Primafuel – Leading the way to zero carbon fuels tm
2774 Dawson Ave
Signal Hill, CA 90755 - USA
www.primafuel.com

To: The California Air Resources Board

First, allow me congratulate the Air Resources Board on continuing the drive towards establishing the California Low Carbon Fuel Standard as an early action measure under AB32. Primafuel is focused on developing the technology and the building the infrastructure required to meet these emerging regulations. We share a long-standing commitment to the goal of reducing transportation sector GHG emissions with the Air Resources Board. It is in this spirit in which I offer Primafuel's comments to the October 2008 Draft of the California Low Carbon Fuel Standard.

Regarding Section 95421: Standards

Primafuel believes that the compliance schedule described is a marked improvement from the first draft version of the LCFS. Starting with less aggressive reductions and moving to a more aggressive reduction regime post 2015 is a more realistic schedule and provides more time to make the necessary investments in both infrastructure and technology.

The commentary pointing out the 80% dry-mill/20% wet-mill corn ethanol split leading to a 10.5% reduction mandate by 2020 is quite clear. Producers of ethanol (and other potentially lower-carbon fuels) are very keen on investing in efficiency improvements and new technologies (including new feedstocks) to reduce their products' life-cycle emissions. Unfortunately, producers are broadly not convinced that the LCFS system will allow them to recover these investments based on the higher value that their lower-carbon products should command. As an "opt-in" system, we remind the ARB that provisions making it *easier* for producers of biofuels to invest in efficiency improvements are important. Regulatory provisions that make it *more* difficult for producers to recover their investments based on the additional value of increased reductions past the default values should be avoided. Understanding that AB32 is intended as a "technology pull" set of regulations, it is critical that developers and implementers of low-carbon technologies have a clear understanding of how price-signals will travel upstream and allow these lower-carbon technologies to be "pulled" to the market.

Section 95423: Compliance – Pgs 7-10

The ability to transfer compliance obligation in both the gasoline and diesel groups via contract is absolutely missions critical. The inclusion of E100 and B100 in the definition of gasoline and diesel, respectively, is also very important to maintain.

Technology neutrality is a central tenant of the LCFS, in order to ensure compliance flexibility. Business model flexibility is equally important, and these provisions which allow transfer of obligation for gasoline, E100, diesel, and biodiesel ensure business model flexibility. This set of principals is important to preserve, as it ensures a healthy market with business flexibility, LCFS credit liquidity, and accurate price signals.

Section 95423: Compliance – Pgs 18

Regarding the feasibility of requiring sustainability reporting, Primafuel believes that some level of sustainability reporting is an appropriate requirement. This sustainability-reporting requirement must apply evenly, **with the same criteria across all fuels**, and be focused on the fuels in question, NOT the overall industry which the fuel may represent. It should also actively avoid the inclusion of life-cycle GHG emissions into the question, since the basic thrust of the regulation is GHG regulation.

At the very core of sustainability is the following question: <u>What is the capacity to maintain a certain process or state indefinitely?</u>

For example, consider a very low-input sugar-cane plantation developed on former cattle-grazing land providing feedstock to an ethanol plant, to produce ethanol and electricity. There is little question that with proper management, the aforementioned operation is fairly sustainable, in and of itself. While the question of whether that particular process can double or quadruple in scale and remain sustainable is a valid one, it is hypothetical. It is this hypothetical case that brings into considering the impacts of an entire industry, and not a particular batch of fuel product (which LCFS regulates directly). The same fundamental question ought to be asked of a Californian or Nigerian oil well, producing crude for refining in a Los Angeles refinery into a host of petrochemical products including gasoline and diesel. How long can that process or state be maintained? The answer is fairly clear, it is limited by the amount of crude oil in that particular field, which is generally documented information (and frequently legally required in the case of publically traded companies). 50 years, perhaps 100 years. It's obvious that the amount of oil in that field cannot double or quadruple in size, so this follow-on question is moot in the case of non-renewable fuels.

It is critical that the dimensions of sustainability must be precisely the same for each fuel, or it will be impossible to compare the fuels against each other. Any asymmetry in this standard would produce inaccurate and inconsistent price signals and render a marketplace ineffective. The suggestions below indicate what Primafuel believes ought to be included as dimensions of sustainability by which to evaluate a supply chain:

1. Permanence - All things being equal, to what degree is your supply chain able to be operated indefinitely? Is it constrained by fundamental resource restrictions/shortages, or can these restrictions/shortages be managed?

2. Water impact – Are you using more water than falls on the footprint of your process, or less? To what degree?

3. Land impact – Are you improving the state/soil conditions of the land your process requires, or decreasing the condition of the land? To what degree?

4. Air impact – Does your process emit significant levels of non-GHG emissions? To what degree?

5. Biological diversity – Are you introducing invasive species, eliminating species with your process? To What degree?

6. Human and civil rights – To what degree does your process' supply-chain impact employees and the communities in which you operate? Does your process contribute to or detract from systems (including governments) that determine the state of human-rights in their jurisdictions?

Section 95424: LCFS Credits, Deficits, and Incremental Obligation – Pg 25

The principals put fourth in this section are very important to explore:

1. The ability to bank credits without expiration is very important. Maintaining this principal assures liquidity and accurate price signals, which are the bedrock of driving investment into the technology and infrastructure required to meet California's aggressive goals.

   Regarding commentary that there "may be limits on the credits generated in the early years (2010-2014)." **This is a highly flawed concept.** Meeting the LCFS will require new investment in infrastructure and technology, much of which has very long lead-

times. The price-signals associated with the LCFS must help drive this investment early, not late. Limiting the amount of credits generated in the early years would limit over-compliance, which would limit the liquidity of LCFS credits. Because the credits can be banked, an abundance of credits would not necessarily depress trade prices of the credits because they can (and will, in the case of depressed prices) be held. Splitting LCFS credit values into two arbitrary regimes (early and late) by limiting volume would produce undesirable distortions in price and liquidity. This would threaten the ability to meet the required GHG reductions.

2. The principal that LCFS credits can be imported into the AB32 market is very important to provide sufficient market head-room for adequate liquidity and again, consistent price signals.

3. The principal that borrowing credits forward would be prohibited, is very sound. Credits to comply should be generated only by past achievement in over compliance, not projected reductions. This is important because it creates the ability for third-party carbon finance organizations to provide financing towards low-carbon projects in exchange for the right to future carbon reduction credits. If the State allowed future borrowing, this important financial mechanism would fail.

Section 95425: Determination of Carbon Intensity Values – Pg 25

With regards to the final tool incorporating both GREET and GTAP modeling, it is important to provide a note of caution. The ability for GTAP to accurately predict the GHG impacts of direct and indirect land-use changes is very much in question. Actionable regulations to achieve California GHG reductions are mission critical, but some of the base assumptions in GTAP modeling essentially preclude the ability for the regulated actor to meet a regulation by modifying their behavior. For example, if GTAP modeling concludes that IDLUC's are essentially the same for all biofuels produced from crops that require land, this would actively dissuade efforts to improve the other sources of GHG emissions in biofuels production. For example, if a conventional dry-mill corn ethanol producer shifts their process towards dry farming, with zero till, adopts new technologies to replace anhydrous ammonia with organic fertilizers, and replaced coal-fired boilers with biomass fired boilers, this process would be significantly more efficient and better for the climate. Unfortunately, if the indirect land-use change "charge" applied to a hypothetical palm-oil biodiesel producer (charged with peat bog drainage) is the same as a mid-west corn ethanol producer, the incentive to adopt more sustainable practices is significantly diminished. This is obviously contrary to the goals of AB32.

Thank you for the opportunity to provide input into this vital and vibrant regulatory process. If you believe Primafuel can provide any further points of clarification, please do not hesitate to make the request.

Very best regards,

Rahul Iyer
Chief Marketing Officer
Primafuel, Inc.