ENSYN
CORPORATION

ELECTRONIC SUBMITTAL (http://www.arb.ca.gov/lispub/comm/bclist.php)

July 8, 2015

Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Comments regarding proposed modified regulatory language with respect to the re-adoption of the Low Carbon Fuel Standard ("LCFS")

Dear Sir or Madam:

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 the efforts of the Air Resources Board (the "Board" or "ARB") to reduce the carbon intensity ("CI") of transportation fuels used in California and the opportunity to provide comment on the above referenced regulations.

ENSYN'S TECHNOLOGY

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 boilers to replace heating oil, and now Ensyn is focusing on expanding into the refinery market.

Ensyn's renewable fuel can be used as a secondary feedstock at a refinery in an application called "Refinery Coprocessing." In this application, a refiner purchases Ensyn's renewable fuel and coprocesses it with crude oil at a refinery to make ASTM-certified gasoline and diesel. In contrast, other biofuel companies produce a biofuel that must be blended downstream with finished gasoline or diesel. Refinery Coprocessing creates an untapped midstream biofuels market that is not subject to "blendwall" concerns and therefore can significantly expand the total quantity of low carbon intensity fuels in California and enable timely achievement of the LCFS CI reduction target.

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 biomass residuals and waste for its projects.
- Offtake Partners – Ensyn is partnering with large global oil refiners, as well as smaller independent refiners, that would be offtake customers for our projects.
- Proven Technology – Ensyn's rapid thermal process (RTP™) technology has been proven in commercial operations for over 25 years. 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.

Over the past year, Ensyn has spent considerable time and effort developing a life cycle analysis and is nearing completion of its LCFS pathway application. Ensyn considers the LCFS program to be an important policy driver for the expansion of low carbon fuel production. Based on extensive modeling and discussions with ARB staff, Ensyn anticipates that it will receive an extremely low CI score for its fuel pathway, well within the range of an ultra low carbon fuel.

PROVISIONS OF CONCERN

As an innovative producer of ultra low carbon fuel, Ensyn has commentary on the following provisions in the proposed regulations:

Provisional Pathways- Under Section 9588(d)(2) of the proposed regulations, applicants may not submit New Pathway Request Forms covering facilities that have not been in full commercial production for less than one full calendar quarter. At any time during the first two calendar years of the facility's commercial production, the Executive Officer of the Board or his or her designee (the "Executive Officer") may revise as appropriate the facility's actual operational CI based on the receipts for energy purchases submitted by the applicant of the fuel pathway application for the facility. During such two-year period, the applicant may only generate provisional credits and the Executive Officer may adjust the number of credits or reverse any provisional credit in the producer's account without a hearing.

Credit Invalidation- Under Section 95495(b)(1) of the proposed regulations, the Executive Officer may modify or delete an approved CI and invalidate credits or recalculate deficits. Under Section 95495(b)(4), in the event that the Executive Officer makes a final determination that invalidates credits and results in the creation of a deficit in a past compliance period, the deficit holder has 60 days from the date of final determination to purchase sufficient credits to eliminate the entire deficit.

RECOMMENDED CHANGES

We believe that the foregoing provisions would greatly hinder the value of LCFS credits in obtaining financing for any project utilizing an innovative fuel technology. Based on our experience, financial participants are extremely conservative in forecasting revenue streams for advanced biofuel projects. The current proposed language pertaining to provisional pathways and credit invalidation is likely to undermine financing for projects and thereby frustrate attainment of the Board's aggressive CI and petroleum reduction goals. However, relatively modest changes to the proposed language will preserve the Board's goal of ensuring verifiable greenhouse gas emission reductions while also supporting the development and expansion of low CI fuel production facilities.

Monetization of LCFS Credits- The first aspect of enabling financing of a biofuels facility is to facilitate the monetization of LCFS credits as early in the facility's commissioning as is feasible and consistent with the goals of the LCFS program. In our experience, there is a great deal of plant optimization that occurs as innovative production facilities are brought on line and ramped up to nameplate production capacity. Given the necessity of "proving" CI reductions to the Executive Officer through the submission of actual energy usage data at the specific production facility, the LCFS program is already structured to incentivize a new facility to delay its LCFS commissioning date until energy efficient performance has been achieved. Requiring a full calendar quarter of data is overly burdensome on plants which are being financed and constructed. For newly operational facilities, rather than relying on data from actual operations, third party validation of an applicant's provisional pathway should provide sufficient assurance of performance metrics to the Board. The validation process that has been successfully employed in the British Columbia Carbon Offset Protocol may be used as a template for this approach.

In any case, if the Board believes that operational data is required, a sixty (60) day period would be sufficient to validate the data and would enable much quicker monetizing of credits for project investors.

From a drafting perspective, this change could be achieved simply by changing the following sentence in Section 95488(d)(2) as indicated:

> *"In order to encourage the development of innovative fuel technologies, however, applicants may submit New Pathway Request Forms, as set forth in section 95488(c)(1),*
> *covering Tier 1 and Tier 2 facilities that have been in full commercial operation for less than two years, provided they have been in full commercial production for at least ~~one full calendar quarter~~ sixty (60) days."*

While the third party validation or sixty-day approach enables quicker LCFS credit monetization, the same subsection provides that based on operational data, "the Executive Officer may adjust the number of credits or reverse any provisional credit in the producer's account without a hearing…" This broad oversight power of the Executive

Officer ensures that the Board retains ample authority to ensure that actual CI reductions are being achieved. In addition, the Executive Officer's enhanced enforcement powers under Section 95495 further minimize any risk to LCFS program goals.

Minimizing the Period of Uncertainty- The second aspect of enabling financing is minimizing the period during which the production facility will be regarded by financiers as having an indefinite CI score. During the period in which the credits are provisional and may be adjusted without a hearing, the value of the credits will be considered an uncertainty. This uncertainty factor will adversely affect the facility's pro forma by discounting or nullifying the value of LCFS credits for the entire two-year period. Consequently, we would request that the Board reduce the provisional period to a maximum of six months. Once a facility has been commissioned and has commercially produced fuel for six months, its energy demands are stable so there is no significant risk to programmatic goals resulting from the adoption of a shorter provisional period. By contrast, a two-year provisional period undermines programmatic greenhouse gas and petroleum reduction goals by rendering it more difficult to obtain financing needed to establish innovative ultra low carbon production facilities.

Clarifying Provisional Credits- Regarding provisional credits, we would like to bring your attention to two sentences of Section 95486(a)(2) that could be interpreted inconsistently with the intent of the latest version of the proposed regulations. The clause states:

> *"Where an application or demonstration pursuant to sections 95488 or 95489 has been completed but not yet approved, the applicant may report transactions in the LRT-CBTS. Such provisional credits may not be used for any purpose until fully recognized."*

The phrase "provisional credits" as used here appears to reference non-approved facilities that cannot yet generate credits. However, since the phrase "provisional credits" is used in Section 95488(d)(2) to specifically reference credits from facilities that have Executive Officer approval, we are concerned that this sentence could be interpreted as a lingering restriction on the use of provisional credits. Therefore, we would recommend striking the phrase "provisional credits" from Section 95486(a)(2) and replacing it with "reported transactions".

Remedying a Deficit- We believe that a period of sixty (60) days for a producer to remedy a deficit in a past compliance period caused by an invalidation of credits is an insufficient period and would cause undue economic burden on the producer. We suggest that the appropriate period to remedy the deficit should be one year.

From a drafting perspective, this change could be achieved simply by changing the following sentence in Section 95495(b)(4) as indicated:

> *"Where such action creates a deficit in a past compliance period, the deficit holder has ~~60 days~~ one year from the date of the final determination to purchase sufficient credits to eliminate the entire deficit."*

CONCLUSION

We appreciate the opportunity to provide these comments and are available to work with the Board to assist it in achieving its environmental goals.

Respectfully submitted,

Robert A. Pirraglia
President