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February 19, 2008

Barbara McMurdy Marty
City of Hanford
317 North Douty Street
Hanford, California 93230

RE: Great Valley Ethanol Final Environmental Impact Report, Hanford, Kings County

TRANSMITTED VIA FACSIMILE AND U.S. MAIL

Dear Ms. McMurdy Marty:

The Attorney General submits these comments regarding the Hanford City Council's certification of a final environmental impact report ("FEIR") for the proposed Great Valley ethanol plant project ("Project") in Hanford.¹ We understand that the Center on Race, Poverty and the Environment has appealed the certification of the FEIR. Although we typically comment on projects in an earlier stage in their planning process, this project was only recently brought to our attention, and because of the significant global warming related impacts, we request that you consider these comments on appeal.

The Project will produce 63 million gallons of ethanol per year from corn imported from the Midwest. (DEIR, p. ES-1) Ethanol is a renewable fuel that, when blended with gasoline, reduces tailpipe emissions of carbon monoxide, particulate matter, oxides of nitrogen, and other ozone-forming pollutants. Currently, ethanol is blended into gasoline to create E10, a 10 percent blend approved for use in standard automobiles.² As part of its production process, the plant will need to use 1,000,000 gallons/per day of the City's fresh drinking water. The production process will produce a wet distillers' grain co-product, thus avoiding the energy-intensive process to produce dry grain, and minimizing transportation impacts. (DEIR, p. ES-1) It is estimated that the production process will emit approximately 313,000 metric tons of CO₂e (carbon dioxide equivalent) per year into the atmosphere. Additional greenhouse gases will be

¹ These comments are not made on behalf of any other California agency or office.

² This percentage may rise in the future, as studies underway aim at showing that standard automobiles can run efficiently on blends greater than 10 percent.

emitted in construction of the facility. The Project will also produce significant and unavoidable increase in criteria pollutants, specifically NOx in a non-attainment area. (DEIR, p. 3-18)

Global warming is the most serious environmental problem facing California and the nation. While construction of corn-ethanol plants in the State will provide a source of alternative fuel as well as oxygenate for blending a more climate-friendly fuel than unblended gasoline, the greenhouse gas (GHG) emissions associated with ethanol's production cannot be overlooked. New research suggests that the carbon savings from biofuels depend heavily on which production methods are employed to make the fuels.³ The City should be commended for accounting for the GHG emissions associated with all aspects of the production process, including emissions involved in importing corn from the Midwest to serve the plant, and emissions involved in transporting wet distillers grain to local dairies. However, despite correctly concluding that the Project's greenhouse gas emissions are cumulatively significant, the City proposed no measures to mitigate its emissions. We urge the City Council to consider and adopt all feasible mitigation measures to avoid, minimize or offset the anticipated global warming impacts of the proposed project, as required by CEQA.

Ethanol Production

Corn ethanol is the only commercially viable ethanol manufacturing process available right now. Corn ethanol production involves conversion of starch to sugar and fermentation of sugar into ethanol. About 70% of the kernel is used; remaining nutrients are concentrated into distillers grain, a valuable co-product sold as animal feed. A bushel of corn weighs 56 pounds and produces about 2.8 gallons of ethanol and 17 pounds of distillers grain. The production process uses large amounts of water (about 17 gallons per gallon of ethanol produced) and involves direct and indirect use of fossil fuels. It also produces a sizeable stream of CO₂ that is either released or captured and sold, typically to nearby food and beverage plants. Studies show that the ratio of renewable energy produced to nonrenewable energy invested in the production of corn ethanol ("energy return on investment") is positive, ranging from about 0.84 to 1.69. It is, however, a relatively high-carbon renewable fuel – due to fertilizer inputs, acreage needs, and mechanization of the corn industry – especially in California, where the transportation impacts of importing the corn must be factored in.⁴

CEQA Requirements

³Jason Hill, David Tillman, et al., *Land Clearing and Biofuel Carbon Debt*, Science Express Report, February 7, 2008; Timothy Searchinger, Ralph Heimlich, *Use of U.S. Croplands for Biofuels Increases Greenhouse Gases through Emissions from Land Use Change*, Science Express Report, February 7, 2008.

⁴ Taking a comprehensive look at the energy required to produce corn ethanol, one leading research team concludes that corn ethanol provides just 25% more energy than that required for its production. Almost all of this is attributable to the energy credit for its animal feed coproduct, however, rather than to the ethanol itself containing more energy than used in its production. Jason Hill, David Tillman, et al., *Environmental, Economic and Energetic Costs and Benefits of Biodeisel and Ethanol Biofuels*, PNAS, v. 103, no. 30 (July 2006).

As the Legislature recognized, global warming is an "effect on the environment" under the California Environmental Quality Act ("CEQA"), and an individual project's contribution to global warming can be significant.⁵ CEQA was enacted to ensure that public agencies do not approve projects unless feasible measures are included that mitigate the project's significant environmental effects.⁶ CEQA requires that "[e]ach public agency shall mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so."⁷ This requirement is recognized as "[t]he core of an EIR."⁸

Evaluation of GHGs and Significance

The DEIR states that there are currently no guidelines for completing a proper CEQA analysis for greenhouse gas impacts. (DEIR, p. 3-13) However, the lack of official thresholds and guidelines does not absolve the City from its obligation under CEQA to determine the significance of GHG emissions from the project and adopt feasible measures to mitigate any significant impacts.

The City should be commended for accounting for the GHG emissions of operating a corn ethanol plant at the proposed location, taking into account energy and transportation requirements to produce and market both the ethanol and the distillers grain co-product. (DEIR, p. 3-21-24) The DEIR states that the Project will emit carbon dioxide, methane, and nitrous oxides. (DEIR, p. 3-13) The Project analyzes the GHG emissions associated with all aspects of the Project's operations assuming that either 100% of the corn is received by train or that 80% is received by train and 20% by truck (worse case scenario). (DEIR, p. 3-21-24) Under either scenario, the GHG emissions are estimated to be approximately 313,000 metric tons per year of CO₂e. (*Id.*) The DEIR also points out that most of the carbon dioxide associated with the fermentation process can be recovered and sold for commercial use, should a CO₂ market chose to co-locate at the plant site. (DEIR, p. 3-21) If this capture were to take place, the DEIR estimates that it would reduce the GHG emissions of the Project by approximately 185,000 metric tons per year. (DEIR, p. 3-22) .

The Project concludes that "considering the volume of greenhouse gases that would be emitted by this facility annually, this project is considered to have an incremental impact on global climate change that is cumulatively considerable." (DEIR, p 3-26 (emphasis added)) Nonetheless, the Project states that "[n]o mitigation is available to reduce the magnitude of this impact." (DEIR, p. 3-26)

⁵ See Pub. Res. Code section 21083.05, subd. (a); see also Sen. Rules Com., Off. of Sen. Floor Analyses, Analysis of Sen. Bill No. 97 (2007-2008 Reg. Sess.) Aug. 22, 2007.

⁶ Public Resources Code § 21002.

⁷ Public Resources Code §§ 21002.1(b) and 21081; see also, *Mountain Lion Foundation v. Fish and Game Commission*, 16 Cal.4th 105, 134 (1997).

⁸ *Citizens of Goleta Valley v. Board of Supervisors of Santa Barbara County* (1990) 52 Cal.3d 553, 564-65.

Mitigation Measures and Alternatives Analysis

The requirement that a public agency mitigate environment impacts of projects that it approves is at the heart of the EIR process. Because, by the City's own acknowledgment, the global warming-related impacts of this Project are cumulatively "considerable[,] the City must "examine reasonable, feasible options for mitigating or avoiding the project's contribution" to the problem. Cal. Code Regs., tit. 14, § 15130, subd.(b)(5). The DEIR fails to analyze *any* mitigation measures to reduce greenhouse gas emissions associated with any aspect of the Project, stating such measures are not available. Even after receiving comments from the San Joaquin Valley Air District ("SJVAD") urging the Project to incorporate mitigation measures for greenhouse gases, no measures were adopted (FEIR, p. 77-78 (Letter from SJVAD to City, November 14, 2007; and via email November 19, 2007)) The City's failure to analyze mitigation measures violates CEQA and marginalizes the environmental benefit of ethanol by ignoring the emissions required to product ethanol in the first place.

As SJVAD points out, there are a number of measures the City could consider to reduce the Project's GHG emissions. Such measures include, but are not limited to, assessing the feasibility of incorporating into the project measures such as co-generation; requiring in a conditional use permit that a carbon dioxide capture company locate adjacent to the facility; and measures that could reduce the amount of fuel used to transport corn to the site (such as train-engine re-manufacture and train idling restrictions) and the amount of fuel used to transport ethanol from the site to blending facilities (such as the use of 2007 and newer model trucks). The Project could also analyze using reclaimed water from the sanitation district rather than fresh drinking water.

In lieu of on-site mitigation measures, the applicant also could be required to purchase offsets to achieve offsite reductions of GHG emissions. There are numerous opportunities to lower emissions of greenhouse gases in the Central Valley that could be funded through the purchase of offsets. For an example of an offset program established and managed through a local air district, see the Attorney General's settlement with ConocoPhillips, available for downloading at: http://ag.ca.gov/globalwarming/pdf/ConocoPhillips_Agreement.pdf.

We urge the City to consider all feasible mitigation measures to address the greenhouse gas impacts of this Project. Please feel free to contact me if you would like to discuss this Project. Thank you.

Sincerely,

/S/

JAMIE B. JEFFERSON
Deputy Attorney General

For EDMUND G. BROWN JR.
Attorney General