addition, § 38570(b)(1) requires that 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."

The "ARB Staff Report: Initial Statement of Reasons" (ISOR) identifies that to "meet the proposed LCFS and the federal RFS2, new biofuel production facilities will likely be built in California. Staff estimates a total of 30 facilities producing corn ethanol (6), cellulosic ethanol (18), and biodiesel (6) could be operational by 2020 based on an assessment of the availability of feedstock material."[4] Executive Order S-06-06 (2006) established specific targets for CA to produce 20% of its biofuels by 2010, 40% by 2020, and 75% by 2050.[5] "If these goals are met, they would ensure that a significant portion of the biofuels used in the LCFS are produced in California,"[6] and a massive build-up of biorefineries across the State particularly in the Imperial and Central Valleys.

Although the ARB staff purport to not be "picking fuel winners and losers" the ISOR recognizes that the "carbon intensity values represent the currency" in which the LCFS credit trading program is based.[7] As such, the "default Lookup Table" will help guide or strand investment decisions towards certain fuels as it is sporadically updated with new or modified values at the Executive Officer's (new & novel) discretion that the proposed regulation seeks to grant him.[8] In recognition of this dynamic, ARB's proposed "default Lookup Table" incentivizes corn-based ethanol well beyond the first 3-5 years of the LCFS that the ARB expects it to be the "vast majority of ethanol used."[9] The proposed default value for the proposed new pathway "California Low CI Ethanol" is below the comparable baseline for gasoline with a 10% reduction required in 2020. In effect, an entity could meet the LCFS using this new "best practices" corn blend up until the expired term of the regulation, and the regulation would not force any significant innovation to truly low or zero-carbon sources because no advanced biofuel pathways are proposed for approval at this time and may not be proposed until they become commercially viable. In the near-term the absence of appropriate vehicle, fuel transport, or distribution systems for electricity or other truly low-carbon alternatives will incentivize the food-crop biofuel options.

[4] California Air Resources Board, "Proposed Regulation to Implement the Low Carbon Fuel Standard," (ISOR) Vol. 1, p. VII-2, May 5, 2009, http://www.arb.ca.gov/fuels/lcfs/030409lcfs_isor_vol1.pdf
[5] ISOR, II-3.
[6] ISOR, II-3.
[7] ES-13.
[8] See e.g., ISOR, V-25.
[9] ISOR, VI-2.

However, because "California Low CI Ethanol," "Sugarcane Ethanol (Brazil)," "Biodiesel-Soybeans," and "Biodiesel or Renewable Diesel," all have proposed values less than the 2020 carbon intensity baseline for gasoline, they become the default "winners" long-term as well because they will have been already established and want to avoid future possible prohibitions, such as enforceable sustainability criteria ARB staff alleges they will develop in 2 years. Because corn is the overwhelming biofuel feedstock used in the U.S.,[10] one fuel provider commented at the March 27, 2009 workshop that the LCFS is just looking like a corn mandate. Because "Midwestern Average Corn Ethanol" was assigned a value greater-than the baseline gasoline, the proposed "default Lookup Table" will lead to the direct incentivization of siting biorefineries in California.

The ISOR correctly identifies that the "federal RFS2 and the proposed LCFS regulation will substantially increase demand for biofuels in California. Therefore, there may be incentives for bringing some of the existing and permitted corn ethanol facilities back on line, as well as incentives for constructing other biofuel facilities,"[11] while "some of these facilities may be proposed for construction in low-income communities."[12] The LCFS is a credit trading market-based mechanism requiring the ARB Board consider direct, indirect, and cumulative emission impacts from these mechanisms including localized impacts in communities that are already adversely impacted by air pollution.

ARB has not addressed several potentially significant direct, localized, and cumulative impacts from biorefineries:

- Localized diesel PM impacts
- Localized facility emissions impacts
- How reductions in statewide motor vehicle emissions "offset" major criteria pollutant emissions associated with the additional biorefinery truck trips when the majority of biorefineries will be sited near agricultural land,[13] such as the Central Valley,[14] creating disproportionate impact in already adversely impacted communities
- According to a USDA transportation analysis,[15] a truck can typically transport 25 tons of dried distillers' grains. This means that it would take a minimum of 6,460 heavy duty diesel truck trips per year (18 trips per day) to remove dried distillers' grains from the ethanol plant. California plants will be producing these as wet grains which are heavier and will require more truck trips.
- The USDA analysis also indicates that in order to move the required corn to the plant nearly 5,430 rail cars (3500lbs/rail car) would be required to move the 19 million bushels. This is achieved using unit trains consisting of 85-100 cars. Thus there would be 54-63 train visits to the plant each year.

[10] We focus on corn-based ethanol because currently "corn is the primary feedstock for ethanol production in the United States. Studies indicate that approximately 98 percent of current ethanol production in the United States uses corn…" ISOR, III-2.
[11] VII-9.
[12] ISOR, ES-33.
[13] "Production facilities would be located in close proximity to local feedstocks… Biodiesel production plants also tend to be located close to their feedstocks and
secondarily close to rail yards or freeways for distribution to retail sites. Ethanol
facilities tend to be located near rail or truck terminals." VII-9.
[14] Table VII-7 depicts ARB staff's projection of where biorefineries could be sited in 2020, where the overwhelming majority would be in the San Joaquin Valley, which is tied for the worst air in California.
[15] U.S. Department of Agriculture, Agricultural Marketing Service, Transportation and Marketing Programs Transportation Services Branch, September 2007. Ethanol Transportation Backgrounder: Expansion of U.S. Corn-based Ethanol from the Agricultural Transportation Perspective.

- The 50 million gallons of ethanol would require 1,700 rail tanker cars (17-20 unit trains at 29,400 gal/rail car) or 6,250 heavy duty tanker trucks (8000 gal/truck) or an average of 17 truck trips per day to move the fuel to distribution terminals.
- For purposes of the Air Quality Analysis ARB assumed that the facility emissions were offset.[16] Emissions from biofuel facilities could come from the facilities themselves and associated truck trips. Staff assumes the in state biofuel facilities would have no facility emissions, because such emissions are required to be offset as a condition of permitting.[17]

Threats to the water supply cannot be "offset"

Water availability, use, and shortage is a considerable factor and limitation on agricultural biofuel production to be evaluated in a fuel's lifecycle analysis,[18] particularly considering the great regional differences of water supply, increased demand for irrigation with expanded bioethanol production, competing residential, industrial and other agricultural uses as population grows, and droughts already exacerbated by global warming. All of these factors are quantifiable, and should be thoroughly addressed and examined before implementation of the LCFS:

- Need to factor in energy required to move water around to process at biorefinery. This could cause significant increases in emissions when considering that current generation demonstration cellulosic ethanol plants use about 9 gallons of water to produce 1 gallon of ethanol.
- Threats to the water supply: According to a 2008 report by the National Academy of Sciences[19] the most modern ethanol plants use slightly less than 4 gallons of water to produce 1 gallon of ethanol. The National Academy study indicates that in California it takes more than 4,000 gallons of irrigated water to produce 1 bushel of corn/maize.
- If California corn were to be used to make California ethanol it would take nearly 1500-2000 gallons of water to make 1 gallon of home-grown California ethanol.
- If biofuel feedstock production competes for water supplies, it could make water less readily available for household use, threatening the health status and thus the food security status of affected individuals.[20]
- "With the exception of wastewater from pyrolysis operations that may be highly toxic, most wastewater discharges from the proposed LCFS facilities are not expected to be "toxic" per se, but may be high in salinity and BOD and therefore prohibited from discharge to land or water. In some cases the limitations on water discharge from production facilities may limit the development of the LCFS options in California."[21] "Not expected to" means that ARB has not completed the requisite analysis, and the LCFS is not ripe for approval.
- "Current state-of-the-art dry milling ethanol plants generate minimal waste. Much of the material resulting from ethanol production is actually co-product that can be used for other purposes. For example, distillers grains (DGs), sometimes called mash, and syrup which is called evaporated thin stillage can be mixed and used for feed. Any waste materials (e.g., waste hydraulic oil) that is generated would require appropriate disposal if the materials cannot be reused or reprocessed. The production of biodiesel uses sodium hydroxide, hexane, sulfuric acid, and methanol. These will be present in any waste generated. Glycerol is a co-product that contains unused catalyst, salt, water, methanol, and soaps, and may be recycled as it has economic value. Stearates are likely generated during the esterification process as well. Hazardous waste materials that cannot be reused or reprocessed would require appropriate disposal."[22]

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[16] VII-13.
[17] VII-21.
[18] *See*, UN Energy, *Sustainable Bioenergy: A Framework for Decision Makers*, p. 47, http://esa.un.org/un-energy/Publications.htm
[19] National Academy of Sciences, 2008. Water Implications of Biofuels Production in the United States.
[20] UN Energy, p. 33; *see also, Water Implications of Biofuels Production in the United States***,** Committee on Water Implications of Biofuels Production in the United States, National Research Council, http://www.nap.edu/catalog/12039.html
[21] VII-24.
[22] VII-29.

- "The operation of biofuel facilities will involve the transportation of hazardous materials that could be released on roadways. These materials could include ethanol, biodiesel, unleaded gasoline, sulfuric acid, aqueous ammonia, and urea. Although these materials are currently carried on roadways, there will be an increase in the use and transportation of these materials. There should be no impact to public or the environment through the routine transport, use, or disposal of hazardous materials. The biofuel facility operators will be expected [sic] eliminate any significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment."[23]

Biorefineries Create Disproportionate Public Health Risks in Overburdened Communities

ARB's public health analysis concluded the following, showing a disproportionate impact on the areas surrounding biorefineries.

- "A health risk assessment was conducted to estimate the potential cancer risk associated with newly established biorefineries based on the facility specific emission inventory and air dispersion modeling predictions. The estimated potential cancer risk levels are associated with onsite diesel PM emissions from three co-located prototype biorefinery facilities. **The area with greatest impact was estimated to be the area surrounding the facility fence lines with a potential cancer risk of over 0.4 chances in a million.** The health risk assessment also examined combined onsite and offsite emissions of the three prototype biofuel facilities. The area with the greatest impact was estimated with a potential cancer risk of about five chances in a million. Staff also quantified seven non-cancer health impacts associated with the change in exposure to PM2.5 emissions due to the possible construction and operation of 24 new biofacilities in California. **The analysis shows that the statewide health impacts of the emissions associated with these facilities are approximately 24 premature deaths; 8 hospital admissions; and 367 cases of asthma, acute bronchitis and other lower respiratory symptoms** [emphasis added]."[24]
- "Staff also estimated the health impact associated with the combined onsite and offsite emissions of the three prototype biofuel facilities. The area with the greatest impact has an estimated potential cancer risk of over 5 chances in a million."[25]

ARB Did Not Evaluate Cumulative Impacts around Biorefineries

§ 38570(b)(1) requires that 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." The ISOR explains that ARB staff did not do a cumulative impacts analysis by ignoring the law and instead deferring it to as "the Scoping Plan is implemented and specific measures are developed, ARB and other implementing agencies will also conduct further analyses, including cumulative and multi-media impacts."[26] The statute is clear that each and every proposed market-based compliance mechanism (note no plural) requires consideration of 1) direct, 2) indirect, and 3) cumulative emission impacts. ARB staff failed to do a cumulative emission impacts analysis of the LCFS, as required by law. As a result, the siting of biorefineries across California will likely occur in low-income communities causing disproportionate impacts prohibited by the AB32 statute. For this reason alone, the proposed LCFS regulation will fail as a matter of law.

These biorefineries will increase pollution from processing, exacerbate water shortages, and increase truck and rail transportation fueled by toxic-emitting coal and diesel, where Southern

[23] VII-30.
[24] ISOR, ES-25.
[25] VII-22.
[26] VII-35.

CA and the San Joaquin Valley already compete for the worst air in the nation.[27] In the San Joaquin Valley, greater than 95% of the corn processed at biorefinery plants will be grown in the Midwest and transported by rail to the San Joaquin Valley. Kern County already bears a disproportionate burden of air pollution from numerous sources. Residents already live with pollution from a large portion of the state's oil production, hundreds of daily truck trips bringing sludge and garbage from the South Coast Region to 3 different dump sites in Kern County, and soon, floods of extra traffic relieving the Port of Oakland and LA Ports once a huge bi-modal transfer station and International Trade and Technology Center is constructed as an inland port. These cumulative impacts must be weighed when promulgating a policy that will directly encourage and incent the siting of additional sources of air pollution, particularly when counties in the Central Valley have some of the weakest local rules for emissions control than anywhere in the state. Even if the authority to site individual biorefinery plants lies with the local air district boards, the ARB must consider the direct, indirect, and cumulative effects of biorefineries upon these communities and must design the LCFS not to increase toxic and criteria air pollution as required by AB32 law.

The following is ARB Staff's only suggested strategy to address the disproportionate siting of biorefineries in low-income and traditionally disadvantaged communities.

> "The emissions estimated for the biofuel production facilities reflect the use of the cleanest energy conversion technologies and air pollution control technologies. ARB staff recommends that the emissions associated with the production of low carbon fuels be fully mitigated consistent with local district and CEQA requirements. To provide additional information for local districts and to inform the CEQA process, ARB staff is committed to developing a **guidance document** to provide information on the best practices available to reduce emissions from these types of facilities. This effort **will** commence immediately; ARB staff **plans** to have a draft available by the end of December 2009 (emphasis added)."[28]

Members of the AB32 EJAC attending the January 28, 2008 EJAC meeting raised the issue of local district siting agencies in the Central Valley being intentionally mislead by biorefinery operators to believe that they were contributing towards global warming solutions and would fall under the LCFS when land use change estimates had barely even begun. At the meeting ARB staff suggested that they could tell the local siting agency that simply, "the LCFS is still under the regulatory process and that the GWI of fuels is still under review." When we followed-up on the suggestion in a request for a letter stating exactly that, ARB Staff refused based upon the circular argument that "the LCFS was still under analysis."

Given that the EJAC requested a guidance document to bring to local siting agencies from ARB Staff well over a year ago, we are alarmed that staff has yet to even commence development of a guidance document,[29] ARB's only suggested response to address the disproportionate siting of biorefineries in low-income communities. Because the guidance document is non-existent,

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[27] See e.g., The ISOR identified the following potential impacts but did not analyze the implication of each in a community already facing cumulative sources: "A refinery that produces 100 million gallons of corn ethanol uses as much water as a town of 5,000. More intensely managing land to improve yields may also exacerbate water quality problems: soil erosion along with fertilizer and pesticide runoff can increase as crop management intensifies(68, 69). Bringing non-agricultural lands into production can also increase erosion and runoff."

[28] ISOR, ES-24.
[29] ISOR, ES-33.

merely advisory, and will still allow for "minimal impact" from biorefineries, the ARB can in no way "ensure that activities undertaken to comply with the regulations do not disproportionately impact low-income communities."[30] The guidance document will "provide information" to "encourag[e] minimal impact,"[31] leaving the siting of biorefineries to local agencies under CEQA & NSR review.[32]

The reality is that polluters violate permit provisions routinely, where biorefineries pose new and potentially significant sources of water and air pollution. In Iowa, the *Des Moines Register* ran "a special analysis of biofuel plant violations in June 2007 and identified 394 environmental violations associated with these facilities over six years. The plants violated air quality regulations in 27 instances, and were cited for water pollution in even more. And ethanol is not the only culprit: a Cargill biodiesel plant in Iowa Falls prompted a fish kill after it improperly disposed of its liquid waste."[33] The Sierra Club has already sued in Iowa and Indiana because ethanol plants have made neighbors ill from toxics in the air and the water.[34]

The LCFS is Statutorily Required to Not Increase Toxic and Criteria Pollutant Emissions
The LCFS must ensure that activities undertaken do not interfere with state and federal efforts to reduce toxic air contaminant emissions under § 38562(b)(4). § 38562(b)(6) requires the ARB to consider "overall societal benefits, including reductions in other air pollutants." In addition, § 38570(b)(2) requires the ARB to "Design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants."

"The proposed LCFS regulation is [] expected to result in no additional adverse impacts to California's air quality due to emissions of criteria and toxic air pollutants."[35] However, at the March 27, 2009 LCFS workshop ARB staff clarified that they are still currently evaluating toxic air pollutant emissions and *expect* no adverse air quality impacts.[36]
Because ARB analysis is incomplete, ARB staff cannot claim that the LCFS will not increase toxic and criteria pollutant emissions as statutorily required.

[30] ISOR, ES-33.
[31] ISOR, ES-33.
[32] ISOR, VII-12.
[33] Widenoja, Raya, "Destination Iowa: Getting to a Sustainable Biofuels Future," Worldwatch Institute, Oct. 2007, p. 10, http://www.sierraclub.org/energy/biofuels/iowa/IowaBiofuelsReport.pdf
[34] Anthony, Juliette, "Corn Ethanol & its Unintended Consequences for California," Sept. 10, 2007, http://www.renewableenergyaccess.com/rea/news/story?id=49878
[35] ISOR, VII-1
[36] See e.g., "Biodiesel feedstocks can have a significant effect on emissions of ROG, PM, and NOx. NOx is of particular interest because biodiesel has been reported to increase NOx emissions. ARB staff has assumed that there will be no increase in the emissions of NOx. This is because staff is currently conducting an extensive test program for biodiesel and renewable diesel and will follow that effort with a rulemaking to establish specifications to ensure there is no increase in NOx. For renewable diesel, the main factors are changes in engine technologies and regulatory action; however feedstock composition is not expected to affect changes in renewable diesel emission rates. Because renewable diesel is a high Cetane, ultra-low aromatic fuel, renewable diesel is expected to have lower emission rates of ROG, PM, and NOx than diesel fuel."; "Emission standards for vehicles which use E85 are the same as for vehicles which use gasoline. Therefore, staff does not expect to see a significant difference in the emissions." VII-18.

Additional research needs to be conducted on the various fuel type varieties and blends in order to ensure compliance with AB32 no-backsliding statutory requirements. ARB explains in the ISOR that "At least two other vehicle studies are in the works, the Coordinating Research Council E-80 project, and the US EPA Comprehensive Gasoline Light Duty Exhaust Fuel Effects Test Program to Cover Multiple Fuel Properties and Two Ambient Test Temperatures. Criteria pollutant and toxic emissions from motor vehicles using all fuels were estimated with the CA Modified GREET version 1.8b(47)." At the March 27, 2009 LCFS workshop staff pointed out that they were waiting for this state/ federal program to begin after it was stalled in contract, but next month testing should be underway. Without these test results ARB's work is incomplete, and Staff cannot claim with the requisite level of certainty that there will be no increases in toxic air contaminants when the testing has not even begun. Under a previous testing program, the EPA concluded that "ozone levels generally increase with increased ethanol use."[37] The chemical variations of bioethanol fuel mixtures could thus exacerbate CA's public health air quality crisis, in turn, creating additional disproportionate impacts within the state.

Given the considerable public health risks of switching and mixing fuel blends, with often unknown or controversial results in localized communities,[38] and the statutory requirements not to increase toxic pollution, a full environmental justice impact assessment is warranted for each fuel type, blend, and known impact on low-income communities. If any fuel type increases toxic emissions, it is required by statute to fail and should not be promoted nor receive credit under the LCFS framework.

The Promotion of Biofuels Made from Food Crops Disproportionately Impacts Low-Income Communities and Endangers Food Security

As a measure under the AB32 framework, the LCFS must ensure that activities undertaken do not disproportionately impact low-income communities under § 38562(b)(2). We have raised this requirement repeatedly throughout the AB32 Scoping Plan process for ARB staff to evaluate the impact of agrofuel expansion on increased food prices affecting food security for low-income populations.[39] The ISOR also acknowledges that warnings about a possible linkage between the increases in both food prices and corn ethanol production "began to surface" as early as 2007 and the first part of 2008.[40] Yet, ARB staff clarified as recently as March 27, 2009 that this issue is still merely "on the radar" and that they "took a little bit of a look at it" and seen ranges of attributable fault to biofuels from 0-75%.[41] There is no evidence of any ARB staff analysis on

[37] 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

[38] *See, e.g.*, MTBE ban after found contaminated drinking water. "Very much like the original backers of MTBE, both from industry and major environmental groups, who adamantly ignored the warnings regarding MTBE's ability to contaminate drinking water, many of these same people are avoiding the unintended consequences of diverting millions of gallons of water into ethanol plants. They fought to preserve the oxygenate mandate so that ethanol could replace MTBE, which delayed MTBE's removal from California's gasoline by several years. Only after many wells in California were contaminated, did they support its removal." Anthony, 2007.

[39] See e.g., http://www.arb.ca.gov/cc/ejac/meetings/12808/lcfsandej_1_28_08.pdf

[40] ISOR, IV-41.

[41] See, e.g. "Secret report: biofuel caused food crisis - Internal World Bank study delivers blow to plant energy drive," *The Guardian*, Jul. 4, 2008, http://www.guardian.co.uk/environment/2008/jul/03/biofuels.renewableenergy

the actual attributable fault of biofuels to increased food prices, because actual modeling has not been done.

Considering that we have raised the food versus fuel issue repeatedly to Staff since before the adoption of the LCFS as an EAM in May of 2007 and throughout the AB32 Scoping Plan process, we find the absence of any meaningful food price increase analysis exhibits an "astonishing callousness"[42] considering that literally, millions of lives and untold human suffering are at stake.[43] At the March 27, 2009 LCFS workshop, Professor Michael O'Hare at UC Berkeley stated via teleconference participation that he ran his own GTAP model and found that biofuels attributed towards 50% of the increased food prices in the food versus fuel debate. Mr. O'Hare expressed the opinion that he thinks the ARB should "take food price increases seriously." If ARB's contractor, an individual professor, was able to run an initial model on his own, we believe that ARB can run preliminary models of the attributable effect biofuels has on increased food prices considering that ARB staff already employs the GTAP model to calculate global land use change impacts, the issues share correlations as described below, and possibly data sets. Despite the similarly "difficult"[44] issue of calculating land use change effects worldwide where there could be "multiple causes," ARB staff presents numerous sets of land use change data they admit still need further analysis in its proposed "default Lookup Table" for ARB Board approval.

Without actual models, ARB concluded that the "Federal biofuel regulations rather than the LCFS, will,… exert the greatest pressure on food prices."[45] Staff based its conclusion upon the Federal Renewable Fuel Standard ("RFS") volume requirement of 15 billion gallons by 2015 versus ARB staff's claim that the "LCFS is designed to stimulate the production of lower-carbon, non-crop-based fuels."[46]

("Biofuels have forced global food prices up by 75% - far more than previously estimated - according to a confidential World Bank report obtained by the Guardian.")

[42] "Food or fuel?" *LA Times*, Feb. 26, 2008, http://www.latimes.com/news/printedition/asection/la-ed-food26feb26,1,5542093.story

[43] See, e.g. 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. ("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."; "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."); 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_boon
doggles/1 ("By 2025 rising food prices caused by the demand for biofuels could cause as many as 600 million more people to go hungry worldwide.")

[44] ISOR, ES-29.

[45] ISOR, ES-29.

[46] ISOR, ES-29.

Yet, unlike values in the "Lookup Table" that require a *full* lifecycle analysis, quantification and certainty, a mere acknowledgement that increased production of biofuels could even potentially contribute to increased food prices conversely shows that the ARB cannot demonstrate that the LCFS will not disproportionately impact low-income people with hunger. The ISOR states:

> "The LCFS… *will* result in the diversion of agricultural land from food production to biofuel feedstock production. This diversion of agricultural land to biofuel production *will* exert an upward pressure on food commodity prices, and potentially lead to food shortages, increasing food price volatility, and inability of the world's poorest people to purchase adequate quantities of food (63, 64)... Controversies over the trade-offs between food and fuel crops *are likely* to intensify as crop-based biofuel production increases over the next decade."[47]

Here, ARB staff correctly identifies that through the production of "corn and sugarcane ethanol—the biofuels that are expected to dominate the alternative fuels market over the next five years,"[48] the LCFS will cause an impact on food commodity prices threatening the food security of the lowest-income some of whom live in California. Because increases in food prices disproportionately impacts low-income people who spend a greater percentage of their income on food, the inclusion of food crops in the LCFS will violate AB32's unequivocal requirement that actions taken pursuant to meet AB32 goals do *not* disproportionately impact low-income communities.

Thus, in order to meet AB32 statutory provisions, ARB must exclude crop-based biofuels despite, in several instances, seeming to pick it as a fuel "winner."[49] If the LCFS gives credits for the use of food crops derived from biofuels (agrofuels), the resulting competition between the fuel use of Californians and food needs around the world will undoubtedly create a disproportionate impact on low-income Californians. Meanwhile, 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.[50] The conversion of farmland for crop fuel production will directly impact these millions of Californians already in poverty by increasing food prices.[51]

Cumulatively, increased food prices will be felt most keenly by low-income people who will no longer be able to afford basic food necessities. When biofuel production drives up commodity prices, food access is compromised for low-income food purchasers.[52] Thus, the inclusion of

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[47] ISOR, IV-41 (emphasis added); see also, "The production capacity of the ethanol plants currently operating and under construction in the U.S. is approximately 13 billion gallons per year... About 4.6 billion bushels of corn—more than 30 percent of the annual U.S. corn crop—is needed to support this level of production. Diverting this much of the American corn harvest to ethanol production is likely to exert upward pressure on food prices." Id. at IV-42-43. ARB staff gave a further update at the March 27, 2009 LCFS workshop that the 30% of U.S. corn going towards ethanol is increasing up towards 40-50% in the next couple of years and will likely hit 15 billion gallons of corn-ethanol before 2015.

[48] ISOR, IV-41.

[49] See e.g., ISOR, VII-2 ("Biofuel production on a commercial scale will require development of new technologies as well as the continued use of conventional technology with crop-derived feedstocks."); VI-2, ("The vast majority of ethanol used during the first three to five years of the LCFS is expected to be produced from corn.")

[50] "Hunger in California — Poverty and Population Statistics by County," Farm to Family, http://www.cafarmtofamily.org/hunger.pdf

[51] *See*, UN Energy, p. 7, "Liquid biofuel growth has already begun to raise the prices of the world's two leading agricultural feedstock-maize and sugar…" *Id*.

[52] UN Energy, p. 36.

crop-based biofuels in the LCFS will create the disproportionate impact of heightened food insecurity upon low-income communities in California, in direct violation of § 38562(b)(2) of AB32.

"[2007] year biofuels will take a third of America's (record) maize harvest. That affects food markets directly: fill up an SUV's fuel tank with ethanol and you have used enough maize to feed a person for a year. And it affects them indirectly, as farmers switch to maize from other crops."[53] State measures that encourage bioethanol production will individually and cumulatively cause these food price projections, leading to heightened hunger worldwide.[54] By 2025 rising food prices caused by the demand for biofuels could cause as many as 600 million more people to go hungry worldwide.[55] Thus, according to the U.N. Special Rapporteur on the right to food, "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."[56] "The stage is now set for direct competition for grain between the 800 million people who own automobiles, and the world's 2 billion poorest people."[57]

In sum, the increased disproportionate impacts upon low-income communities threatening food security and economic instability must be considered in the development of the LCFS, in accordance with § 38562(b)(2) requiring that all "activities undertaken to comply with the regulations do not disproportionately impact low-income communities." Considering the deleterious impact on the poor in California alone, we call upon the ARB Board to exclude or not give credit to biofuels derived from food crops. To do so would effectively subsidize the hunger, starvation, and political instability of millions of people worldwide.

A Credit Trading Program Will Create Disproportionate Impacts in Low-income and Communities of Color

California's Scoping Plan "identified that, beginning in 2015, transportation fuels are to be included in the Cap and Trade Program."[58] "Beginning 2011, regulated parties could start generating credits on a quarterly basis. These credits can be banked indefinitely and used for compliance purposes, sold to other regulated parties, and purchased and retired by regulated parties. In addition, the credits can be exported to other GHG emissions reductions programs such as AB 32, subject to the requirements of these GHG programs."[59]

We oppose any pollution trading scheme because it will potentially create "hot-spots" in communities historically overburdened by pollution, because it will create disproportionate

[53] *The Economist*, "The End of Cheap Food," Dec. 6, 2007, http://www.economist.com/opinion/displaystory.cfm?story_id=10252015
[54] *See also*, "Now countries such as Russia and Venezuela have imposed price controls—an aid to consumers—to offset America's aid to ethanol producers." *The Economist*, 2007,
[55] Goodell, 2007.
[56] Ziegler, p. 2.
[57] Ziegler, p. 8, *quoting*, Lester Brown from the Earth Policy Institute, briefing the United States Senate in June 2006.
[58] ISOR, ES-3.
[59] ISOR, V-19.

impacts in low-income communities, will not achieve real, permanent, quantifiable, verifiable, nor enforceable pollution reductions as required under AB32, and prevents public participation. In the case of the LCFS, if credits are allowed to be exported to the larger AB32 cap & trade framework, as initial Staff recommendations suggest,[60] then regulated stationary source entities will no doubt purchase LCFS credits, enabling them to concentrate pollution at stationary sources disproportionately in low-income and communities of color, in direct contravention of the AB32 statutory requirements to prevent otherwise.

> "Environmental justice concerns will arise both domestically and globally under global pollution trading. Carbon dioxide sources release hazardous co-pollutants, e.g., fine particles and toxic products of incomplete combustion. As U.S. firms buy bogus Russian credits or cheap reduction credits from developing countries, where energy inefficiencies are high, air pollution in urban U.S. communities will be maintained or at least not reduced as fast as it otherwise would have been had domestic reductions in greenhouse gases been mandated."[61]

Even if the LCFS did not interfere per se with other air pollution regulatory programs as required by § 38562(b)(4), it still must not increase toxic and criteria pollutants under § 38570(b)(2), while § 38562(b)(6) requires the ARB to consider "overall societal benefits, including reductions in other air pollutants." Thus, in designing the LCFS program, the ARB must consider that credit trading will maintain or exacerbate the air pollution problems already in Californian communities, or at the very least, not reduce the problems as fast as it otherwise would by simply requiring entities to meet the intensity target.[62]

Carbon Capture & Storage Technologies Do Not Represent "Real" and "Permanent" Emissions Reductions and May Disproportionately Impact Low-Income or Traditionally Overburdened Communities

We oppose all CCS technologies as wasted investments that physically threaten surrounding communities. The proposed LCFS may incentivize (i.e. "pick a winner") the CCS technology that has not been proven to even work. The ISOR states:

> "Large stationary sources of carbon dioxide, such as refineries and power plants are most viable candidates for CCS. Gasoline and diesel produced from such refineries could receive lower lifecycle carbon intensity values under the LCFS."[63]

> "[S]taff is proposing that any regulated party, using a high carbon-intensity crude oil (> 15 g CO2e/megajoule) brought into California that is not already part of the California baseline crude mix, would have to report and use the actual carbon intensity for that crude oil unless the party demonstrates that it has reduced the crude oil's carbon intensity below 15 g CO2e/megajoule using carbon-capture-and-sequestration (CCS) or other method."[64]

We greatly oppose the inclusion of any CCS technologies in the LCFS, whether related to the transportation sector or not. Oil produced using CCS technologies will *not* have a lower net GWI than conventional crude oil when nobody has yet to prove that the carbon can remain permanently sequestered, and projects could impose other environmental harms including

[60] V-23.
[61] Drury, Richard; Belliveau, Michael, et. al, "Pollution Trading and Environmental Injustice: Los Angeles' Failed Experiment in Air Quality Policy," *Duke Environmental Law & Policy Forum*, Vol. 9:231, Spring 1999, p. 287.
[62] *See*, Drury, p. 287.
[63] ISOR, III-21.
[64] ISOR, V-25.

threatening groundwater quality and supply.[65] In such instances, fuel processes that use CCS technologies cannot be considered a low-carbon fuel under any circumstances when the carbon can eventually escape. Even very low leakage rates through cracks or fissures in the ground and oil wells could reverse any purported climate benefits achieved by CO2 burial. By factoring in theoretical and unproven CCS reductions in a given fuel's GWI value the ARB would not reflect actual emissions reductions, and would in effect allow-in dirtier crudes that could in turn lead to increased toxic and criteria pollutant emissions. To address this potential backsliding dynamic, we recommend that 1) ARB thoroughly analyze the full lifecycle for each individual grade of feedstock including all dirtier crudes, incorporating all processing stages such as extraction and refining.[66] 2) The LCFS be an entity-specific regulation so that dirtier fuels cannot hide behind averaged default values, and 3) the LCFS should not give any credit for use of CCS technologies.

The explicit reference to CCS in the proposed regulatory language would raise a very real and substantial threat to all communities surrounding sites of sequestration and storage, and encourage investments needed elsewhere in questionable technologies. A large leak of CO2 could kill vegetation, animals, and humans over a fairly large area.[67] Fuel providers could target EJ communities in California that have large oil-well fields, such as in Bakersfield, Wilmington, and other areas vulnerable to natural disasters like earthquakes. Thus, the potential siting of CCS projects in traditionally overburdened communities could also violate AB32's statutory mandate to not disproportionately impact traditionally overburdened communities.

Proposals to Use Municipal Waste as a Fuel Threaten To Increase Toxics, Criteria, or Other Pollutants

Although the ARB is not presenting any default values for fuel pathways derived from municipal solid wastes for Board approval at this time, we note that we recommend against any future approval of fuel pathways that involve combustion of any of the following:

- **"**Non-crop feedstocks could include biomass wastes from municipal solid wastes, agriculture wastes, waste oils, and forestry.**"**[68]
- "Cellulosic waste feedstock includes municipal solid waste, wood waste from furniture manufacturing, and construction and demolition debris. The cellulosic ethanol plants projected to be built in California will use residues or wastes as feedstocks. Ethanol produced from wastes has no land use component for carbon intensity and qualifies as advanced renewable ethanol."[69]

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[65] *See e.g.,* Charles W. Schmidt, "Carbon Cature & Storage: Blue-Sky Technology or Smoke?," *Environmental Health Perspectives*, v.115(11), Nov. 2007, http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2072827; Center for Environmental Education, "What's the problem with carbon dioxide sequestration?," http://www.ceeonline.org/greenGuide/energy/upload/EnergySources/Coal.aspx

[66] *See e.g.,* Communities for a Better Environment, "CBE comments Dec 08 AB32 Proposed Scoping Plan," Dec., 8, 2009, p. 24-28.

[67] *See e.g., "*THE CARBON CAPTURE JUGGERNAUT ROLLS ON," Rachel's Democracy & Health News #959, May 15, 2008; Schmidt, Charles W., "Carbon Capture and Storage: Blue-Sky Technology or Just Blowing Smoke?" *Environmental Health Perspectives*, Vol. 115, No. 11., Nov. 2007, http://www.ehponline.org/members/2007/115-11/focus.html; Knight, Matthew, "Fake Plastic Trees," *CNN Future Summit,* Dec. 6, 2007, http://edition.cnn.com/2007/TECH/11/30/fsummit.climate.carboncapture/; Information on Lake Nyos. *Wikipedia*: http://en.wikipedia.org/wiki/Lake_Nyos; Montague, Peter, "Carbon Sequestration," *Rachel's Democracy and Health News,* Vol. 932, Nov. 8, 2007, http://www.rachel.org/bulletin/index.cfm?St=3;

[68] ISOR, ES-24.

[69] ISOR, III-15.

- "Lignocellulosic (cellulosic) feedstocks include dedicated crops, crop and forest residues, or wastes (municipal solid waste, furniture manufacturing wastes, etc.)"[70]

We also note that any future fuel pathways derived from waste products will need to fully analyze the lifecycle of the waste product, where not all waste products can be assumed to be zero-carbon sources.[71]

Maximizing Technological Innovation Requires Guidance, Specifications & Coordination
"AB 32, at Health and Safety Code section 38560.5, requires that ARB adopt regulations by January 1, 2010, to implement discrete early action GHG emission reduction measures. These measures must 'achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions' from the sources identified for early action measures."[72] The ISOR states that "[i]t is vital that fuel suppliers look beyond 2020 in their assessments of the types and quantities of transportation fuels that might be used in California over the next 20 years."[73] However, the ISOR also states that "[t]he LCFS is not designed to meet Governor Schwarzenegger's long term goal of reducing GHG emissions by 80 percent by 2050 (Executive Order S-3-05). In order to meet that goal, the downward trend in the carbon intensity of fuels will need to continue following the achievement of the 2020 target of a 10 percent reduction. Therefore, staff plans to consider targets for the 2030 timeframe in future reviews of the LCFS."[74]

In order to ensure sustainability, i.e. "development that meets the needs of the present without compromising the ability of future generations to meet their own needs,"[75] we call upon the ARB Board to exclude agrofuels from the LCFS because they will inhibit technological innovation. Pushing innovation toward 2050 is the ultimate goal, where we do not want questionable short-term results that ultimately result in wasted and stranded investments. For these reasons, we oppose the incentivization of agrofuels that will only result in wasted investments and will not achieve the 2050 goal.

Design of LCFS Program Fails "Maximum-Technologically-Feasible" and "Cost-Effectiveness" Tests
The ISOR states that the "scope of the standard is designed to capture the diverse fuel portfolio available today and in the near future, while offering a fuel-neutral platform in which alternative fuels can be incentivized **without choosing winners or losers** (emphasis added)."[76] However, the "default Lookup Table" does in fact pick winners and losers above or below the relative gas or diesel baselines. ARB staff directly picks those winners by calculating the carbon intensity, which can and has become very political given the great scientific uncertainties of calculating soil payback times, land use change impacts, and all of the other uncertainties in calculating lifecycle analysis and land use change that ARB staff continues to analyze.

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[70] ISOR, III-14.
[71] E.g., The ARB should not assume manure is a zero-carbon waste product when collecting methane. A full analysis of the waste cycle should be included in the future.
[72] ISOR, ES-32.
[73] VI-21.
[74] ISOR, ES-29.
[75] UN Energy, p. 4.
[76] ISOR, V-2.

At the March 27, 2009 LCFS workshop ARB staff expressed that "customers will decide" the winners on the market by picking vehicles and fuel. We see this as a massive waste of investments in a patchwork of different (and crazier) fuel types and differing infrastructure requirements. Customers may not know the drivetrain efficiencies or carbon intensity requirements to maximize technological feasible reductions. By allowing every fuel to compete, and not excluding the fuels that we already know are highly polluting, the ARB will waste an incredible opportunity to truly push for a coordinated zero-carbon system, and protracts a lot of economic and political pain. In effect, ARB staff is picking winners and losers every day as they pick which values to employ among competing self-interests. For instance, the ISOR describes that in computing one input "ARB staff and GTAP modelers assume that 25 percent of the carbon stored in the soil is released when land is cultivated. **We *believe* this value is a *reasonable* compromise given the variability in data** (emphasis added)."[77] This great scientific uncertainty and lack of metrics, objectives, or guidelines will create a free for all fuel situation with a long trail of stranded investments during initial uncertainties. When there are marginal differences in values between particular fuels on the Lookup Chart, we believe the ARB invites financial incentives for fraud, being flooded with opt-in values to get under the baseline, and the agency having to make a "compromise" situation, subject to competition from new fuel challengers.

Indeed, the entire "let the market decide" premise behind the LCFS needs serious re-evaluation. The ISOR states that the "LCFS is a performance-based standard: it neither mandates nor prohibits the use of specific fuels. Regulated fuel providers are free to make available any mix of fuels, so long as that mix complies with current carbon intensity limits. As such, a wide variety of compliance paths are possible."[78] However, California has enforceable environmental laws to avoid such a free-for-all situation creating a global race to see who can find the coolest thing to burn. ARB staff would like to pretend that it's a free market with no rules or guidelines (which was interesting to see WSPA argue for more regulation and guidance) to avoid this very un-coordinated free-for-all situation. ARB staff is legally required to do a multimedia analysis, to protect low-income communities against disproportionate impacts, not increase toxics and criteria pollutants, etc. If a fuel does not meet these requirements, it is necessarily prohibited as a matter of law. By promising everybody that they too will now be able to compete in the new alternative fuel economy masks ARB's legal obligations.

We note that the agencies' new "nimbleness" in not having to go to the ARB Board for approval for each new or changed value to the pathway would be at the expense of any consistency for regulated parties to base their investment decisions upon.[79] This is a critical point when many of the proposed default fuel values have marginal differences, and any one change to a relatively significant input for that particular fuel's pathway could easily push a fuel over the gas or diesel baseline edge wiping out its investments overnight, after a public review process. For instance, the simple switch of methodologies to account for release of emissions over time when there is a land use change, from the amortization to the Fuel Present Value method, as ARB staff contemplates, this one input change would push all but one of the eleven corn-based ethanol

[77] IV-47.
[78] ISOR, V-37.
[79] See, ISOR, V-25.

pathways as worse than gasoline in the first compliance year. Such a dynamic would risk billions of dollars of wasted investments in what is a critical time to reshape the new energy future in a coordinated and complementary manner. This in turn would raise concerns by regulated parties (and their patrons, which could amount to everyone who drives a vehicle) whether the ARB ever examined the "cost-effectiveness" of such a fuel death-match approach.[80] Rather, we recommend that the ARB Board delay implementation of the LCFS until after 2015 (the same recommendation the EJAC gave in our comments on the proposed scoping plan), to allow time for more robust and certain analysis.

Second-Generation Biofuels Still Raise Significant Problems

"The staff acknowledges that advances in the production of advanced biofuels are necessary to fully implement both the California LCFS and the federal renewable fuels standard."[81] Although moving immediately to "second generation" technologies in biofuels production such as agricultural wastes and crop residues would reduce the competition between food and fuel, and is highly preferable on that basis alone,[82] even these fuel sources have not been proven to reduce GHG emissions. In a compilation by an organization in the U.K., the authors cite studies by scientists showing that current production methods of agrofuels will release between 2-9 times more carbon gases over the next 30 years than if land was forested.[83] Even the international body, U.N. Energy warned that:

> "With second-generation technologies that rely on agricultural and forestry residues, it is important to recognize that such residues are necessary for maintaining soil and ecosystem health, and that a certain amount must remain on the ground. Logging residues are an important source of forest nutrients and help protect the soil from rain, sun, and wind, lowering the risk of erosion; agricultural residues play a similar role in farm fields… The potential for carbon sequestration in large areas would be reduced… if most of this organic matter were converted into bioenergy, resulting in the re-release of the carbon into the atmosphere. Especially for second-generation fuels where the entire feedstock product (including crop residues) can be utilized, it might be difficult to convince farmers to leave a certain percentage of the harvest on the field… even more-sustainable energy crops cannot substitute for natural forests or prairies."[84]

Thus, even second-generation biofuels run the risk of achieving little to no carbon reductions when retaining plant cover, virgin forests, and pristine savannas are the best fool-proof safeguards against climate change.

Sustainable Fuel Solutions Appropriate for the LCFS that will Achieve Real Emissions Reductions

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[80] While ARB staff did evaluate "cost-effectiveness" by developing values for each compliance scenario modeled, their methodology ignores the substantial investments that will be wasted after it is eventually determined that a particular fuel type fails updated requirements, such as fuel specifications, sustainability criteria, etc. "Staff calculated cost-effectiveness values for each compliance scenario developed for the proposed regulation. The values were calculated for each compliance year for 2010 to 2020 and were determined by dividing the net compliance cost for the year by the total metric tons of CO2 equivalent expected to be reduced for the same year." ISOR, VIII-33.

[81] ISOR, ES-30.

[82] *See*, Ziegler, p. 13.

[83] Boswell, Dr. Andrew; Ernsting, Almuth; Rughani, Deepak, "Agrofuels threaten to accelerate global warming," Biofuelwatch, Updated Dec. 2007, *UNFCCC, Bali version*, p. 4. http://www.biofuelwatch.org.uk/docs/biofuels-accelerate-climate-change.pdf

[84] UN Energy, p. 46.

We believe that proven zero-carbon renewable energy sources, such as solar and wind combined with plug-in electrical vehicles and electricity-derived hydrogen fuel-cell vehicles, are the best available and proven fuel alternatives that will lead us to a zero-carbon, sustainable, and equitable future.[85] We can no longer afford to rely upon the very same highly-polluting technologies from last century, namely, combustion, and continue to subsidize and entrench the very same fossil-fuel and natural resource extraction industries that put our collective planet in peril. The promotion of biofuels will only divert much-needed resources from true zero-carbon technology innovation and transition. Plant-based fuel processes are wasteful, polluting, and as a popular magazine put it "dangerous, [and] delusional"[86] as a solution for global warming. Whereas, wind and solar energy are clean, renewable, available, and plentiful.[87] Renewable energy does not impose famine, wars, Indigenous evictions, human rights abuses, disproportionate impacts upon the world's poor, increased criteria pollutant emissions, and the whole Pandora's box of irreversible and tangible horrors that the LCFS will surely unleash through the continued promotion of biofuels. As "the foundation for similar initiatives in other states, as well as nationally and internationally,"[88] the world is watching, waiting to see whether we open or close the lid.

However, we do agree with the principle of the LCFS—that the ARB and CEC should take aggressive steps now to promote lower, and preferably zero-carbon fuel alternatives, as the only means of achieving the long-term goal of 50% emissions reductions by 2050 in the transportation sector. Considering that a leading group of climate scientists issued a declaration at the Bali talks that we only have 10 years to act on climate change before "global catastrophe,"[89] we encourage the incentivization of known ultra-low-carbon fuel alternatives that will reduce GHG emissions with certainty, such as electric hybrids run-off of renewable solar and wind power. We urge the ARB Board to pick the lowest carbon transportation alternatives. To do otherwise would just spin our tires indefinitely wasting time and millions of investment dollars speculating on the impractical.

ARB Staff's Proposed Methods to Address Environmental Justice in the LCFS Are Incomplete

"As part of ongoing AB 32 analysis, ARB staff is developing a screening method for geographically representing emission densities, air quality exposure metrics, and indicators of vulnerable populations, as an evaluation aide for already adversely impacted communities. This work is not anticipated to be complete by the adoption of the LCFS."[90] The screening method

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[85] *See*, "PV panels will supply energy for 25 or more years with very little maintenance for plug-in hybrid vehicles. Any crop that is grown for ethanol requires energy inputs annually, for growing, processing and distribution. Rather than subsidizing corn ethanol, we should have programs to place solar panels on the top open air layer of parking garages for plug-ins, and devote more funds to public transportation." Anthony, 2007.

[86] Goodell, 2007.

[87] Jacobson, Mark, "Addressing Global Warming, Air Pollution Health Damage, and Long-Term Energy Needs Simultaneously," Dept. of Civil and Environmental Engineering Stanford University, May 9, 2006, p. 2, http://www.stanford.edu/group/efmh/jacobson/

[88] University of California, "UC experts detail new standard for cleaner transportation fuels," Aug. 2, 2007, http://www.energy.ca.gov/low_carbon_fuel_standard/index.html

[89] Mittelstaedt, Martin, "We have a decade to avert climate catastrophe, experts say,: Greenhouse gases must be brought under control or millions face 'extreme events,'" *Toronto Globe and Mail*, Dec. 6, 2007. For link to declaration issued by scientists, *see*, http://www.climate.unsw.edu.au/bali

[90] VII-23.

has not been developed yet, nor has ARB elaborated how such a screening tool would become enforceable when local agencies have siting authority and ARB has not even commenced work on its "Guidance Document" yet. Therefore, ARB staff cannot claim that adoption of the proposed LCFS will not disproportionately impact low-income and traditionally overburdened communities in violation of AB32 statutory protections. Just as the LCFS proposes to disallow "borrowing" from the future (because really, it represents nothing), ARB cannot defer its legal requirements until some indefinite future expecting that we will just trust them to actually deliver this time. We have raised these concerns with ARB staff repeatedly for the past 2 years.

The ISOR states that "staff seeks to develop tools to ensure that the proposed regulation does not disproportionately impact low-income and minority communities, does not interfere with the attainment and maintenance of ambient air quality standards, and considers overall societal benefits (such as diversification of energy resources)."[91] To address these critical issues of environmental justice, ARB should have solicited evaluation tools well before the final review 45-day comment period began. Two years ago, EJAC raised not only these concerns, but food security implications as well. Even after the popular press has tragically revealed our fears, ARB has yet still to take this issue "seriously." When we asked for a letter stating that the LCFS was still under analysis, we were told no "because the LCFS was still under analysis." Now, none of ARB's offered tools to address these issues of environmental justice can guarantee that there will be no disproportionate impact on low-income populations, do not exist yet, or have not even been started.

Conclusion: Actions ARB Should Take in Designing the LCFS Program

1. The ARB should exclude agrofuels from the LCFS – all food crops and corn-based ethanol in particular. The global effects on hunger, deforestation, and land use change are already egregious. The air toxic and criteria pollutant effects still need analysis.
2. The ARB should instead promote proven zero-carbon alternatives, such as plug-in electric cars powered with renewable energy sources of solar and wind—and research and promote other zero-input technological innovations as interim fuels. In order to ensure against the entrenchment of allegedly "interim" fuels that still rely upon incomplete combustion, if the ARB Board does approve of the LCFS regulation at this time, we recommend adding a 20% GHG savings clause, similar to the Federal RFS that requires any fuel used to comply have a minimum 20% carbon intensity less than gasoline[92] (without the "grandfathering" of already existent biorefineries exception.)
3. The LCFS should be an entity-specific standard – not market based – in order to achieve real and permanent emissions reductions, actual technological innovation, and to meet all of the AB32 statutory provisions raised in this letter.
4. The ARB is required to consider the needs for public participation, potential contributions of the LCFS to the creation of Hot-Spots, and other disproportionate impacts that the LCFS will

[91] ISOR, ES-25.

[92] "The Federal Renewable Fuels Standard (RFS2)…specifies that ethanol derived from corn starch produced at new facilities that commence construction after the date the act was signed, must achieve at least a 20 percent reduction in lifecycle greenhouse gas emissions compared to baseline lifecycle greenhouse gas emissions. The baseline is defined as the average 2005 lifecycle GHG emissions for gasoline." ISOR, VI-11, n.48.

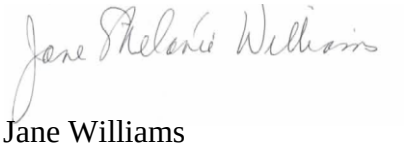
have on low-income and communities of color. The ARB should delay adoption of the LCFS until ARB staff can guarantee that there will be no disproportionate impacts on low-income communities and ALL analyses are complete as legally required.

In conclusion, the ARB is statutorily required to consider the direct, indirect and cumulative impacts on low-income and communities of color, to not increase toxic and criteria pollutant emissions, nor disproportionately impact low-income communities before adoption of a proposed AB32 measure. The ARB has not met these requirements. We therefore recommend that the ARB Board not adopt the LCFS regulation. On behalf of the AB32 EJAC, and all of those who will be deleteriously affected by the promotion of agrofuel policies worldwide, thank you for your careful consideration of these recommendations.

Sincerely,

Angela Johnson Meszaros

AB32 EJAC, Co-chair
California Environmental Rights Alliance



Jane Williams

AB32 EJAC, Co-chair
California Communities Against Toxics

cc: Dean Simeroth, Chief, Criteria Pollutants Branch, ARB; John Courtis, Manager, Alternative Fuels Section, ARB.