DOCKET
06-AFP-1
DATE NOV 3 2006
RECD. NOV 3 2006

American Lung Association of California
Center for Energy Efficiency and Renewable Technologies
Coalition for Clean Air • Energy Independence Now
Natural Resources Defense Council • Union of Concerned Scientists

November 3, 2006

James Boyd, Vice Chair; Presiding Member, Transportation Committee
Jeffrey Byron, Commissioner; Associate Member, Transportation Committee
Robert Sawyer, Chairman, CARB
California Energy Commission
Docket Office
Attn: Docket 06-AFP-1
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

Dear Commissioner Boyd, Commissioner Byron, and Chairman Sawyer:

We appreciate the opportunity to comment on the state's Alternative Transportation Fuels Plan pursuant to AB 1007. Greater use of alternative fuels can help the state meet its obligations under AB32, achieve the goals of the Governor's Climate Change Executive Order and Bioenergy Action Plan, and reduce global warming and other air pollution.

California, and the U.S. as a whole, is at a critical juncture. We can either continue on our current path of high petroleum usage, with its attendant environmental problems, or we can chart a new course. A new course would rely on a suite of low-emission alternative fuels, many of which can be produced in California, and would provide cleaner air and protect against the most severe consequences of global warming.

We focus our comments first on the general tone and structure of the Draft California Alternative Fuels Market Assessment 2006, and then provide more detailed comments on key sections.

General Comments

Provide vision for increased use of alternative fuels
The draft Market Assessment evaluates the current state of alternative fuels, alternative fuel vehicles and infrastructure, focusing on barriers to usage rather than offering a vision for achieving significantly increased penetration. The draft Market Assessment provides a "business as usual" evaluation that does not account for the potential for rising fuel prices, progressive state policies, or legislative mandates (AB 32 and AB 1493) to shift demand away from high-carbon, petroleum-based fuels. It also falls short in that it projects future alternative fuel supply by simply multiplying existing production figures. This method fails to fully quantify true potential because it doesn't factor in production options that are not in use today. To meet the statutory requirements of AB 1007, CEC and ARB must develop a plan for overcoming these barriers through innovative policies and programs to drive California forward toward successful development and proliferation of alternative fuels and vehicles.

Staff indicated October 16 that its plan was to address future opportunities in the scenario analysis, which staff described as an "if-then" type of analysis. Staff's stated plan for the scenario analysis seems to be a different exercise than a true market assessment, which should offer a detailed analysis of the future market for each fuel and alternative fuel technology based on a strong, quantifiable basis.

Staff has further stated that the Market Assessment is meant to be a simple snapshot of the state of fuels today. If that is the case, then the report should not make any future predictions, yet it does; it makes premature and pessimistic predictions about the potential for several fuels based on current conditions, and optimistic predictions for others. It concludes that E85 has no business case, electricity cannot provide significant petroleum reductions, natural gas has an uncertain future as a transportation fuel, and biodiesel could only displace one percent of diesel fuel under optimistic assumptions, yet it also indicates that many believe hydrogen fuel cell vehicles will become the predominant mode of transportation in the United States. These conclusions are not balanced, and many are made without a strong, quantified basis, implying that some alternative fuels should not be pursued.

We need to pursue all alternative fuel options that will reduce petroleum consumption and global warming pollution while meeting or exceeding California's stringent air quality requirements. Therefore, we recommend that the CEC refrain from making comments that appear to categorically dismiss fuels that can meet these objectives.

Avoid high-carbon alternatives

While the report identifies significant barriers to low-carbon alternatives, it finds that there are "no barriers to preventing FT diesel." The report fails to mention the potential increase in greenhouse gas emissions from FT diesel, especially coal to liquids. We recommend that CEC and ARB exclude high-carbon alternative fuels from consideration in this report. The legislative intent of AB 1007 is to evaluate fuels that will reduce both petroleum consumption and greenhouse gas emissions, while not increasing any other pollutants. High-carbon fuels such as coal-to-liquids and petroleum coke to liquids (even with sequestration) are incompatible with the goals of AB 1007.

Provide stakeholder access to energy price forecasts

As with any analysis, the Market Assessment, scenario and lifecycle analyses that will be prepared as part of this process all will be affected by the assumptions used. There is a history of disagreement between stakeholders and CEC on energy price forecasts, which have generally erred in favor of traditional gasoline and diesel, at the expense of alternative fuels.

We urge staff to work closely with stakeholders on these assumptions and to offer stakeholders an opportunity to review prior staff documents regarding energy price forecasts. Since many of these prior documents will be incorporated into the upcoming analyses, stakeholder input before the work is underway is critical to ensuring accurate, consistent findings.

Detailed Comments

Section 2. Natural Gas

Impact of 2007/2010 Emissions Standards: The section on natural gas for heavy-duty applications focused primarily on today's vehicles, rather than future vehicles and technologies. There is a very limited and general discussion of how the 2010 emissions standards will impact life cycle costs under "Barriers and Opportunities for Expansion," but the information is buried in a single paragraph. Rather, the sections on fuel economy and incremental vehicle costs should be expanded to include a discussion of mature technology, stoichiometric NG engine performance and how compliance with 2010 standards is anticipated to impact diesel engines and costs. TIAX should reference its 2005 study, "The Comparative Costs of 2010 HDD and NG Technologies." The study anticipated that the fuel economy for stoichiometric natural gas engines is 95 percent of the 2010 diesel engine. Today's natural gas engines can nearly meet the 2010 standards, while diesel engines must employ sophisticated aftertreatment devices. Diesel emission controls increase the fuel consumption and operating cost of the engine, due in part to increased back pressure and to the need to either regenerate traps or activate NOx controls through a fuel reagent. This section should also evaluate maintenance costs for current and future generation diesel versus natural gas vehicles.

Overall assessment: As we noted above, the overall assessment should not claim that the future of natural gas is uncertain. Rather, the assessment should recognize that policies in place have spurred the development of natural gas technologies, with California leading the country in the number of NGVs on the road. The report should acknowledge that the state needs a new set of policies in place to stimulate vehicle production by OEMs and develop a mature market.

Section 4. Electricity

We strongly recommend the report be modified to reflect the comments presented by David Modisette, of the California Electric Transportation Coalition, at the first AB 1007 workshop on October 16, 2006. As Mr. Modisette noted, the report failed to highlight the benefits of the current non-road electric vehicle population and market drivers for continued penetration; discounted recent improvements in battery, hybrid-drive and electric-drive technology; and most concerning, claimed that grid-supplied electricity is not forecast to reduce petroleum transportation fuel use in the state.

Ironically, TIAX has a study that evaluates the potential for electric vehicles, "The Benefits of Electric Transportation and Goods Movement Technologies." The TIAX report estimated that electric vehicles could displace nearly two billion gallons of gasoline per year by 2020. The report should be modified to reflect accurate population data and current market trends, and should refrain from inaccurate statements of the potential for electricity to displace petroleum.

Section 5. Ethanol

Air Quality: There should be more attention to the air quality issues with low-blend ethanol, particularly regarding non-road engines. CARB is currently updating its predictive model for

RFG3 and is analyzing how fuel formulation changes may be able to address permeation emissions from E10 and lower blends in highway vehicles. But based on data from six gasoline lawnmowers, non-road engines (including pleasure craft) may have higher permeation emissions than highway vehicles. CARB needs to conduct studies on the impact of low-blend ethanol on non-road engine emissions and on the emissions of E10 to E85 in both highway and non-road engines.

Barriers and Opportunities for Expansion: The ethanol section concludes that a business case for E85 may exist in the Midwest, but it is not likely to exist in California for many years. Again, this pessimistic view is grounded in today's current climate where ethanol demand and prices are being largely driven by a national phase-out of the MTBE gasoline additive. The report should instead identify opportunities for expansion of sustainably produced ethanol through increased state production of ethanol, imports from other countries/states, and strong state support for advancement in cellulosic ethanol production.

Section 6. Alternative Diesel Fuels, Biodiesel

Biodiesel and Engine Warrantees: As discussed during the October 16th meeting, manufacturers universally warrant their engines up to B5, but not all warrant higher blends.

Barriers and Opportunities for Expansion and Overall assessment: The report identifies a long list of barriers to renewable biodiesel, and no barriers to use of FT diesel. Given that biodiesel use can reduce particulate and greenhouse gas emissions, there are significant reasons for the state to continue investigating in-state production issues related to biodiesel blends, working to resolve air quality and other challenges, and promoting use of biodiesel where it can have the greatest air quality and environmental benefit. In addition, there is no mention of the potential for FT diesel to increase greenhouse gas emissions or that FT from NG is likely to be imported from politically unstable countries. We recommend that this section provide a more accurate assessment of the expected benefits of biodiesel and the drawbacks of FT diesel.

We also note that there are other pathways to "renewable" diesel that may be able meet necessary state and federal standards, plus others in development that have not yet come to light or have yet to be commercialized. CEC should evaluate these other options and their ability to meet state and federal standards. Given the relative immaturity of certain segments of the biofuels industry and alternative fuels industry in general, the Market Assessment should not be seen as picking winners and losers.

Section 7. Hydrogen

The Overall Assessment for hydrogen provides an overly optimistic future scenario without a basis for that future vision, and minimizes the barriers that hydrogen still faces. The Market Assessment for hydrogen concludes that "...many public- and private-sector experts believe that direct-hydrogen fuel cell vehicles will gradually replace internal combustion engine vehicles as the predominant mode of transportation in metropolitan areas throughout California and the United States."

Hydrogen vehicles can help reduce transportation emissions and petroleum consumption. The potential for hydrogen vehicles to satisfy transportation demand is not limited by resource availability, but, rather by market barriers such as the cost of developing infrastructure, improving vehicle range, and lowering vehicle costs.

The optimistic Overall Assessment suggests that other fuels lack significant future penetration. Additionally, the focus on a single fuel solution is inconsistent with the state's desire to pursue multiple clean fuel pathways.

Conclusion

The CEC and CARB have an opportunity to promote thoughtful, proactive policies to increase alternative fuel use and reduce harmful pollution. The draft Market Assessment, while providing some useful information, is inconsistent in its treatment of different fuels. These problems underscore the need for CEC and its contractors to work more closely with concerned individuals and groups, especially the alternative fuel interests, to obtain more accurate input into the information used in the Market Assessment.

We look forward to assisting the state in moving the market towards alternative fuels and building a sustainable transportation system.

Sincerely,

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