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From: Rick Margolin, Energy Independence Now

Subject: Comments on California Alternative Fuels Market Assessment

Energy Independence Now would like to thank the Energy Commission for extending the deadline for comments on the California Alternative Fuels Market Assessment. The following are general comments about the entire scope of the report, followed by comments specific to the Alternative Diesel and Hydrogen Sections.

General Comments:

- EIN would like to see steps taken to ensure this report and subsequent ones not focus too narrowly on low-carbon fuels. Our concern is that a some fuels can achieve low-carbon targets but not broader targets that incorporate metrics like emissions of criteria pollutants and fossil-fuel use reduction. It is important that all fuels be evaluated on a suite of metrics, not just one.
- To the maximum extent feasible, there should be a uniform system for providing fuel price data. To do this CEC and TIAX would probably have to solicit recommendations from interested parties. For gasoline, diesel, biodiesel, and ethanol, EIN typically references daily pricing data posted by the Oil Price Information Service (OPIS).

Section 6. Alternative Diesel Fuels, Biodiesel:

- Page 123, paragraph 2, sentence 1: The definition for biodiesel provided is incorrect and inadequate. Diesel-substitutes that can be derived from renewable biomass may not necessarily meet the definition of "biodiesel". A proper definition is provided later in the report on page 126. We would urge that definition be provided here on page 123.
- Page 123, paragraph 2, sentence 2: The word "some" should be changed to "most" so that it reads: ..."biodiesel can be used in most diesel engines without the need for modifications..."
- Page 123, paragraph 3, sentence 1: It should be stated that the finished GTL diesel fuel should meet the ASTM diesel standard (D975) or another recognized standard. This is part of what differentiates the various alternative diesel fuels.

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- Page 123, Section "Quantities of Use": As currently written, this section implies that – based on current numbers – California would have to import its alternative diesel if it were to displace a significant fraction of our annual diesel use. Unfortunately, this statement fails to take into consideration our state's ability to produce these fuels. It should also fairly note the fact that very little of our current petroleum-diesel comes from within the state.
- Page 123, Section "Quantities of Use": This section is much leaner than the same section for the other alternative fuels in the report. As with other fuels in the report, this section should contain information on who is currently using biodiesel/alternative diesels in California, historic consumption and demand growth figures, pricing data, and projections of future use.
- Page 124, Section "Availability of Vehicles": This section does a good job of noting that alternative diesel fuels can be used in any diesel engine, but (again, unlike other fuels' sections) does not provide any analysis on the current or projected market for these fuels. This is critical because of the number of diesels on our roads today. In addition, if – as some auto manufacturers are claiming – diesel passenger cars be able to meet 2007 or 2008 diesel emissions standards, the number of diesel vehicles on California's roads could substantially increase. There should be a comprehensive discussion of how many diesels (both light-duty and heavy-duty) are on our roads today and what that number may do in the near future. There should also be discussion, as in other sections, on these vehicles' range, cost, availability, and the ability to reduce vehicle maintenance costs from running a fuel with higher cetane and lubricity. (The section currently does adequately address emissions and vehicle performance).
- Page 124, Section "Availability of Vehicles", paragraph 2: It should be noted that B5 can be used under warranty in virtually any diesel engine. EIN would like to recommend that the following sentence be changed to read: "Many engine manufacturers allow the use of B20, and a few now allow B100."
- Page 125, first paragraph, first sentence: It appears there is a misprint here. The standard listed should be ASTM 6751.
- Page 125, first paragraph, third sentence: cold-flow treatments are not limited to block heaters. In fact, there are potentially more cost-effective solutions that exist such as cetane boosts, heated fuel tanks, and glow plugs.
- Page 125, second paragraph: Though B100 has less energy, the report should note that this disparity is compensated by biodiesel's higher cetane value and greater lubricity.
- Page 127, paragraph 1, last sentence: The sentence reads: "This transesterification process is required to produce a biodiesel with viscosity characteristics compatible with diesel engines." It would be helpful to know why this sentence was included. It is EIN's understanding that, not only is viscosity not a problem with biodiesel, it is something that is significantly improved because of biodiesel. This is not to say that the existing statement is incorrect, but we would appreciate greater detail provided as to its intended meaning.
- Page 127, paragraph 2, sentence 4: While we are generally comfortable with the statement that Straight Vegetable Oil (SVO) supplies are limited by acreage devoted to oil-crop production, we are concerned this implies no additional

acreage could be converted to oil-crop production, and, therefore, the potential is fixed to current levels of output. We also feel this paragraph lends too much attention to soy oil. We understand it is currently the most prevalent biodiesel feedstock, but it is not a California grown crop and the potential for California to produce it is less promising than our state's ability to more efficiently produce other oil-bearing crops. Therefore, we would like to see this discussion expanded to "oil-bearing crops" rather than just "soybean oil".

- Page 127, paragraph 2: We recommend the addition of a new paragraph here that talks about current instate biodiesel production. We currently have 5 plants with the combined capacity to produce 21 million gallons per year, with confirmed plans for those numbers to increase in the next year.
- Page 127, paragraph 3, sentence 6: It currently reads: "No special infrastructure is needed to support biodiesel blend distribution." While no infrastructural changes are needed at the fueling station, some changes currently may be needed upstream. The installation of dedicated storage tanks (or conversion of existing ones) and splash-blending equipment may be needed at the terminal until such time that refiners ship a pre-blended product. This is partly a result of refiners not producing biodiesel, but is also a result of pipeline companies' prohibition on the shipment of any diesel fuel containing an additive (be it biodiesel or any of the lubricity additives that need to be used in the new ultra-low sulphur diesel). Because this prohibition applies to ULSD for the same reason it applies to blended biodiesel (fear of contamination of other pipelined products) it is believed the issue will be resolved soon. But, at present, it means biodiesel cannot be pipelined and, thus, must blend it at the rack.
- Page 127, paragraph 4: Here there should be mention of the federal excise tax credit, which provides one cent for each percentage of biodiesel present in a blend. Second, this paragraph is an example of a lack of uniform pricing metrics. EIN does not have price information for January/February of 2006 (the dates used in the Market Assessment), but, beginning April 2006, we do have daily price info from OPIS for the LA and SF terminals. Our daily price data for Los Angeles shows B20 carries an 18.9 cent premium over CARB ULSD. However, this is the price before the federal tax credit is taken. Factoring the federal credit would deduct 20 cents from the price, making it 1.1 cent <u>less</u> than unblended diesel. In San Francisco, the non-credited B20 costs 20.6 cents more than CARB ULSD. With the credit it is 0.6 cents more.
- Page 130, 1) Fuel Stability: Because petro-diesel has cold-flow issues, mold growth, and other fuel handling issues we feel it is important this and following sections convey that biodiesel is not alone in having these issues. Instead, this section should show that biodiesel is different because these issues manifest themselves at different times (i.e. its cloud point is warmer than diesel, or its storage term is shorter).
- Page 130, 7) Quality Control: To our knowledge, the biodiesel quality program of note is BQ 9000, not ISO. This is important because the BQ9000 guidelines are not official standards and, therefore, are not legally binding. In the absence of a legally binding fuel quality handling standard, we are left with ASTM 6751 quality specification. However, this specification has been effective in ensuring quality

fuel is delivered to the consumer. Detractors of biodiesel often point to Minnesota's suspension of their biodiesel mandate as evidence there are quality control problems. However, the state of Minnesota's Department of Food & Agriculture (the agency charged with enforcement) was able to prevent off-specification fuel from entering the supply chain precisely because there was an ASTM standard and the state had a successful monitoring and enforcement program in place.

- Page 130, 8) Effect of Feedstock on Emissions: Overall, this is a good section with the exception that it implies CARB diesel is cleaner than biodiesel.
- Page 130, *Barriers and Opportunities for Expansion*: EIN would like to encourage the addition of discussion about the state's ability to grow oil-bearing crops, the ability of these crops to integrate into the growth cycles of higher value crops, replenish or remediate soils, and serve as cover; and the chance to add value to CA cover crops relative to the currently depressed prices of CA cover crops (ie wheat). There should be mention of sanitation districts' efforts to fight the disposal of fats, oils, and greases into sewer systems and how creation of biodiesel markets would help that fight. There should also be discussion of the lack of fueling pumps along the state's corridors where diesel consumption is highest.
- Page 132, second paragraph: While mathematically it is true that the use of 50mgpy of biodiesel would only displace 1% of our total diesel use, the statement implies only 50mgpy is all that would be available. This is hard to justify in light of recent announcements of the construction of plants that single-handedly produce more the 50mgpy.

  This section validates our concerns that projections of supply are based on an assumption that capacity is not increasing. In reality, capacity in the biodiesel industry has increased at an average annual rate of 12%/year. From 2004-2005 alone it jumped 150%. This is in response to increased demand, but facilitated by the fact that there is ample feedstock supply and it is relatively easy to get a biodiesel production facility permitted and constructed (on average, about 18 months) due to the lack of hazardous materials used, stored onsite, low (sometimes no) aerial emissions, recycling of water for onsite use, and market demand for the glycerin byproduct.

  A more accurate assessment would look at the potential demand (in this case, up to 4.1 billion gallons at the top end) and calculate how much arable land could economically and environmentally be used to produce the oil. Constructing a biodiesel plant would not be the inhibiting factor.

<u>Section 7: Hydrogen</u>:

- Page 135, paragraph 4, sentence 2: The statement currently reads: "Such vehicles have the potential to provide the highest efficiency and fuel economy of any currently known, practicable propulsion technology..." The metrics surrounding this section are not necessarily defined well-enough for this statement to stand on its own. We recommend alternate wording along the lines of: "Such vehicles provide significant improvements in efficiency and fuel economy relative to similar model gasoline ICE powered vehicles."

- Page 135, paragraph 4, sentence 3: While hydrogen cars don't leak oil nor would oil spills be a risk, we are concerned that statement alone may disregard important safety and emissions parameters. A better statement would be: "Hydrogen is generally cleaner to produce and distribute than gasoline or diesel, though, in some instances emissions can be higher if coal-fired power plants are incorporated into hydrogen production." It should also note: "Hydrogen is no safer and no more dangerous than gasoline. There are aspects of hydrogen which make it a safer fuel to produce, handle, and dispense, while there are other aspects which require more diligent attention to proper handling procedures."
- Page 136, paragraph 1: This sentence should have a qualifier. It should read "...hydrogen-fueled buses will likely be deployed initially at transit agencies having CNG facilities..." There have been transit agencies without CNG facilities who have expressed interest in adopting hydrogen. Just as prior experience handling compressed gaseous fuel is not a prerequisite for those who wish to operate CNG, it is also neither a prerequisite for those looking at H2.
- Page 140, paragraph 2: Following this paragraph there should be mention of the recently passed SB 1505, which set emissions and renewable content standards for hydrogen produced in California for transportation applications.
- Page 141, paragraph 2, sentence 2: As directed by SB 76 (2005), the CA Department of Food & Agriculture's Division of Measurement Standards is currently developing a hydrogen fuel specification. It is slated to be adopted before the release of the AB1007 report (approximately February 2007)
- Page 143, paragraph 2: It should be noted that the Hydrogen Highway has begun implementing the recommendations of its Codes/Standards Topic Team to have the state adopt a uniform body of codes and standards. The State Fire Marshal has been designated the lead coordinating authority
- Page 143, paragraph 3, sentence 1: This was not a recommendation of the Codes/Standards Topic Team. The Team's recommendations applied only to actions the state can take. It did not make recommendations to the federal level. The detail provided by the entire paragraph is probably not relevant insofar as to say that uniform hydrogen codes and standards are being developed at the national level, and the state of California has adopted a framework for developing interim standards until a national standard becomes available for adoption.

Again, Energy Independence Now would like to thank the Energy Commission for providing this opportunity to submit comments on the Draft *California Alternative Fuels Market Assessment*. We appreciate this opportunity and look forward to continued work together on this and subsequent reports.

Thank you,

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