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June 23, 2014

Ms. Kirsten King
Air Pollution Specialist
Fuels Evaluation Section
California Air Resources Board
Sacramento, CA 95814
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Subject: Low Carbon Fuel Standard ("LCFS") Re-Adoption Concept Paper

Dear Ms. King:

Ensyn Corporation ("Ensyn"), a privately owned U.S. company, is an experienced producer of cellulosic renewable fuels and renewable chemical products made from wood residues and other non-food cellulosic biomass. Ensyn appreciates ARB's efforts to achieve the goal of the Low Carbon Fuel Standard ("LCFS") program of reducing the carbon intensity of transportation fuels used in California by at least ten percent by 2020, which is expected to reduce greenhouse gas ("GHG") emissions and support the development of a diversity of cleaner fuels with other attendant co-benefits. We are writing to express our support of the re-adoption of the LCFS program and to provide comments on certain specific recommendations outlined in ARB's LCFS Re-Adoption Concept Paper published on March 7, 2014 (the "Concept Paper").

Ensyn and its affiliated companies have been producing renewable fuels and chemicals commercially since 1989. Over this period, Ensyn's technology has produced over 37 million gallons of liquid product, a volume unmatched by any other cellulosic biofuels company. To date, Ensyn's cellulosic renewable fuel has been combusted in industrial furnaces and boilers replacing fossil heating oils, and now Ensyn is focusing on expanding into the transportation fuel market.

Most biofuel companies produce a product that is blended downstream with gasoline or diesel (i.e. ethanol or FAME biodiesel blends). Ensyn's second generation renewable fuel can be used as a secondary feedstock in conventional refineries in an application called "Refinery Co-Processing." In this application, a refiner co-processes Ensyn's renewable fuel with conventional hydrocarbon feed to make fungible gasoline and diesel with renewable content. To be clear, the finished renewable transportation fuels produced from co-processing are the same as those produced from conventional crude oil. Because of this, refinery co-processing is opening an untapped midstream biofuels market that is not

subject to “blendwall” concerns and that should significantly add to the total quantity of low carbon intensity fuels in California, assisting with timely achievement of the LCFS carbon intensity reduction targets.

Ensyn is currently developing production facilities in several regions across North America and globally, with world-class strategic partners, including UOP, a Honeywell Company; Chevron Technology Ventures; and Fibria Cellulose S.A, a Brazilian fiber company that is the world’s largest market pulp producer. These projects include production facilities in the Pacific Northwest and California that would ultimately produce renewable fuel for use in California refineries.

Several key attributes contribute to our robust project development pipeline, including the following:

- **Feedstock Partners** – Ensyn is partnering with large timber management and forest products companies to provide abundant residual biomass supply to its projects.
- **Offtake Partners** – Ensyn is partnering with large global oil refiners, as well as smaller independent refiners, who will be offtake customers for our product.
- **Proven Technology** – Ensyn’s Rapid Thermal Processing (RTP®) technology has been proven in commercial operations for 25 years, and our joint venture with UOP Honeywell provides commercial performance guarantees further supporting the technology.
- **Powerful Economics** - Cash production costs of approximately \$50 per barrel provide significant downside protection and result in attractive economics for our projects.

Ensyn would like to provide its input on the following provisions in the Concept Paper:

1. GHG Emissions Reductions at Refineries

Ensyn supports ARB’s recommendation and agrees that refineries should be able to generate credits by quantifying emission reductions made at the refinery that don’t necessarily flow directly into transportation fuels. It would be beneficial to quantify these on-site emission reductions by adopting a program that uses credits as the mechanism to reward GHG emission reductions, and reduced associated toxic and criteria air pollutants, at refineries. Ensyn intends to sell its cellulosic renewable fuel to refineries in California, and there are portions of our product that will not end up as transportation fuels, but still contribute to on-site GHG emission reductions. The provisions in the Concept Paper regarding credits for onsite emission reductions at refineries would increase the value of our product to refiners and the likelihood of its adoption at refineries, helping achieve the goals of the LCFS program.

2. Modification of Compliance Curves for Gasoline and Diesel Standards

Ensyn is pleased that ARB is being proactive in its management of the LCFS program with its continued commitment to an overall ten percent reduction in average carbon intensity by 2020 and its consideration of carbon intensity reductions post-2020 that exceed ten percent. However, we were concerned regarding the proposed post-2015 “curve-smoothing” discussed

in the Concept Paper. Ensyn cautions that changing the trajectory of the gasoline and diesel compliance curves for the years 2016-2020 may dramatically reduce the willingness of regulated parties to provide offtake contracts to alternative fuel producers. As ARB is aware, producers of clean fuels already face difficulties financing projects, and are typically unable to include LCFS credit value in financial analyses. Any actions that change or undermine the requirements under the program only exacerbate this difficulty, make long-term project financing more difficult, and ultimately hinder the production of clean fuels. We believe that "curve-smoothing" would adversely affect those producers, like Ensyn, that may require project financing for their production facilities, resulting in a reduction in the availability of low carbon intensity fuels.

3. Innovative Technologies for Crude Oil Production

Ensyn also supports ARB's proposal to allow crude oil producers to opt in as regulated parties and earn LCFS credits for innovative production methods. Ensyn could potentially use its renewable fuel to generate power or steam at crude oil production facilities and facilitate the generation of credits for obligated parties.

Ensyn is a strong supporter of the LCFS program. We look forward to working with ARB to bring significant volumes of clean fuels to California in the near future. We appreciate the opportunity to provide these comments and are available at your convenience to further explore the concepts outlined in this letter or any others regarding the program.

Sincerely yours,



Dr. Robert G. Graham

Chairman and Chief Executive Officer