



CORPORATION

Sent via email to: Samantha.Meserve@state.ma.us

June 30, 2016

Samantha Meserve
Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston, MA 02114

Subject: Comments on Draft Regulations Pertaining to 225 CMR 16.00

Dear Ms. Meserve:

On behalf of Ensyn Corporation and its affiliates (Ensyn), thank you for the opportunity to provide comments on the proposed changes to 225 CMR 16.00 to allow renewable thermal technologies to be eligible to receive Alternative Energy Credits. Ensyn utilizes a patented fast pyrolysis process to convert sustainably sourced woody biomass into renewable fuel oil (RFO) which can be used for space heating and cooling and electricity production and biocrude which can be used as feedstock that can be co-processed with petroleum at a refinery to produce low carbon gasoline and diesel. We envision that, in Massachusetts, Ensyn's RFO will be used as a replacement for conventional fossil fuels in commercial and institutional boilers.

BACKGROUND ON TECHNOLOGY

Ensyn was founded in the 1980s. Throughout its history, Ensyn has been applying its fast pyrolysis technology for commercial applications, including for the manufacture of food products, fuel and for heavy oil upgrading.

Ensyn owns and operates a commercial production facility in Ontario, Canada, outside of Ottawa. In 2008, Ensyn and UOP Honeywell formed Envergent Technologies LLC, a joint venture company, to offer technology and equipment to convert biomass into biofuel for power generation, heating fuel and transportation fuels. For nearly 100 years, UOP has been a leading international supplier and licensor for the petroleum refining, gas processing, petrochemical production and other major manufacturing industries. Today, more than 60 percent of the world's gasoline and 85 percent of biodegradable detergents are made using UOP technology. The JV with UOP not only helps enable biocrude to be co-processed in a refinery to be converted to gasoline, but also provides performance guarantees from a Fortune 100 company for facilities that produce the biocrude.

Ensyn's facility in Ontario is currently capable of producing approximately 3.2 million gallons per year of product. Ensyn is actively developing additional commercial plants located in the United States and

Canada. The products produced in these facilities will be used to replace fossil fuels in boilers and for co-processing in petroleum refineries.

COMMENTS ON DRAFT REGULATIONS 225 CMR 16.00

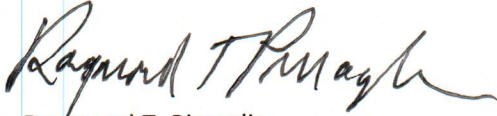
Please accept the following comments on the proposed Alternative Energy Portfolio Standards (APS) Regulations and the APS Guideline on Biomass, Biogas, and Biofuels for APS Renewable Thermal Generation Units.

1. Ensyn supports the premise that any renewable thermal technology be required to be reductive from a greenhouse gas (GHG) perspective. The final rules, however, should be clear on how the reduction in GHG can be verified. We suggest that the regulations provide that an APS Renewable Thermal Generation Unit that uses Manufactured Biomass Fuel would automatically meet the GHG reduction requirements if such fuel, in addition to being Eligible Woody Biomass Fuel, also qualifies as either an Advanced or Cellulosic Biofuel under the Federal Renewable Fuel Standards, which requires 50% and 60% GHG reductions, respectively. An adoption of this approach would address any biomass sustainability concerns and ensure the achievement of substantial GHG reductions.
2. The definition of “Eligible Biomass Woody Fuel” in the proposed regulations includes Forest-Derived Residues, Non-Forest-Derived Residues, Forest Salvage and Forest Derived Thinnings. However, the restrictions and standards on the use of Eligible Biomass Fuel provided in Proposed Reg. Section 16.05(4)(d)(iii) require an APS Renewable Thermal Generation Unit to use Eligible Biomass Woody Fuel that contains at least 50% Forest-Derived Residues or Forest Salvage and not more than 50% Thinnings. We believe that the exclusion of Non-Forest-Derived Residues from the permitted woody biomass in Proposed Reg. Section 16.05(4)(d)(iii) is unnecessary, especially if the required GHG reduction is required to be verified in accordance with our suggested changes in 1. above. Therefore, we suggest that the last sentence in Proposed Reg. Section 16.05(4)(d)(iii) be amended to read as follows:
“To that end, an APS Renewable Thermal Generation Unit that uses Eligible Biomass Woody Fuel must use Eligible Biomass Woody Fuel that is derived from at least 50% Forest-Derived Residues, Non-Forest-Derived Residues and Forest Salvage and not more than 50% Thinnings.”
3. Under the proposed regulations, Ensyn’s RFO would be classified as “Manufactured Biomass Fuel.” We believe that it is unclear whether the APS Guideline on Biomass, Biogas, and Biofuels for APS Renewable Thermal Generation Units (Guideline) applies to Manufactured Biomass Fuel. Please clarify that these Guidelines do apply to Manufactured Biomass Fuel, and pyrolysis oil specifically. As it relates to *Table 1, Air emission for biomass fuel boilers and furnaces at nominal output*, we believe that Manufactured Biomass Fuel should qualify provided a facility that uses such fuel secures a validly issued permit from the Massachusetts Department of Environmental Protection. As it relates to *Table 2, Performance requirements*, we believe that Manufactured Biomass Fuel should qualify if such fuel meets ASTM International Standard Specification for Pyrolysis Liquid Biofuel (Designation: D 7544 – 09).
4. As stated above, Ensyn’s RFO may be produced using woody biomass from outside of Massachusetts. We believe that the language in Section 3(A) of the Guideline, dealing with Biomass Sustainability, should be broadened by changing “state” to “jurisdiction” on the 8th line of the first paragraph. This proposed change would allow suppliers using woody biomass from outside of

Massachusetts to have a cutting plan authorized by a forest agency in the jurisdiction where such woody biomass was grown.

Thank you for the opportunity to provide these comments. We are available should you have any questions. I can be reached directly at (212) 251-3307.

Sincerely,

A handwritten signature in black ink, appearing to read "Raymond T. Pirraglia". The signature is fluid and cursive, with a long horizontal stroke at the end.

Raymond T. Pirraglia
EVP & General Counsel