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July 8th, 2011

James D. Boyd
Vice Chair and Presiding Member
Transportation Committee
California Energy Commission
Dockets Office, MS-4
Re: Docket No. 10-ALT-1
1516 Ninth Street
Sacramento, CA 95814-5512

RE: Comments on the 2011-2012 Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program Re Biofuel Funding Allocations (Docket 10-ALT-1)

To Vice Chair Boyd,

Friends of the Earth would like to thank the California Energy Commission (CEC) for the opportunity to comment on the draft 2011-2012 Investment Plan for the AB 118 Alternative and Renewable Fuel and Vehicle Technology Program, particularly with respect to funding allocations made towards biofuels in the Plan. Friends of the Earth recognizes and acknowledges the intensive efforts put forth by CEC Staff and Commissioners to promote low-carbon alternative fuels through the AB 118 funding program. The Commission is to be particularly commended for recognizing and commenting in its 2011-2012 draft Investment Plan on the detrimental environmental and social impacts that often arise from the production and use of biofuels. Friends of the Earth agrees that it has become undoubtedly clear that biofuels are by and large not meeting their purported environmental promise—on the contrary, biofuels are creating a whole host of new environmental and social problems globally.

However, Friends of the Earth is concerned that the State is demonstrating a continued bias towards prioritizing funding towards biofuels at the expense of cleaner and more sustainable alternative fuels. As the Commission knows, biofuels have been promoted for many years as an environmentally sustainable solution to our transportation energy demands. Unfortunately, biofuels have largely not lived up to their promises and so-called “advanced” biofuels are even

further away from commercial scale than once imagined. However, despite increasing evidence that the adverse environmental and social impacts from today's biofuels (especially corn ethanol) may outweigh their alleged environmental and energy security benefits, biofuels continue to be promoted through multiple state incentive and subsidy programs to support their production, including the AB 118 funding program.

Our main concern ultimately lies in the fact that the AB 118 funding program, in concert with the Low Carbon Fuel Standard and the State's 2011 Bioenergy Action Plan, creates a web of funding, incentives and subsidy programs which directly and indirectly promote biofuel production, with a particular focus on ethanol. As the current AB118 draft 2011-2012 Investment Plan states:

At the state level, ARB's Low Carbon Fuel Standard outlines four scenarios for achieving GHG emission reductions from gasoline, each of which prominently includes contributions from ethanol. These scenarios include a broad range, from 2.2 billion gallons to 3.1 billion gallons per year by 2020. The state's Bioenergy Action Plan established a 2 billion gge target for biofuel consumption by 2020, in which ethanol is likely to feature prominently. The state's Bioenergy Action Plan also calls for 20 percent of the state's biofuel consumption to be met by in-state resources. For ethanol, this will entail approximately 500 million gallons per year in additional production (in addition to the full resumption of production at existing plants) [page 94].¹

Simultaneously, the funding allocation in the 2011-2012 AB 118 Investment Plan for ethanol was the highest of any individual fuel type (funded at \$12.5 million). Furthermore, biofuels as a fuel class received the most prominent funding allocation of all the fuel types funded, with ethanol, biomethane and diesel substitutes capturing \$40 million—close to half of the entire AB 118 funding program's annual budget of \$100 million (including the California Ethanol Producer Incentive Program). On the contrary, electric vehicles (EVs) captured only \$18 million of the 2011-2012 AB 118 investment funding allocations, which is less than half of the biofuel funding allocations. While FOE understands that the CEC has dedicated significant funding to EVs over the last three funding cycles of the program (including funding from ARRA), we are concerned that in the current funding cycle of the program funding for EVs is low and unbalanced in comparison to funding for biofuels. We believe that this over-allocation

¹ All quotes and page numbers referred to in these comments are from 2011-2012 Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program (CEC-600-2011-006-SD)

of state funds towards biofuels demonstrates a state bias towards an alternative fuel type which is under scrutiny worldwide for its detrimental social and environmental impacts.² With our comments and recommendations below, we urge the State to reconsider its stance towards promoting biofuels (even “advanced” or “waste” biofuels) and invest money in cleaner and more sustainable alternative fuel types, like electric vehicles. Below we have summarized our concerns with the current 2011-2012 draft AB 118 Investment Plan:

The Investment Plan should not invest in or promote, directly or indirectly, corn ethanol.

Allocations for ethanol (likely corn ethanol) in the 2011-2012 Investment Plan include 1) \$7.5 million for the construction of advanced cellulosic ethanol production plants; 2) \$5 million towards E85 retail fueling stations; 3) \$6-\$9 million for the California Ethanol Producer Incentive Program (CEPIP).

We acknowledge the work that the Commission is doing to invest resources in advanced biofuel production such as cellulosic ethanol and waste fuels in general. However, we question the environmental benefits of so-called “advanced” biofuels, as well as the economic benefits. As the Investment Plan states, “these types of renewable fuel technologies [advanced biofuels] have not been demonstrated to be commercially successful” and “the EPA has significantly reduced the cellulosic renewable fuel requirement due to lack of production capacity... reducing the RFS cellulosic requirement for 2011 down from 250 million gallons to 6 million gallons.” [page 94]. Furthermore, the Commission notes that further sustainability studies are needed on these fuel types to determine impacts and benefits [pages 143-144].

In light of this information, it is very likely that the ethanol used in the state for years to come will be conventional corn ethanol from the Midwest region of the United States [pages 93-94]. Therefore, the \$5 million in AB 118 funding allocated towards E85 fueling stations will promote, directly and indirectly, the use of likely very unsustainable corn ethanol. Given the widespread sustainability concerns associated with this fuel type, as well as lifecycle GHG impacts, Friends of the Earth cannot support an Investment Plan that would make this funding allocation and recommends that the Commission re-allocate this funding to more sustainable and truly clean alternative fuel types or, because the Commission must meet RFS2 obligations, we urge the

² Hazell, P., Pachauri, R. K., Document Overview. Bioenergy and Agriculture: Promises and Challenge. International Food Policy Research Institute, 2006; Hertel, T. W., et al., 2010. Global Land Use and Greenhouse Gas Emissions Impacts of U.S. Maize Ethanol: Estimating Market-Mediated Responses. BioScience. 60, 223-231; Searchinger, T., et al., 2008. Use of U.S. croplands for biofuels increases greenhouse gases through emissions from land use change. Science. 319, 1238-1240.

Commission to require that the ethanol used via these fueling stations meets stringent, comprehensive sustainability standards.

The corn ethanol industry has grown at a rapid pace over the last decade. As the draft Investment Plan states:

Between 1997 and 2010, nationwide production [of corn ethanol] has increased more than 19.5 percent per year, with approximately 13.1 billion gallons of ethanol produced in 2010. Similar increases in ethanol production were seen within the state of California throughout the previous decade. Between 2004 and 2008, California ethanol production capacity grew at an average annual rate of over 55 percent to its current capacity of 240 million gallons per year [page 93].

If the corn ethanol industry has grown at such a rapid pace, in no small part due to the enormous boost given to the corn ethanol industry by the Renewable Fuel Standard (RFS2) mandate, the replacement of MTBE as a gasoline additive, and California's reformulated gasoline standards, FOE questions the Commission's decision to use limited AB 118 funds to promote a fuel that 1) has already achieved widescale market adoption, 2) has substantial federal backing through incentive and subsidy programs (although we are aware that the VEETC tax may be repealed) and, 3) has demonstrated dubious environmental benefits. Additionally, the state's Bioenergy Action Plan calls for 20 percent of the State's biofuel consumption to be met by in-state resources, and it has been estimated by the Commission that this will entail approximately 500 million gallons per year in additional production of ethanol. As we understand it, the goals of the AB 118 funding program is to help fledging alternative and renewable fuels and vehicles gain the seed money necessary to enter the marketplace and compete. We do not understand the goals of the AB 118 funding program to be that of helping large alternative fuel industries grow larger.

However, as the Investment Plan states:

"The profitability [recently] of the U.S. ethanol industry has fluctuated with gasoline price and demand as well as corn prices. Consequently, in recent years the industry has had very narrow margins... this poor performance has occurred despite a number of policy actions that support the ethanol industry including [the Volumetric Ethanol Excise Tax Credit, the Secondary Tariff on Ethanol, the Small Ethanol Producer Tax Credit, and the Cellulosic Biofuel Producer Tax Credit]." [page 95]

Again, as we understand it, one of the principal goals of the AB 118 funding program is to help new, low-carbon alternative and renewable fuels *with promise* enter the marketplace and compete. We question why the Commission would dedicate AB 118 funding towards a fuel type with poor performance that has not succeeded well in recent years, especially despite the substantial federal tax credits and subsidies which support it. We ultimately urge the Commission to reduce its funding emphasis on ethanol to the extent possible given RFS2 requirements and focus funding on more sustainable and truly clean fuel and vehicle types, such as electric vehicles.

The California Ethanol Producer Incentive Program (CEPIP) should be eliminated.

The California Ethanol Producer Incentive Program (CEPIP) has been allocated between \$6-\$9 million in initial funding by the AB 118 program, which is more than what has been allocated to electric vehicle infrastructure for the same time period (e.g. \$8 million between 2011-2012). The stated goal of the CEPIP is that the fund will provide existing corn ethanol plants with temporary financial assistance during periods of difficult economics. The funding is to be repaid once more favorable market conditions are achieved. According to the current draft Investment Plan, the CEPIP would also boost improvements at these plants and promote the use of advanced process technology to convert cellulose and other low carbon feedstocks into “advanced” ethanol.

In response, a number of questions arise for FOE regarding the viability of the CEPIP. For example, what if a plant defaults on payments or fails? Will repayment take place or will AB 118 funds be defaulted on? If there is a chance of default, is this program the best way to allocate funding when the goals of AB 118 funds is to identify the alternative fuel technologies with the greatest promise of market adoption and provide the seed money or capital to help jumpstart their entrance/success in the marketplace?

Furthermore, there seem to be internal discrepancies between the multiple goals of the CEPIP program itself. The first goal of the CEPIP is to keep biorefineries operational if they hit hard financial times. The second goal is to provide funds that will be used to boost improvements and promote advanced process technology. These goals, upon initial consideration, seem to be at odds with each other. If a plant is struggling to keep its doors open, how likely is it that CEPIP funds will be used to buy new “advanced processing” technologies? Furthermore, is it financially viable to retool such plants to produce advanced fuels from

municipal, agricultural and forest waste streams which the Investment Plan itself notes, “at this time, these types of renewable fuel technologies have not been demonstrated to be commercially successful” [page 94]?

FOE is concerned that the \$6-\$9 million in funding allocated to the CEPIC could ultimately be used to support older, dirtier ethanol refineries—helping them stay in business without any achievements in upgrades or improvements. FOE requests more information on what safeguards are put in place in project solicitation criteria to ensure that CEPIC funds do indeed go towards retrofits and upgrades for advanced cellulosic processing. And, from past experience, has data been collected determining what percentage of program funds ultimately go towards saving plants from failing vs. re-tooling them for advanced biofuel production? Do pre-conditions on the loans require that funding be spent towards upgrades, and if so, how is this monitored for compliance?

Given these questions and concerns, we believe that AB 118 funds would be better spent on promoting the development of cleaner, more sustainable fuel types and technologies than corn ethanol and ethanol refineries. In short, FOE believes that the CEPIC should be eliminated. The current draft Investment Plan already allocates \$7.5 million towards “the development of new production facilities that can convert sustainably-derived cellulosic feedstocks into low-carbon ethanol” [page 94]. Therefore, a substantial amount of AB 118 money (roughly the same as allocated to EV infrastructure) is already being driven towards advanced cellulosic ethanol.

In light of these concerns, FOE was pleased to see in the Investment Plan that Commission staff is willing to reevaluate the future of the CEPIC. As the Investment Plan states:

Given uncertain market conditions and future price projections, it is unclear whether a modest state price support program can offset the impacts of this unprecedented change in the ethanol fuel market. As a result, the Energy Commission will reevaluate the future of the CEPIC and study the benefits from its proposed \$6 million investments before making a recommendation on funding [page 96].

FOE wholeheartedly agrees with this line of reasoning and believes that the AB 118 funds allocated to CEPIC could be re-allocated to have a much larger impact on other, less funded, but truly cleaner fuel options such as electric vehicles. If the ethanol market is already demonstrating poor performance while being propped up by massive federal subsidies, we cannot see how limited AB 118 funds will make a positive impact on the fate of this fuel type,

notwithstanding the environmental arguments against the continued promotion of a fuel type with a poor track record of environmental and social performance.

Do not fund biofuel projects until comprehensive, in-depth sustainability studies from neutral, third-party entities have been conducted.

We at FOE understand that not all biofuels are created equal and we are interested in the Commission's emphasis on funding "advanced" or "waste" biofuels. The Commission claims that, "These waste-based feedstocks avoid difficult issues such as the use of high productivity arable lands for fuel production, sustainability or indirect land use effects." [page 69]. Yet later in the Investment Plan, the Commission asserts:

Sustainability assessments need to be expanded from the project level to the regional level to develop a more comprehensive understanding of how increased bioenergy crop production in California could be integrated into existing cropping mixes without adversely affecting food crop or animal feed production, agricultural water use, or wastewater discharges... similar regional studies for bioenergy crops such as algae and perennial grasses might also be needed as the commercial viability of these crops and their associated process technologies mature. Specific studies are also needed on water use, wastewater discharge, land use, and fertilizer and pesticide inputs." [pages 143-144]

The Investment Plan acknowledges the need for extensive and in-depth studies to be conducted on the sustainability of biofuels grown and processed in the state, yet the Commission is allocating a substantial portion of its annual budget towards biofuel infrastructure development projects before these sustainability studies have apparently been launched and/or completed. FOE urges the Commission to freeze (in the short term) and eliminate (in the long term) AB 118 funding for biofuel projects which have not been screened properly for lifecycle impacts through sustainability studies such as the aforementioned. FOE believes that no state funding should be allocated to promote a fuel type which is known to incur major social and environmental impacts when sustainability and lifecycle studies, which the Commission itself states as necessary, have not been carried out.

Are so-called "advanced" biofuels truly advanced?

Friends of the Earth questions whether some of the "advanced" biofuels defined by the Energy Commission in the current draft Investment Plan are in fact "advanced". Advanced

biofuels are widely recognized/acknowledged to be further away from commercial production than originally anticipated, and advanced biofuels are not necessarily sustainable (as the Investment Plan quote above confirms). For example, algae is being hailed as a promising new advanced biofuel, but reports have begun to circulate that numerous companies are employing GMO technologies in algae production for conversion to biofuels.³ In the case of woody biomass for ethanol and biomethane, it is questionable whether these “advanced” biofuels are truly more sustainable than other alternative fuel types, or even conventional biofuels in some cases. As noted by the Investment Plan: “Substantial technical and scientific field work are needed to establish sustainability definitions and standards for the emerging woody biomass fuels industry.” [page 143] Yet advanced biomethane and ethanol production plants are being funded for construction through the AB 118 program for “waste” fuels based on woody biomass extraction from state forests *before* sufficient sustainability studies (from neutral, third-party sources) have been conducted. FOE calls into question whether such energy sources are, in fact, “advanced” or ready for processing into biofuels if substantial work still needs to be done to determine their sustainability. We therefore urge the Commission to halt funding of these new fuel types until the necessary studies have been conducted.

There is a new trend emerging globally in which forest management projects and policies based on promoting woody biomass extraction projects in public and private forests are being hailed as key climate change solutions. These policies define small trees and forest floor “debris” such as dead wood, wildfire “left-overs”, snags or standing dead trees, shrubbery and other forest undergrowth, as “waste” material or “forest residue” which proponents claim can and should be converted to alternative fuels and low-carbon energy. Some of these policy perspectives, in which forest “waste” materials can be converted to “advanced” biofuels, are based on studies by the California Department of Forestry and Fire Protection (CDFFP) [page 75]. FOE does not consider CDFFP to be a neutral party on the issue of woody biomass extraction and urges the Commission to seek and fund sustainability studies from neutral, third-party sources that do not have a vested interest in the outcome of such studies.

Furthermore, the Commission has stated that it is working actively with CalFire and the U.S. Forest Service “... to further define and establish sustainability standards for forest management and thinning.” [page 76]. However, from FOE’s perspective, the Forest Service’s

³“Companies Reported to be developing Genetically Modified Algae for Biofuels”: <http://dglassassociates.wordpress.com/2010/03/17/companies-reported-to-be-developing-genetically-modified-algae-for-biofuels/> ; “Questions Emerge about Genetically Engineering Algae as Biofuels”: <http://cleantechnica.com/2011/04/06/questions-emerge-about-genetically-engineering-algae-as-biofuels/>

recent history demonstrates a bias towards supporting logging and woody biomass extraction from forests to the detriment of the health and longevity of such forests. Friends of the Earth questions the wisdom of following the “sustainability” guidance of an agency that has a vested interest (and we would consider conflict of interest) in gaining revenue from these forests. Especially since the Commission itself has noted, as above, that “Substantial technical and scientific field work are needed to establish sustainability definitions and standards for the emerging woody biomass fuels industry”, we urge the Commission to halt any progress towards allowing or promoting woody biomass extraction and conversion to biofuels immediately until further study and consultation with stakeholders has taken place.

Reallocate funding from biofuels to cleaner alternative fuel options

While we at Friends of the Earth understand that the intent of the AB 118 Investment Plan is to have a balanced approach to funding allocation and spread that funding across many alternative fuel types, we are concerned that in the 2011-2012 Investment Plan only \$18 million of the approximate \$100 million annual budget is allocated to plug-in electric vehicles—an alternative fuel and vehicle type which offers the greatest near-term promise of reducing greenhouse gases the most dramatically, especially compared to biofuels such as corn ethanol. Meanwhile, biofuels captured approximately \$40 million of funding allocation in the 2011-2012 plan—more than double that of funding allocated to EVs. We believe that this is an over-allocation of funds towards biofuels, especially when analyzed in light of other state programs that incentivize biofuel use (directly or indirectly), such as the Low Carbon Fuel Standard.

Specifically, as the Investment Plan has noted, one of the areas that needs the most attention vis-à-vis electric vehicle adoption is that municipalities streamline their permitting processes for EV infrastructure investment. The AB 118 funds allocate only \$1 million towards these efforts [page 27], yet local non-readiness will be a major barrier to the market success of EVs. The barrier of trying to navigate confusing, conflicting and time- and labor-intensive permitting processes for EV infrastructure is a real threat to the widespread adoption of EVs.

FOE recommends that more AB 118 funding be allocated towards these efforts versus funding alternative fuel types with dubious benefits such as biofuels. Electric vehicles are arriving at dealerships and coming into the consumer market at increasingly rapid rates, and electric vehicle infrastructure is essential for the success of this important fuel and vehicle type to capture widespread market acceptance and success. Friends of the Earth has produced a report on this issue, outlining recommendations for how streamlining of permitting can take place,

which has been circulated amongst San Francisco Bay Area governments and CEC staff. Please see the attached report entitled *A Survey of Bay Area Permitting Procedures for Electric Vehicle Charging Infrastructure*⁴.

Conclusion

Friends of the Earth is strongly supportive of measures and strategies to reduce greenhouse gas pollution from our transportation sector which do not create adverse environmental and social impacts. For the current draft 2011-2012 AB 118 Investment Plan, we strongly urge the California Energy Commission to give careful consideration to the public and environmental costs and benefits arising from the alternative fuel types and vehicles it promotes, especially with respect to biofuels. The Commission should fund the cleanest alternative and renewable fuel and vehicle technologies available through the AB 118 funding program. Friends of the Earth does not believe that biofuels, including “advanced” or “waste” biofuels, qualify as the cleanest of fuels. We urge the Commission to reconsider its funding allocations in the draft 2011-2012 Investment Plan in light of the above comments.

Thank you for your consideration.

Sincerely,



Sara Schedler

Clean Vehicles Program Coordinator

Friends of the Earth

⁴ A copy of this report can be viewed at the following web address:

http://FOE.org/sites/default/files/Friends%20of%20the%20Earth_EV%20Charger%20Permitting%20Report_FINAL%205.pdf