

Staff Summary:
Mixed-Animal-Fat-to-Biodiesel Method 2B Pathway
National Biodiesel Board

Plant Summary

The National Biodiesel Board (NBB) has submitted a Method 2B application for two mixed-animal-fat-to-biodiesel pathways. Like ARB-developed fuel pathways, the NBB's pathways would be available to all producers whose actual fuel pathways are substantially similar to those developed by the NBB. Both NBB pathways were based on biodiesel and renewable diesel pathways developed by ARB staff. The NBB left most of the default parameters used by ARB unchanged. Only the transportation distances and the energy mix inputs were modified, as described below. Both pathways assume that feedstocks are rendered using the high-energy process.¹

These pathways cover biodiesel produced from any combination of animals fats. NBB found no evidence that biodiesel CIs vary according to the type of animal fat used as a feedstock.

The only difference between the two pathways proposed by the NBB is the region in which biodiesel production takes place: in one pathway, production occurs in California, while in the other, production occurs outside of California. This regional difference produces a carbon intensity difference for two reasons: differences in the mix of energy sources used to generate electricity and variation in the distances that feedstocks and finished fuel must be transported. The actual effect of these differences on the final pathway carbon intensities, however, is insignificant: 0.45 grams of CO₂-equivalent emissions per mega joule of fuel energy (gCO₂e/MJ). A difference this small does not warrant the creation of separate pathways. Staff recommends, therefore, that only the non-California pathway, which has a carbon intensity (CI) of 40.18 gCO₂e/MJ be approved as a single national mixed-animal-fat-to-biodiesel pathway.

Carbon Intensity of the Fuel Produced

The Low Carbon Fuel Standard (LCFS) lookup table currently contains no pathways for mixed-animal-fat-to-biodiesel. Therefore, the NBB pathway falls under the Method 2B provisions of the LCFS. Because the NBB's 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 proposed pathway CI is shown in Table 1.

¹ ARB developed two tallow-to-renewable diesel pathways. These pathways differ only in the amount of energy used to render the feedstock. The high-energy process uses more energy to heat the tallow than does the low-energy process.

Table 1: Proposed Lookup Table Entry

Fuel/Feedstock	Proposed Lookup Table Pathway Description	Carbon Intensity in gCO₂e/MJ (Including Indirect Effects)	Do Special Conditions Apply? (Y/N)
Biodiesel/Mixed-animal-fat	Mixed-animal-fat-to-Biodiesel produced in the United States; high energy rendering	40.18	N

Staff Analysis and Recommendation

Staff has reviewed the National Biodiesel Board’s application, and finds the following:

- Staff has replicated, using the CA-GREET spreadsheet, the carbon intensity values calculated by the National Biodiesel Board; and
- Staff agrees that the energy consumption values in the application are achievable by most or all producers of mixed-animal-fat-based biodiesel in the United States.

On the basis of these findings, staff recommends that National Biodiesel Board’s non-California Method 2B pathway be approved as a single U.S. mixed-animal-fat-to-biodiesel pathway.