PRELIMINARY DRAFT POSTED FOR PUBLIC COMMENT
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Aberdeen Energy Mina Corn Ethanol LCFS Pathway 2A Application

Plant Summary

Aberdeen Energy, LLC (Aberdeen) operates a corn ethanol plant in Mina, South Dakota. Aberdeen has applied for a Method 2A fuel pathway for its Mina plant under the California Low Carbon Fuel Standard (LCFS). The Mina plant began operation in 2008 with the capacity to produce 120 million gallons per year of denatured ethanol. The plant is a dry mill, ICM-designed, natural gas-fired facility producing both dry distillers grains with solubles (DDGS) and modified distillers grain with solubles (MDGS). Approximately 74.4 percent of the DGS produced is DDGS, while the remaining 25.6 percent is MDGS. Aberdeen is applying for two pathway carbon intensity values—one associated with its DDGS production and one associated with its MDGS production.

Carbon Intensity of Ethanol Produced

As shown in Table 1, the applicant calculates the carbon intensities of the Aberdeen pathways to be 92.15 gCO_2e/MJ and 87.66 gCO_2e/MJ for DDGS and MDGS, respectively. The reference pathway from the LCFS Lookup Table is the "Midwest, dry mill, dry DGS, NG" pathway, which has a carbon intensity of 98.4 gCO_2e/MJ. This reference value also applies to plants producing MDGS. Because the proposed Aberdeen CIs are five or more gCO_2e/MJ below the reference pathway CI, the proposed pathway meets the LCFS substantiality requirement.

Both Aberdeen pathways achieve lower carbon intensity values relative to the reference pathway through two principal means. First, the plant incorporates a modern plant design developed by ICM that results in less energy use in the plant. Energy use at the Aberdeen plant is below the 36,000 BTU per gallon energy use value that forms the basis of the carbon intensity for the reference dry DGS pathway. Second, electricity use at the Aberdeen plant is below the 1.08 kW-hr per gallon that is assumed for the reference pathway.[1]

The total energy and electricity use values for Aberdeen plant will become operating conditions upon approval by the Executive Officer of the proposed pathway carbon intensity values. Energy and electricity use shall not exceed the current values that are classified by the applicant as confidential business information.

[1] Actual plant energy use values are classified as confidential business information and not reported herein.

Table 1: Proposed Lookup Table Entries for the Aberdeen Mina Plant

Fuel/Feedstock	Proposed Lookup Table Pathway Description	Carbon Intensity in gCO_2e/MJ (Including Indirect Effects)	Do Special Conditions Apply? (Y/N)[1]
Ethanol/Corn	Midwestern Dry Mill, 100% DDGS; Natural Gas	92.15	Y
Ethanol/Corn	Midwestern Dry Mill, 100% MDGS; Natural Gas	87.66	Y

[1] The special conditions to which this column refers are discussed in the "Carbon Intensity of the Fuel Produced" section of this summary

Staff Analysis and Recommendation

Staff has reviewed the Aberdeen application and has replicated, using the CA-GREET spreadsheet, the carbon intensity values calculated by Aberdeen. Aberdeen has provided documentation of the plant's energy use. Staff is satisfied that the thermal energy use value in the application accurately represents the plant's actual thermal energy consumption. Staff is also satisfied that the electricity use value in the application accurately represents the plant's actual electrical energy consumption. Staff believes that the carbon intensity value calculated by Aberdeen is sustainable. Consequently, staff believes that the carbon intensity values of 92.15 gCO_2e/MJ and 87.66 gCO_2e/MJ for the DDGS and MDGS pathways, respectively, accurately represent the carbon intensity values of the Aberdeen plant. Therefore, Staff recommends that the Aberdeen's application for a Method 2A corn ethanol pathway be approved.