

**Method 2B Pathway Application Summary:
Conestoga Energy Partner, LLC/Bonanza BioEnergy, LLC—Sorghum/Corn
Ethanol**

Plant Summary

Conestoga Energy Partners, LLC/Bonanza BioEnergy, LLC(Bonanza) operates an ethanol plant in Garden City, Kansas. This plant uses a feedstock consisting of a sorghum/corn mixture to produce ethanol. The ratio of sorghum to corn will vary monthly due to the time of year each crop is ready for harvesting. The farming energy is lower because natural gas is not used to dry the harvested sorghum prior to transport. Because lime is not used, fertilizer usage is also lower than average.

The plant produces approximately 55 million gallons of ethanol annually. The finished product is shipped to California by rail. Bonanza uses electricity and natural gas for its process power.

Carbon Intensity of Ethanol Produced

The total carbon intensity of the ethanol produced by the Bonanza Plant consists of the carbon intensity associated with sorghum and corn cultivation, agricultural chemical production, feedstock transport, ethanol production, ethanol transport and delivery, and co-products. No natural gas is used in sorghum farming, no lime or herbicide is used, and the total farming energy is 15,160 BTU/bu.

The LCFS lookup table currently contains 13 corn ethanol pathways and no sorghum ethanol pathways. None of these pathways adequately describes the Bonanza process, and none are sufficient to serve as Method 2A reference pathways. The proposed Bonanza carbon intensities are 76.75 gCO₂e/MJ for the corn pathway and 73.39 gCO₂e/MJ for the sorghum pathway.

Because, the Bonanza 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 Bonanza plant's total energy use value and electricity use value will become operating conditions upon approval by the Executive Officer of the carbon intensity value. The energy and electricity uses shall not exceed the current values that are classified by the applicant as confidential business information.

Staff Analysis and Recommendation

ARB staff has reviewed the Bonanza Plant application and has replicated, using the CA-GREET spreadsheet, the carbon intensity value calculated by the

applicant. Conestoga provided documentation for the plant's energy usage and ethanol production volume. Staff is satisfied that the energy consumption values in the application accurately represent the Bonanza Plant's actual energy usage. Staff believes that the carbon intensity value reported by Conestoga will be sustainable. Consequently, staff believes that the carbon intensity value of 76.75 gCO₂e/MJ for corn ethanol and 73.39 gCO₂e/MJ for sorghum ethanol proposed by Conestoga accurately represents that plant's carbon intensities. Staff recommends, therefore, that the Bonanza Plant's application for a Method 2B ethanol pathway be approved.