

**Staff Summary
Method 2B Application**

**Biocom Energia, Algemesi, Spain
Used Cooking Oil Biodiesel
Fuel Pathway Codes: (BIOD036), (BIOD037), and (BIOD038)**

Deemed Complete Date: October 30, 2015
Posted for Comment Date: November 20, 2015
Certified Date: December 1, 2015

Pathway Summary

Biocom Energia operates a biodiesel plant in Algemesi, Spain. Biocom purchases used cooking oil (UCO) from Spanish and international sources. The company has applied for three Low Carbon Fuel Standard (LCFS) Method 2B pathways for the fuel produced in this plant. The plant uses a standard Fatty Acid Methyl Esters (FAME) transesterification process to produce biodiesel (BD) from UCO where cooking is required. Biocom has a nameplate capacity of 33 million gallons per year of biodiesel.

Carbon Intensity of the Fuel Pathways Produced

The LCFS lookup table currently contains no pathway covering BD produced from UCO in Spain. Therefore, Biocom pathways fall under the Method 2B provisions of the LCFS. Since Biocom application was submitted under the Method 2B process, it is not subject to the substantiality requirements with which Method 2A applications must comply (a minimum improvement of five gCO₂e/MJ, and a minimum production volume of ten million gallons per year).

The facility obtains all or some of its used cooking oil feedstock from a rendering plant that heats used cooking oil using a cooker to evaporate water from the used cooking oil. Therefore, high energy that is associated with UCO cooking in the default Midwest CA-GREET model is considered for all the Biocom pathways.

Biocom sources UCO from various regions of the world. To account for variability in feedstock related emissions (e.g., rendering and transport), staff proposed to the applicant to bin the feedstock into three distinct groups which are shown in Table 1. Biocom agreed with the staff and modified the pathways accordingly. The electricity generation mix profile (EGM) for each group and transportation distances for sourcing the feedstock is also provided. For pathway 1, the electricity mix and transportation distances reflect average values for Spain. For pathways 2 and 3, the electricity mix and transport distances reflect values with the largest potential GHG emissions.

Table 1: Electricity Generation Profile, Transport Modes, and Distances Assigned for the UCO Feedstock

Pathway	Electricity Generation Mix	Transport Modes to BD Plant	Distance (miles)
Pathway 1: Spain*	Residual oil 5.15% NG 53.41% Coal 18.82% Biomass 1.91% Renewables 20.71%	Heavy Duty Truck	295
Pathway 2: Europe**	Residual oil 4.96% NG 49.74% Coal 40.29% Biomass 1.93% Renewables 3.08%	Ocean Tanker, and Heavy Duty Truck	2,000 74
Pathway 3: Rest of the World	Residual oil 5.00% NG 15.00% Coal 80.00% Biomass 0.00% Renewables 0.00%	Ocean Tanker, and Heavy Duty Truck	11,500 124

*<http://www.iea.org/statistics/statisticssearch/report/?country=SPAIN&product=electricityandheat&year=2012>

**<http://www.iea.org/statistics/statisticssearch/report/?country=WORLD&product=electricityandheat&year=2012>

On the biodiesel side, once produced, it is transported by truck from the plant to the port of Valencia, Spain. From there, biodiesel is either transported by an ocean tanker to the Eastern ports of the U. S. and then transported by rail to California, or is shipped directly via an ocean tanker to ports in California. Staff proposed the use of a single transport pathway with higher emissions and accordingly, the applicant used the ocean tanker/rail for all three pathways.

The proposed Biocom pathway carbon intensity (CI) values are shown in the following table. Since the feedstock used for biodiesel production is UCO, a waste stream from the food industry, there is no land use impact associated with UCO.

Table 2: Proposed Lookup Table Entry

Fuel	Pathway Identifier	Pathway Description	Carbon Intensity in gCO ₂ e/MJ		
			Direct Emissions	Land Use or other Indirect Effects	Total
Biodiesel	BIOD036	2B Application*: Spain sourced low-free fatty acids (Used Cooking Oil) where “cooking” is required; Biodiesel Produced in Spain	20.74	0	20.74
Biodiesel	BIOD037	2B Application*: European sourced low-free fatty acids (Used Cooking Oil) where “cooking” is required; Biodiesel Produced in Spain	21.17	0	21.17
Biodiesel	BIOD038	2B Application*: Low-free fatty acids (Used Cooking Oil) sourced from Rest of the World where “cooking” is required; Biodiesel Produced in Spain	26.03	0	26.03

*Specific Conditions Apply

Operating Conditions

Operations at the plant will be subject to the following conditions designed to ensure that the CI of the of the BD produced at the Biocom plant will remain at or below the value appearing in the table above for all volumes of BD sold in California:

- 1) Except for periods of abnormal operations, such as planned maintenance or unpredictable, unavoidable, and uncontrollable force majeure events, the total CI values specified in the Biocom application shall not be exceeded.
- 2) All gallons produced under all certified LCFS Method 2 pathways shall inherit the same CI increment from the consumption of process energy at the plant. The applicants may not allocate process energy CIs so as to reduce the total life cycle CI of some subset of the gallons produced (e.g., those being shipped to California) and

increase the CI of the remaining gallons. The gallons shipped to CA will be allocated similar to the ARB multiple feedstock policy¹.

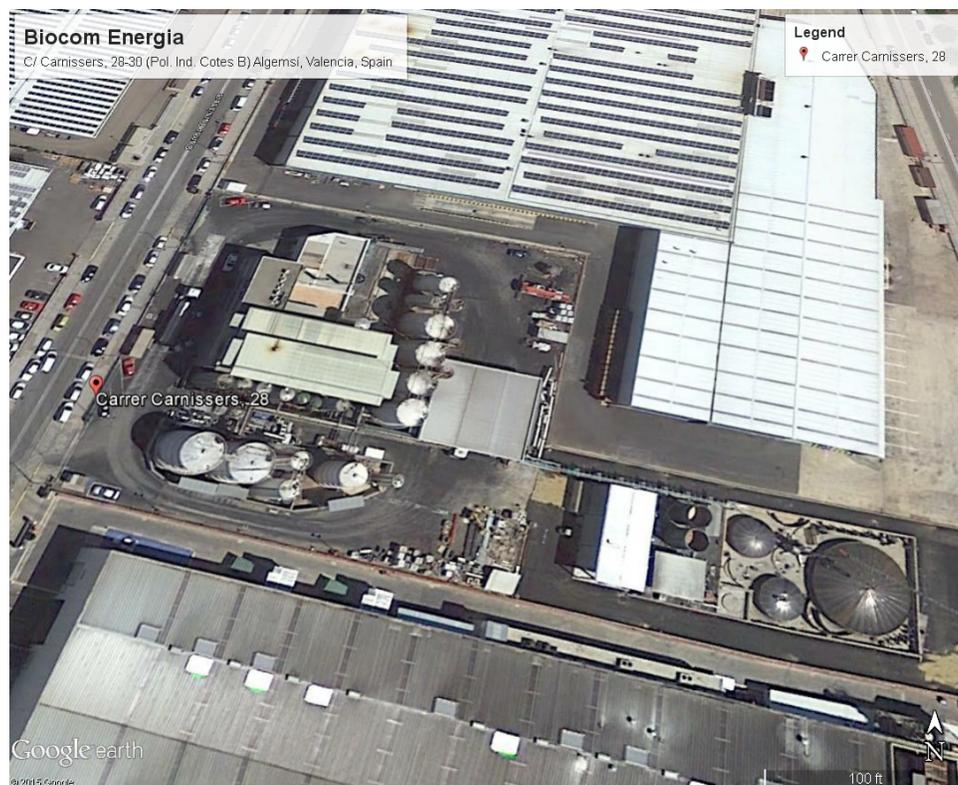
Staff Analysis and Recommendation

Staff has reviewed Biocom's Method 2B application, and finds the following:

- Staff has replicated, using the CA-GREET 1.8b spreadsheet, the carbon intensity values calculated by the applicant; and
- Staff has concluded that the plant's actual energy consumption is not likely to exceed the energy consumption levels specified in Biocom's Method 2B application.

On the basis of these findings, staff recommends that Biocom's application for the three Method 2B pathways be approved.

Satellite view of the Biocom Plant



¹ <http://www.arb.ca.gov/fuels/lcfs/2a2b/internal/mixed-feedstock-bdrd-120112.pdf>