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March 17, 2006

James D. Boyd  
Commissioner, California Energy Commission  
Chair, Bioenergy Interagency Working Group  
Joseph Desmond  
Chairman, California Energy Commission  
Member, Bioenergy Interagency Working Group  
California Energy Commission  
Attention: Docket Unit, Docket No. 06-BAP-1  
1516 Ninth Street, MS-4  
Sacramento, CA 95814-5512

Re: South Coast Air Quality Management District's Comments on the Bioenergy Interagency Working Group's Recommendations for a Bioenergy Action Plan for California "Docket No. 06-BAP-1"

Dear Commissioner Boyd and Chairman Desmond:

The South Coast Air Quality Management District (AQMD) staff appreciated the opportunity to provide comments at the public meeting held at the California Energy Commission's (CEC's) offices in Sacramento on March 9, 2006 on the Report prepared by Navigant Consulting for the Bioenergy Interagency Working Group titled, "Recommendations for a Bioenergy Action Plan for California" (Report) dated March 2006. While the AQMD staff provided comments at the March 9, 2006 public meeting, we would like to provide the following additional written comments.

The AQMD in general supports the use of bioenergy, especially in the area of biogas and biomass, and therefore supports many of the recommendations provided in this report. However, based on the information provided in the Report and public comments at the March 9, 2006 public meeting, the AQMD is concerned that the overall discussion and recommendations for the Bioenergy Action Plan because it solely focuses on the "benefits" of bioenergy and does not properly identify the overall environmental impacts related to the use of bioenergy. The Report should identify other potential impacts specifically related to air

quality and public health implications of criteria pollutant and toxic emissions associated with the use of bioenergy. In addition, the Report specifies, in general, what the state objectives are, however, attainment of state and federal ambient air quality standards, which is not only an objective but also a mandate, is not mentioned anywhere in the Report.

As you know AQMD suffers from the worst air quality in the nation. South Coast is the only area in the nation designated as extreme non-attainment with respect to ozone and nine of the top most polluted areas with respect to PM10 are located in South Coast. This is in spite of the significant progress made in cleaning the air in the South Coast area in the last four decades.

It should also be pointed out that presently the only two municipal solid waste-to-energy plants in California, producing a total of about 50 Mega Watts (MW) of electricity, operate in South Coast; the largest biomass-to-energy plant in California, and possibly the nation, also producing about 50 MW of electricity operates in South Coast; and the majority of the biogas (landfill gas, digester gas, etc.) projects (more than 200 MW of the total statewide 360 MW) also operate in South Coast. The AQMD has also issued permits to the first cow manure-to-biogas energy pilot project using 225 tons per day of cow manure to generate 0.5 MW of electricity (in operation since 2002); AQMD is in the process of issuing permits to construct for a larger scale demonstration project (using 700 tons per day of cow manure and food waste to generate 3 MW of electricity).

As you can see, it is clear that AQMD has supported the use of bioenergy in the South Coast area; however, it is critical to ensure that the Report identifies all environmental and air quality/public health impacts of bioenergy. The AQMD comments regarding the Report are divided into two sections to address both the use of biomass and biogas for generation of electrical power and heat at stationary sources and the use of biofuels for transportation.

### **Biomass and Biogas Generation of Electrical Power & Heat at Stationary Sources**

- The Report indicates (page 25) that, “The costs of dealing with California’s time-consuming and complex siting and permitting process can hamper bioenergy project development,....” It should be noted that based on the information provided in the Report (page 2 of the Executive Summary) and based on public comments provided at the March 9, 2006 public meeting, it is clear that the existing bioenergy projects that had already been permitted and constructed had declined by more than 20% since 1990. This decline was attributed to funding issues and not “time-consuming and complex siting and permitting processes.” As indicated earlier, a significant portion of the existing bioenergy projects in California have been permitted and are operating in South Coast area.
- The Report recommends (page 35) as its first “Tier 1: High-Priority 2006 Actions” to take immediate actions “to clarify and/or change inconsistent rules, regulations and procedures that may be hindering bioenergy development.” In addition, the Report specifies (page 37) as “Recommended Tier 1 Actions for

2006” under recommendation 1(c)(1) to, “Eliminate conflicting regulations, to the greatest extent possible.” However, the Report does not identify what rules or regulations are inconsistent or conflicting that need to be changed.

- The Report specifies (page 37) as “Recommended Tier 1 Actions for 2006” under recommendation 1(c)(4) to “Streamline the permitting of biopower and biofuels conversion facilities.” As indicated earlier it seems like even existing projects which had already been permitted have declined by over 20%, so it appears that funding rather than permitting is the area that needs to be addressed. However, it should also be pointed out that AQMD has been and continues to be fully supportive of any permit streamlining efforts. The AQMD Governing Board adopted a Permit Streamlining initiative in the late 1990s and formed a public/private Permit Streamlining Task Force including representatives from AQMD Governing Board, regulated industry, private businesses, local government, environmental consultants and environmental groups to develop a set of recommendations. The Task Force developed over 35 specific recommendations in the late 1990s that the AQMD Governing Board approved, and AQMD began implementing the recommendations immediately. The AQMD also has created a Permit Streamlining Ombudsman who has worked directly with the Task Force; to date, the Task Force continues to meet and work on additional recommendations to further streamline permitting. Apparently, the Interagency Working Group did not include any local air pollution control agencies, which are primarily responsible for permitting of such facilities, to learn about some of the permit streamlining efforts AQMD and other local air pollution control districts have implemented.
- The Report specifies (page 42) as “Tier 2: Actions for 2006 and Beyond” as part of “Recommended Tier 2 Actions” under recommendation 4 stating, “The California Air Resources Board should improve the review process for the New Source [Review] Rule (NSR) for landfill Gas to Energy (LFGTE) and other biogas power projects. This approach could include developing a state NSR program; developing a single Best Available Control Technology standard for LFGTE projects; and exploring exemptions for biogas power technologies as Pollution Control Projects, essential public services, and resource recovery projects.” Again it should be pointed out that in California, local air pollution control districts are responsible for permitting of such bioenergy facilities and they work directly with CEC on projects that are greater than or equal to 50 MWs for determination of compliance. Each local district has its own NSR rules which apply to these projects. However, all local district’s NSR rules must comply with federal and state Clean Air Acts. Therefore, if a project is subject to Title I of the federal Clean Air Act, it must comply with the Lowest Achievable Emission Rates (LAER) and other federal requirements, whether or not the California Air Resources Board (CARB) has developed a “state NSR program” or “a single BACT.” Furthermore, state law was amended in 2004 (SB288) to prevent local districts from relaxing any BACT requirements in their NSR rules. In addition,

local districts, in general, have incorporated the appropriate incentives for permitting bioenergy projects in their NSR rules. For example, the AQMD has provided exemptions from emissions offsets requirements for LFGTE projects and essential public services such as sewage treatment facilities, etc.; and, we are in fact in the process of amending our NSR rules again this year to consider biosolids projects as essential public services and exempt from emission offsets.

### **Biofuels for Transportation**

- As a starting point, it is important that the report clearly state that the preservation of criteria emission benefits already achieved in the transportation sector through gasoline regulations should not be compromised in any way through future oxygenated fuel policy. Fundamentally, this is a central test of a sound biofuels policy for the state. The report should also recognize that the state already starts with a major deficit with respect to the added permeation emissions created by low-level ethanol blends. The latest estimates from ARB indicate that this is in the range of 30 – 50 tons per day for the South Coast Air Basin.
- Recent changes to federal oxygenated fuel policy, as it relates to a national average Renewable Fuels Standard, may present additional challenges. The commingling restrictions incorporated by the EPA are applicable only up to the fuel nozzle, and do not restrict in any way the possibility of a consumer commingling different formulations of gasoline – some with ethanol and some without – into the same vehicle fuel tank. Such on-board fuel “commingling” has been shown to increase evaporative emissions due to the resulting increased fuel volatility. Thus, in the absence of consistent gasoline formulations, the mixed marketing of ethanol and non-ethanol gasolines in the same air basin, especially during the summer, is very problematic.
- There is important new data which CARB and CEC should carefully assess as they shape their biofuels policy as it relates to transportation fuels. A recent Coordinating Research Council report prepared by the University of California Riverside, CE-CERT, indicates that there are serious potential impacts from the use of low-level ethanol blends which need to be carefully accounted for. For example, the report indicates that when the ethanol content in gasoline is varied from zero percent ethanol to 10%, NMOG emissions increase 14%, formaldehyde emissions increase 14%, benzene emissions increase 18%, 1,3-butadiene emissions increase 22% and acetaldehyde emissions increase 73%.
- The Navigant Report specifically recommends that California revise its approach to emissions regulation by adopting a form of “net benefit” calculus which would allow greenhouse gas emission reductions to “offset” criteria emissions. We believe that the ARB’s approach already reflected in their adopted GHG emission standards is far superior to the approach outlined in the Report. The CEC’s

consultants also understate the importance of permeation in claiming that such emissions are only “transitory” when, according to the ARB, the full mitigation of such emissions would require the turnover of the entire gasoline vehicle fleet, which realistically would take several decades to complete.

- We are also concerned about recommendations made by some stakeholders that more liberal CO for VOC adjustments be made in the predictive model to allow higher level ethanol blends than currently utilized. The ARB has reviewed this issue carefully in a recent report<sup>1</sup>. The CEC’s biofuels policy should strive to be consistent with that report, rather than provide inappropriately high credit for CO reductions to offset increased VOC and NOx emissions associated with certain ethanol-gasoline blends.
- When considering the air quality benefits of transportation biodiesel, the report should not understate nor ignore the possible increases in NOx emissions. The majority of the NOx inventory in the South Coast Air Basin is directly related to diesel vehicle emissions from on-road and off-road sources. The latest Air Quality Management Plan calls on ARB to achieve an additional 408 tons per day of NOx emission reduction from motor vehicles. Any increase in NOx emissions is therefore of major importance. An increase of even a few percent in emissions can be a relatively large increment when you consider that over 2.7 billion gallons of diesel fuel is used annually statewide. The report should therefore not underplay the significance of incremental NOx emission increases associated with low-level biodiesel blends. State policies should aim to ensure that effective additives or other strategies are employed to achieve parity with conventional diesel fuel emissions.
- The current fleet of FFVs in the state operates essentially full-time on conventional gasoline, and therefore provides no air quality benefit typically associated with use E-85. Depending on the certification level of the FFV, if E-85 was used exclusively or predominantly, such benefits could include lower fuel volatility (and hence lower VOC emissions), lower toxic emissions of benzene and 1,3-butadiene, as well as possible GHG emission benefits from a lifecycle perspective relative to gasoline. Emission testing should be expanded to better quantify and update current estimates of the emissions and air quality impacts of wide-scale E-85 deployment. The potential emissions impacts of commingling of various fuel formulations in the same vehicle fuel tank should be carefully examined. There is also a need to promote the continued development and optimization of E-85 compatible vehicles. In the near term, this should include efforts to encourage the certification of FFVs as P-ZEV compliant vehicles. We understand that at least one major manufacturer is close to such certification.

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<sup>1</sup> “The Ozone Impact of Permeation VOC Relative to Carbon Monoxide”, January, 2006, CARB Research Division, <http://www.arb.ca.gov/research/reactivity/co0206.pdf>

- Due to the long-term importance of cellulosic ethanol as a possible supplemental source of transportation fuels, we believe that California should establish several prominent cellulosic alcohol research centers, perhaps one in Northern California and one in Southern California. Such centers could be established in close affiliation with major universities to conduct cutting edge enzyme development, gene engineering, lignen-compatible conversion technologies such as gasification, and other research paths. California need not depend on the U.S. Department of Energy's Renewable Energy Research Lab as the sole source of innovation in this vital area.

In conclusion, we would like to reiterate the AQMD's support for the use of Renewable and Bioenergy, provided they comply with applicable air quality and public health standards. Therefore, although the AQMD staff supports many of the recommendations in this Report, the AQMD staff recommends that the Report be revised to incorporate and to address our concerns as stated in this letter.

If you have any questions related to Biomass and Biogas Generation of Electrical Power & Heat at Stationary Sources please contact Mohsen Nazemi, Assistant Deputy Executive Officer, at (909) 396-2662, and for questions related to Biofuels for Transportation please contact Paul Wuebben, Clean Fuels Officer, at (909) 396-3247. Thank you again for providing the opportunity to comment on the The Bioenergy Action Plan for California.

Sincerely,



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BRW/MN/PW/ph

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