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Via Email and Electronic Submittal
Bob Fletcher
Division Chief
Stationary Source Division
California Air Resources Board

Subject: BP America Comments on California Air Resources Board's (CARB) Proposed Regulation to Implement the Low Carbon Fuel Standard

Dear Bob:

BP submitted comments to CARB's Proposed Concept Outline for the California Low Carbon Fuel Standard Regulation in November and May of last year. In this current correspondence we would like to address issues raised in the March 2009 Proposed Regulation as well as take the opportunity to emphasize key points of our previous letters which we believe have yet to be completely addressed by CARB staff.

The Carbon Intensity Reduction Targets for Gasoline and Diesel

As an energy provider who is an industry-leading investor in second generation biofuels, we have significant concerns with the proposed 10% AFCI reduction targets for both the gasoline and diesel targets. The University of California's (UC) LCFS reports concluded that a 10% reduction in the carbon intensity of light duty vehicle fuels, as defined in the report, would be challenging but technically feasible. We have discussed with staff the concepts in their draft regulation that would further reduce the feasibility of meeting the 10% AFCI reduction target for gasoline. These concepts include the unwillingness to allow the reduction in GHG's associated with the use of diesel to displace gasoline in light duty vehicles and the effect of indirect land use change. We had concluded, that a 10% AFCI reduction for the gasoline pool could be achieved under an optimistic set of assumptions around technological advancement, including the beneficial impact from diesel use in LDDV's, availability of biomass, and if the inclusion of indirect land use change (ILUC) did not unduly reduce the benefits of low carbon biofuels such as cellulosic and sugar derived ethanol.

It is worth recognizing the concerns regarding the attainability of GHG intensity reduction targets under similar regulatory initiatives elsewhere in the world. In the EU, Member States are proposing reducing the 2020 10% GHG emission reduction target in Article 7a in the Fuels Quality Directive from 10% to 6%, in order to more properly align this target with the biofuels target within the Renewable Energy Directive, recognizing that biofuels are the primary means to achieve such a target, and given the likely timing of commercial availability of advanced / 2nd generation biofuels.

We urge CARB staff to carry out a rigorous analysis of the feasibility and cost of the LCFS that goes beyond supporting pre-existing reduction targets. The results of the feasibility and cost analyses should inform the setting of gasoline and diesel targets that potentially differ from current targets. The analysis should also include, as an option, a diesel AFCI reduction target of 5% along with an analysis of the cost, benefit and risks of moving from a 5% diesel AFCI reduction to the 10% reduction.

Indirect Land Use Change

BP believes that the science of ILUC as it has evolved today justifies addressing the potential impact of biofuels on global land management practices. However, we are very concerned that the current ILUC mechanism, employing an economic model to quantify an ILUC add-on factor for GHG lifecycle analysis, is not scientifically or methodologically robust.

We believe it is critical to avoid introducing mechanisms that, while well-intentioned, may be so flawed as to deliver the wrong or perverse, unintended outcomes. Imposing ILUC GHG factors now, based on data and models which are still very uncertain, risks jeopardizing the realization of significant improvements in land utilization which biofuels may be able deliver to the agricultural sector in the future. ARB should thus approach these issues extremely carefully and employ robust science and policy mechanisms to achieve their intended goals and avoid unintended consequences. **We thus believe it would be appropriate for ARB to initiate an ILUC working group to investigate these issues further in advance of adopting any ILUC value for any pathway.**

We are aware that despite significant uncertainty of the kind described above, ARB remains inclined to include a value in GHG lifecycle analysis for ILUC factors for all biofuel feedstocks. If this should be the outcome, BP offers the following recommendations as a compliment to the proposed ILUC Working Group to ensure that the risks of applying uncertain factors are reduced:

- Initial values for each feedstock should be fully vetted with the impacted biofuels sector with sufficient time to review. Where alignment is not reached on an input assumption, an aligned approach should be developed to acquire the appropriate data to inform the assumption or data input.
- It is important to ensure that CARB model mechanisms are aligned with parallel efforts to assess ILUC by the EPA. Where outputs or mechanisms substantially differ, transparent explanations should be published, detailing the variations in assumptions or model mechanisms which lead to the differences in outputs.

- When faced with an assumption for which a range of values can be used and there is no technical reason to select a high or low value, we suggest that middle values be employed to avoid conservatively penalizing or rewarding biofuels without justification.

As the science evolves, the ILUC values will need to be updated for all fuel pathways. We therefore suggest that ARB consider provisions that enable the timely adoption of appropriate new ILUC values for new commercial investments but also protect existing assets with the choice to transition gradually to updated numbers.

- New Build Projects should be allowed a two year notice period before new values are actually adopted for a new plant. This two year delay allows plants that have already invested heavily in planning and development but have not commenced construction to maintain the ILUC assumptions upon which they predicated their decision to invest.
- Operating Facilities should be allowed the choice to have a transition window of sufficient time to ensure reasonable amortization of capital. It should be recognized that Novel Feedstock Industries (cellulosic or algae feedstocks or advanced biofuel conversion technologies that create improved biofuel molecules) should be allowed a longer transition window to account for the longer commercialization cycle.

We recommend that ARB consider a set of supplementary mechanisms which will encourage efficient land use. These criteria would be set up to encourage progressively better land use efficiency and sustainability performance:

- Within Method 2a, allow for the calculation of customized, improved ILUC values based upon the demonstrated adoption by any regulated party that improved agricultural practices have offset all or portions of the additional demand for land from the manufacture of biofuels.
- Create lifecycle carbon intensity default values for any sustainability certification program that includes avoidance of indirect land use change. Current LCFS default values only reflect current industry practices. However, a number of sustainability certification programs are beginning to define better practices for biofeedstock and biofuel production.
- Work with the California Department of Food and Agriculture to develop a set of best management practices for all biofuel feedstocks assigned a non-zero ILUC value. Develop a default value based upon those practices that reflects a lower associated Direct and Indirect Land Use emissions value. Such a program will involve additional GTAP modeling with more optimistic assumptions. By defining these practices, ARB will provide biofeedstock producers who are interested in improving their current practices a clear target and a reward for meaningful improvements.
- Allow individual facilities who have adopted additional land efficiency practices to further reduce their ILUC value. This mechanism would motivate continuous improvement in land use efficiency. An example would be if a biofuel plant employs cattle densification practices that reduce pressure on pasture land.

Biofuels Import Tariffs

As a global principle BP supports free trade. We believe that markets unfettered by inappropriate country-level barriers are able to deliver the lowest cost products to global consumers in the most reliable way.

When it comes to biofuels we believe that the production of ethanol in Brazil should not be unduly hindered by these current trade policies. We believe sugarcane ethanol is a lower carbon biofuel available in volume for compliance in the early years of the LCFS. **We encourage California to acknowledge the opportunity that Brazilian sugarcane ethanol offers for LCFS compliance by advocating for the suspension of import tariffs.** Such an acknowledgement would be a strong signal to policy makers in Washington that California is serious about achieving the GHG mitigation goals laid out in the LCFS and AB32.

Feasibility Reviews

Compliance with the LCFS will depend on the development of advanced alternative fuels as well as new vehicle and battery technologies that have yet to be proven on a commercial scale. Additionally, LCFS-type programs are being considered nationally and internationally, which could increase demand for the same low carbon fuels needed in California. The supply/demand balance for these fuels could fluctuate dramatically and be subject to extreme volatility if there are not sufficient quantities to prevent shortages to the markets. CARB surely recognizes that severe prolonged price spikes and/or fuel shortages that could result would not be in the best interests of the LCFS program.

BP believes that CARB should develop proactive measures that could help prevent market disruptions and/or fuel shortages. As an extension to the existing scheduled Regulation Reviews, more frequent and targeted feasibility reviews would allow the regulation to match the development of alternative fuels without the scarcity-based market volatility associated with infeasibility.

BP believes that the preferred solution is to set feasible LCFS targets <u>from the beginning</u> that are based on realistic assessments of alternative fuel technology development. Although there will always be uncertainty associated with a decade-plus forecast, projections over the near term (3 years) should have less uncertainty as these new alternative fuel facilities will be announced several years ahead of commercialization. Similarly, the optimal mechanism for ensuring stability in the LCFS program is for CARB to continuously monitor the near term development of alternative fuel technologies and to adjust the compliance targets when absolutely necessary. BP understands that it has been CARB Staff's intention to monitor the LCFS program and recommend changes to the Board as needed. What is critical is that this process be transparent, public, systematic and use the best available information.

BP believes that CARB should produce an annual report that details the near term outlook for 1) The quantities of alternative fuels needed to comply with the upcoming LCFS targets and other similar programs, 2) The quantities of available low carbon fuels at present and projected facility additions or subtractions, 3) The projected cost of the fuels based on near-term market forecasts, and 4) The cost of carbon mitigation at the time of review in the units of cost per metric ton of GHG. The report should also compare the previous year's

projections with the actual figures to gain insights for future projections. The projections should include collaboration with other entities that provide similar analysis, such as the CEC, EPA, or DOE. This report would be presented to the Board, which would have the authority to change compliance targets if necessary, subject to public review. ARB has already initiated a somewhat similar process with its ZEV Review Committee, and the EPA with its review of available ethanol supplies when setting the next year's RFS requirements.

Electrical Pathway

An issue of significance in the design of a Low Carbon Fuel Standard (LCFS) is the treatment of electricity as fuel for transportation. It is recognized that adoption of advanced technology vehicles such as Battery Electric Vehicles (BEH) and Plug In Hybrid Vehicles (PHEV) may play an important role in achieving the 10% Carbon Intensity Reductions outlined by LCFS. The Compliance Scenarios in the March 2009 Supporting Documentation to the LCFS show electricity as contributing between 9% and 35% of gasoline GHG reductions, and up to 3% of Diesel GHG reductions.

The current LCFS Draft Regulation supports electric vehicles in a very indirect method. Section 95480.1(b) lists electricity as a transportation fuel that can be brought into the LCFS system on a voluntary basis. In Section 95484 (a)(6), the opportunity to be a regulated party for electricity is first given to the Load Serving Entity (LSE), which in California is largely the regulated utilities and Municipal Providers. However, the requirement to reduce the CI in gasoline and diesel fuels fall on the fuel producers and importers which do not have the ability to sell electricity directly to customers, nor to include electricity in their slate of fuels. The presumed mechanism for supporting electrical vehicle adoption appears to be that the LSE's will opt to install the needed infrastructure (residential meters and public charging stations) with the expectation that LCFS credits can be generated to sell to liquid fuel producers and importers. However, as a voluntary participant, the LSE's may have difficulty justifying projects based on LCFS credits, whose price may be difficult to forecast. BP believes that extending the opportunity to generate LCFS credits via electricity beyond the LSE's to other regulated parties would increase the pace of implementation for this pathway.

BP is a major developer of both renewable and low carbon electricity. We currently have in place or under way projects in CA that include solar, wind, a first-of-it's kind Hydrogen Energy project with Carbon Capture and Storage (CCS), and highly efficient low carbon Combined Heat and Power (CHP) in the form of cogeneration. While CARB has appropriately provided some acknowledgement of the need for CHP in the AB 32 Scoping Plan, current state energy policies present significant barriers of entry into the retail electricity market for a comprehensive energy provider like BP. It is expected that the barriers will include, but not be limited to, issues around access to providing low carbon power to the grid (Direct Access Service) - as well as the opportunity to translate this power into LCFS credits. **We ask that CARB initiate a dedicated joint agency effort involving CARB, the CEC and CPUC, and interested stakeholders to address these barriers and to design a LCFS credit structure that opens up opportunities to develop the Electrical Pathway.**

Early Reduction Credits

BP has encouraged CARB to consider allowing actions taken in the 2010 reporting period be allowed to obtain LCFS credits that can be used for their compliance once the LCFS is implemented in 2011. **We believe that allowing early reduction credits for such actions will promote earlier implementation of activities reducing GHGs - helping to ensure a successful LCFS program.**

CARB's Proposed Regulation also allows a regulated party to retain LCFS credits without expiration for use within the LCFS market. BP supports this clause and believes it is fundamental to the stability of the program. Unlimited retention of credits will also reward the early actors who create the new fuels before they are mainstream.

Method 2A for Petroleum Fuels

BP believes that the petroleum industry should have the ability to earn an improved pathway as a result of substantial investments to reduce carbon output, such as Carbon Capture Sequestration (CCS). The current Proposed LCFS Regulation appears to rule that Method 2A and 2B are not available to CARBOB and Carb Diesel. Section 95486 (a)(1) says, "A regulated party for CARBOB, gasoline or diesel fuel must use Method 1, as set forth in section 95486 (b)(2)(A) to determine the carbon intensity of each fuel or blend stock for which it is responsible. The rule goes on to say in the next subsection that, "A regulated party for any other fuel or blend stock must use Method 1 ....unless the regulated party is approved for using either Method 2A or Method 2B..."

BP requests that section a(1) read like a(2) whereby producers of gasoline and diesel can use the Method 2A and 2B as well. BP also requests that the threshold to apply for Method 2A be changed from 5 g/MJ to 10% of the source -to-tank emissions.

Point of Compliance

The current LCFS regulation initially puts the point of compliance at the point of production or import, and then requires tracking of all subsequent sales transactions. This method will prove to be extremely cumbersome and difficult to administer for BOB's and finished fuels due to the actual nature of product transactions. These fuels are routinely bought and sold numerous times, starting months before they are even produced, and often as part of purely paper transactions. A particular batch may be further subdivided or combined and then resold in these transactions. Swaps of fuels between regulated parties from one CA region to another are also commonplace. Additionally, the transportation chain for these fuels often commingle on common carrier pipelines and shared storage. As a result, it is very cumbersome and time consuming to track a single batch of BOB or finished fuel through this process, and the associated recordkeeping would be substantial. Members of CARB Enforcement, who we met with on April 15th, were presented with this reality and agreed that the current proposal would be challenging to administer.

BP believes that it is important that the regulation be written in a way that minimizes the amount of monitored transactions while still adequately capturing all regulated fuel volumes. BP's preferred option would be for the point of regulation for CARBOB and finished fuels to be at the location of manufacture or import. This point of regulation is consistent with both the Federal Renewable Fuel Standard and the California RFG program. It also enhances enforcement by providing certainty in terms of the identity of

the regulated party. Producers that buy and sell fuels to other regulated parties can agree to transfer LCFS credits through contractual relationships to keep compliance obligations in line with blending opportunities

Issues Expressed in Previous Correspondence

Because of their critical contributions to a well designed LCFS we would like to re-emphasize the following points from our previous letters which we believe have not yet been fully addressed by the March Proposed Regulation:

Crude Carbon Intensity

BP supports using a single, fixed default value for all crude oils used to produce fuel sold in California. We believe that any differential treatment of crude oil by the state will result in unintended consequences that will increase, and not decrease, global GHG emissions. For the time being, and for the foreseeable future, all produced crude will be used somewhere in the global system. If California differentiates between crude oils, the result will be that crude oils that do not fall within a certain CI will simply be "shuffled" to other locations, and new crude oils will be transported to California. The result will be higher emissions due to transportation of crude, and likely increased GHG emissions from refining due to the fact that California refineries are set up to process current crude slates more efficiently than perhaps any place else in the world. BP supports the components of the CARB proposal that make efforts to reduce crude shuffling, such as the inclusion of most crudes into a single average based on the 2006 California Baseline Crude Mix. However, BP believes that the further segregation of "High Carbon Intensity Crude Oils" will ultimately increase, not decrease, global GHG emissions due to crude shuffling, and will add unnecessary complexity to the LCFS. It is BP's position that all crudes be included into the single average crude mix under the CARB LCFS.

Use of Diesel in the Light Duty Fleet

It is of utmost importance to the success of the LCFS that it maintains a fuel-neutral approach. We remain extremely concerned about the obvious bias against the use of diesel fuel in the light duty fleet as a compliance option in the LCFS. Staff has not been able to articulate any reasonable or consistent justification for the fact that they are unwilling to allow use of this pathway despite the fact that advanced diesel vehicle technologies and fuels can be a cost effective pathway to contributing to LCFS goals.

Reducing GHG emissions from the transportation sector will be one of the most challenging aspects of meeting the goals of AB32 as well as the Governor's post-2020 emission reduction goals. Achieving these goals will require use of all reasonably available tools. We believe, therefore, that is in extremely unwise for CARB to preclude the use of and crediting for diesel displacing gasoline as compliance option in the LCFS. The displacement of gasoline by diesel in the light duty fleet is an example of a compliance option that, though not a silver bullet, is available now at reasonable cost. CARB board member, Dan Sperling, in his book *Two Billion Cars*, writes that a balanced approach to fuels policy "supports both near-term and long-term alternatives"[1].

[1] Sperling and Gordon, *Two Billion Cars*, 2008, p.80

It is our understanding that by the 2009 model year, light duty diesel vehicles will meet the strict California light duty vehicle emission standards. This will allow CARB to leverage the significant accomplishment of the development and introduction of CARB low sulfur diesel. This new, cleaner fuel can then start to provide benefits beyond reduction in criteria pollutants, by helping to address climate change.

The use of diesel in the light duty fleet will result in significant reductions in both GHG emissions and in the use of petroleum for transportation – two key objectives of the LCFS. The use of diesel in the light duty fleet will also facilitate future, additional GHG reductions. Early adoption of light duty diesel vehicles will allow for an eventual transition to the use of biodiesel/renewable diesel in these same vehicles, and diesel hybridization using biodiesel/renewable diesel. An additional GHG benefit will come from reduced carbon intensity in the production of this diesel if California refiners are able to reduce the volume of diesel that is converted to gasoline.

We understand and agree with the assessment that a lower carbon transport sector will require innovation and introduction of fuels of the future. However, by all accounts, fossil fuels will make up a large part of California's energy mix for decades to come. This is no less true in the transportation sector. Even if the LCFS works as planned, some 80% of the California transportation fuel mix will be made up of conventional fossil fuels in 2020. The US Energy Information Administration estimates that in 2030, the US energy mix will be made up of more than 80% fossil fuels. In order to solve climate change, we will not only need to move toward lower carbon alternatives to fossil fuels, but we will also need to find ways to use fossil fuels in a manner those results in fewer GHG emissions. Displacement of gasoline with diesel in the light duty fleet is a clear example of use of fossil fuels in a way that results in fewer GHG emissions.

For these reasons, we strongly urge CARB to include as a compliance option, the displacement of gasoline by diesel in the light duty fleet.

LCFS/AB32 Interaction

Emission reductions that occur within the area of overlap between the LCFS and the greater AB32 should result in a regulated party taking credit for the reductions in both programs. We have heard CARB staff suggest that a regulated party can only take credit for such reductions in the greater AB32 program – and not in the LCFS. However, this approach would ignore the fact that AB32 and the LCFS are separate regulations that, for a portion of emissions, regulate these same emissions separately through two different programs. If an action can be taken that meets the requirements of both of these separate programs – then these actions must be credited under *both* programs. There is simply no other reasonable way to approach addressing the interaction of AB32 and the LCFS. If you did not allow credit under both programs, a regulated party could be subject to the perverse outcome of crediting one program and "pretending" that emission or AFCI reductions did not occur in the other program – when they actually did.

Crediting both AB32 and LCFS compliance as co-benefits for a single action which reduces emissions *and* AFCI in the area of regulatory interaction also creates greater potential to encourage higher cost, potentially game-changing technologies to be developed and deployed. It creates extra incentive to comply with AB32 by reducing facility

emissions directly rather than through trading or the use of offsets – thereby addressing Environmental Justice concerns of AB32.

Take the Time to Get It Right

Lastly, we believe many important issues about the design of the LCFS remain unresolved. It is vitally important that CARB get the initial design of the LCFS correct – and that the LCFS succeed in achieving its goals. By succeed, we mean that the LCFS delivers GHG reductions in fuels at a reasonable cost, that it does not inhibit the ability of California consumers to access the fuel they need, and that it encourages and rewards low carbon fuels innovation. It is more important that the LCFS be done right than be done quickly. We believe that the Early Action designation has placed an unreasonable and unrealistic time constraint on the design of a successful LCFS regulation.

In light of the many significant, leveraging and still emerging uncertainties around the design and feasibility of the LCFS, including potential unintended consequences of various compliance pathways, we urge CARB to reconsider the Discrete Early Action designation of the LCFS. CARB should take the time necessary to establish a deliberate approach in designing and implementing this complex, first-of-its-kind regulation. We believe a timeline more consistent with implementation of the greater AB32 program would be more realistic and because it has been acknowledged that few AFCI reductions would occur in early years – this adjusted schedule would not come at the expense of delay of significant progress in emission reductions.

Please feel free to contact me should you wish to discuss these recommendations in more detail.

Sincerely,

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