

Fuel Pathway Staff Summary Little Sioux Corn Processors LLLP

*Deemed Complete Date: May 28, 2013
Certified and Posted Date: August 1, 2013*

Plant Summary

Little Sioux Corn Processors LLLP (LSCP) produces ethanol from corn at a dry mill plant located in Marcus, Iowa. LSCP has applied for a Method 2A pathway under the California Low Carbon Fuel Standard (LCFS). LSCP has undergone two expansions since operations began. It is currently operating at its permitted capacity of 120 million gallons per year of denatured ethanol. The plant is powered by natural gas and electrical energy from the local grid. The plant simultaneously produces modified distillers grains solubles (MDGS) and dried distillers grains solubles (DDGS). The MDGS contains approximately 55 percent moisture by weight and the DDGS contains approximately 10 percent moisture.

Although the LSCP plant is able to receive feedstock by rail, the applicant used CA-GREET feedstock transport default values to calculate the plant's pathway carbon intensity (CI). Because those defaults assume truck transport of feedstock, the transportation component of the plant's proposed CI may be slightly higher than its actual CI.

Carbon Intensity of Ethanol Produced

As shown in Table 1, the applicant is applying for two pathway CIs: one associated with DDGS production (89.09 gCO₂e/MJ), and the other with MDGS production (82.36 gCO₂e/MJ). 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 CO₂e/MJ CI improvement over the reference pathway.¹ The reference pathway for LSCP's proposed method 2A pathway is the Midwest dry mill, dry DGS, natural gas pathway (ETHC004) with a CI of 98.4 gCO₂e/MJ. This reference value also applies to MDGS pathways. LSCP pathways improve upon their reference pathway CIs by more than the requisite five (5) grams of CO₂e/MJ.

The LSCP pathways achieve lower carbon intensity values relative to the reference pathways through two principal means. First, the plant incorporates a modern plant design developed by ICM that results in less energy use. Thermal energy use at the LSCP plant is below the 32,330 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 LSCP plant is below the 1.08 kW-hr per gallon that is assumed for the reference pathway.²

¹ In the LCFS regulation, this 5 gCO₂e/MJ threshold is referred to as the "substantiality requirement."

² Actual plant energy use values are classified as confidential business information and not reported herein.

Table 1: Proposed Lookup Table Entries

Fuel	Pathway Identifier	Pathway Description	Carbon Intensity in gCO₂e/MJ (Including Indirect Effects)
Ethanol from Corn	ETHC081	2A Application*: Midwest; Dry Mill; Dry DGS; NG	89.09
Ethanol from Corn	ETHC082	2A Application*: Midwest; Dry Mill; Modified DGS; NG	82.36

*Specific Conditions Apply

Operations at the plant will be subject to the following conditions designed to ensure that the CI of the of the LSCP plant will remain at or below the value appearing in Table 1. The conditions must be met for every gallon sold in California:

- The total pathway-specific thermal and electrical energy use (BTU/gal) values reported in the LSCP Method 2A application shall not be exceeded. These values are classified by the applicant as confidential business information. Pathway-specific energy use values may be calculated using any accounting period up to and including one year.

Staff Analysis and Recommendation

Staff has reviewed LSCP’s Method 2A application, and finds the following:

- Staff has replicated, using the CA-GREET 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 LSCP’s Method 2A application.

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