

Fuel Pathway Staff Summary Trenton Agri Products, LLC

Trenton, Nebraska Plant Summary

Trenton Agri Products, LLC (TAP) produces ethanol from corn at a dry mill plant in Trenton, Nebraska. TAP has applied for Method 2A pathways under the California Low Carbon Fuel Standard (LCFS). The TAP plant is an ICM-designed facility with a nameplate capacity of 40 million gallons per year of denatured ethanol. According to the Air Quality Construction Permit issued by the Nebraska Department of Environmental Quality, the plant can produce up to 50 million gallons of denatured ethanol per rolling twelve-month period. The plant is a natural gas-fired facility producing both wet and dry distiller's grains with solubles (DGS). The applicant reports that most of the DGS it produces is wet DGS (requiring no drying, i.e., no natural gas and electricity consumption by the dryer), while the remainder is dry DGS, depending on market demand.

Although the TAP plant is able to receive feedstock by rail, CA-GREET feedstock transport default values were used 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 dry DGS production (88.39 gCO_{2e}/MJ) and the other with wet DGS production (79.99 gCO_{2e}/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 CO_{2e}/MJ CI improvement over that pathway.¹ The reference pathways for TAP's proposed method 2A pathways are two Midwest dry mill, natural gas pathways: the dry DGS pathway with a CI of 98.4 and the wet DGS pathway with a CI of 90.1. Both TAP pathways improve upon their reference pathway CIs by more than the requisite five grams of CO_{2e}/MJ.

These CI improvements were made possible by the plant's efficient design. ICM Inc. designed TAP to achieve reductions in both thermal and electrical energy consumption. As a result, it improves upon both the thermal and electrical energy use levels assumed for the reference pathways (32,330 BTU per gallon thermal energy use for the dry DGS pathway and 1.08 kW-hr per gallon for both pathways).²

¹ In the LCFS regulation, this 5 gCO_{2e}/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/Feedstock	Proposed Lookup Table Pathway Description	Carbon Intensity in gCO₂e/MJ (Including Indirect Effects)	Do Special Conditions Apply? (Y/N)¹
Ethanol/corn	Midwest; Dry Mill; Dry DGS, NG	88.39	Y
Ethanol/corn	Midwest; Dry Mill; Wet DGS, NG	79.99	Y

¹ The special conditions to which this column refers are discussed in the “Operating Conditions–Trenton Agri Products, LLC (Trenton, NE)” section of this summary

Operating Conditions–Trenton Agri Products, LLC (Trenton, NE)

The following will become operating conditions upon approval by the Executive Officer of the TAP pathway:

- The total pathway-specific thermal and electrical energy use (BTU/gal) values reported in the TAP 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.
- TAP may produce up to 100% wet or up to 100% dry DGS using the pathway CIs shown in Table 1. The quantities of wet and dry DGS the plant produces are classified as confidential business information by the applicant.
- All ethanol gallons associated with DGS that is partially or fully dried must be sold at the higher pathway CI of 88.39.

In order for TAP to sell ethanol in California under the CIs appearing in Table 1, these three conditions must be met for every gallon sold.

Staff Analysis and Recommendation

Staff has reviewed the TAP application and has replicated, using the CA-GREET spreadsheet, the carbon intensity values calculated by TAP. TAP has provided documentation verifying the plant’s thermal and electrical energy use. Staff is satisfied that the energy values presented in the application accurately represent the plant’s actual thermal and electrical energy consumption. Staff believes that TAP will be capable of maintaining the carbon intensity values appearing in Table 1. Consequently, staff believes that the carbon intensity values of 88.39 and 79.99 gCO₂e/MJ for the DDGS and WDGS pathways, respectively, accurately represent the carbon intensity values of the TAP plant.

Therefore, staff recommends that the TAP application for two Method 2A corn ethanol pathways be approved.