Staff Summary
Method 2A Application
Redfield Energy, LLC
Corn Ethanol
(ETHC097)

Deemed Complete Date: April 15, 2014
Posted for Comment Date: September 8, 2014
Certified Date: September 19, 2014

Plant Summary

Redfield Energy, LLC (Redfield) produces ethanol from corn at a dry mill plant located in Redfield, South Dakota. Redfield has applied for a Method 2A pathway for its corn ethanol plant under the California Low Carbon Fuel Standard (LCFS). The production capacity of the Redfield plant is 63 million gallons per year of denatured ethanol. The plant currently produces about 54 million gallons per year of denatured ethanol. The plant produces both modified distiller's grains with solubles (MDGS) and dried distiller's grains with soubles (DDGS). For about the last three years, the Redfield plant produced about 42 percent DDGS and about 58 percent MDGS on a dry matter basis. Redfield also produces a small amount of corn oil from the plant. The MDGS contains approximately 55 percent moisture by weight, and the DDGS contains approximately 10 percent moisture by weight.

Carbon Intensity of Ethanol Produced

As shown in the table below, the applicant is applying for one pathway CI. The single CI value of 84.91 gCO_2e/MJ would apply at all times, regardless of the proportions of DDGS and MDGS that are being produced at any time. Because this pathway is a single CI pathway, the proportions of DDGS and MDGS would be permitted to vary so long as the CI of 84.91 is not exceeded. Proposed Method 2A pathways must be evaluated against reference pathways from the LCFS Lookup table. Although a Method 2A pathway must be very similar to its reference pathway, it must achieve at least a five gram CO_2e/MJ CI improvement over the reference pathway.[1] The reference pathway for Redfield's proposed method 2A pathway is the Midwest dry mill, dry DGS, natural gas pathway (ETHC004) with a CI of 98.4 gCO_2e/MJ. This reference value also applies to MDGS pathways. Redfield's pathway improves upon its reference pathway CI by more than the requisite five grams of CO_2e/MJ.

[1] In the LCFS regulation, this 5 gCO_2e/MJ threshold is referred to as the "substantiality requirement."

Proposed Lookup Table Entries

Fuel	Pathway Identifier	Pathway Description	Carbon Intensity in gCO_2e/MJ (Including Indirect Effects)
Ethanol from Corn	ETHC097	2A Application*: Midwest; Dry Mill; Combination of Dry DGS and Modified DGS; NG	84.91

*****Specific Conditions Apply

Operations at the plant will be subject to the following conditions designed to ensure that the CI of the of the Redfield pathway will remain at or below the values appearing in table above. The conditions must be met for every gallon sold in California:

- The total pathway-specific thermal and electrical energy use (BTU/gal) value reported in the Redfield Method 2A application shall not be exceeded. This value is classified by the applicant as confidential business information. For purposes of determining compliance with this condition, staff will calculate value of the thermal and electrical energy use on an annual average basis for a given calendar year. Although no conditions are placed on DGS drying operations, those operations shall not cause the energy consumption limitations described above to be exceeded.
- The ethanol yield (in gallons of ethanol per bushel of corn), for the Redfield plant shall be equal to or greater than the values specified in the Redfield Method 2A application. This value is classified by the applicant as confidential business information. For purposes of determining compliance with this condition, staff will calculate the value of the ethanol yield on an annual average basis for a given calendar year.

Staff Analysis and Recommendation

Staff has reviewed Redfield's Method 2A application and finds the following:

- Staff has replicated, using the CA-GREET spreadsheet, the carbon intensity value calculated by the applicant; and
- Staff has concluded that the plant's actual energy consumption is not likely to exceed the energy consumption level specified in Redfield's Method 2A application.
- Staff has concluded that Redfield is capable of operating the Redfield plant in a manner such that the ethanol yield is equal to or greater than the corresponding value specified in Redfield's Method 2A application, and that compliance with the second operating condition above can be maintained.

On the basis of these findings, staff recommends that Redfield's application for a Method 2A pathway be certified.