

**STAFF SUMMARY**  
**Method 2B Application**  
**Pacific Ethanol Inc. Stockton, California**  
**Waste Wine to Ethanol**  
**(ETHWB002)**

Deemed Complete Date: December 7, 2015  
Posted for Comment Date: December 17, 2015  
Certified Date: December 30, 2015

**Pathway Summary**

Pacific Ethanol Inc. (Pacific) produces ethanol from multiple feedstocks at its plant in Stockton, California (CA). The plant produces approximately 62.5 million gallons of ethanol annually. The plant is a dry mill, natural-gas-fired facility but can also use landfill gas as process fuel if availability and economic conditions are favorable.

Pacific has applied for a Low Carbon Fuel Standard (LCFS) pathway for ethanol distilled from waste wine at its Stockton plant. The waste wine is procured from wineries located in Modesto, CA. Because it is considered a waste stream by the winery, there is no indirect land use change or upstream agriculture impacts for this pathway application. The feedstock is transported from the winery to the Stockton plant by truck. The finished fuel is transported 50 miles to blending terminals and another 50 miles for distribution to refueling stations.

**Carbon Intensity of the Fuel Produced**

The LCFS lookup table currently contains no pathway covering ethanol produced from waste wine. Therefore, the Pacific pathway falls under the Method 2B provisions of the LCFS. Because Pacific'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 gCO<sub>2</sub>e/MJ, and a minimum production volume of ten million gallons per year).

As shown in the table below, the applicant has calculated the CI of its pathway to be 18.70 gCO<sub>2</sub>e/MJ.

## Operating Conditions

### Proposed Lookup Table Entry

| Fuel    | Pathway Identifier | Pathway Description  | Carbon Intensity in gCO <sub>2</sub> e/MJ |                                    |       |
|---------|--------------------|--|---|------------------------------------|-------|
|         |                    |  | Direct Emissions                          | Land Use or other Indirect Effects | Total |
| Ethanol | ETHWB002           | 2B Application*: California; Dry Mill; Waste Wine; Natural Gas | 18.70                                     | 0                                  | 18.70 |

\*Specific Conditions Apply

Operations at the plant will be subject to the following operating conditions designed to ensure that the CI of the ethanol produced using this feedstock at the Pacific plant will remain at or below the values appearing in table above.

- No conditions are placed on the amounts of electricity and natural gas consumed and the ethanol yield at the Pacific's plant, so long as the CIs reported in the above table are not exceeded. For purposes of determining compliance with this operating condition, at any time ARB chooses to audit the facility, ARB will calculate or ask the applicant to calculate the CI based on data from the most recent 12 months of operation, excluding periods of abnormal operations, such as planned maintenance or unpredictable, unavoidable, and uncontrollable force majeure events. The plant's thermal and electrical energy use, and ethanol yield values are classified by the applicant as confidential business information.
- Pacific must maintain an accounting system that will enable it to demonstrate unequivocally how much waste wine was purchased and the corresponding amount of ethanol distilled over a prior period as may be specified by ARB staff.
- The commingled feedstock<sup>1</sup> accounting method will be used to determine the CIs of mixed feedstock used in this ethanol plant. Producers and regulated parties should use this approach to calculate the volumes based on weighted average of ethanol associated with each feedstock present in the finished fuel storage tank at any given time. Producers should be able to provide records that unequivocally associate specific quantities of feedstock with specific volumes of fuel produced. As volumes are added to and withdrawn from the tank, the volume of each feedstock-related CI will be adjusted to account for those additions and withdrawals. Commingled feedstock CI accounts for mixed-feedstock must be directly determined over an accounting period of no more

<sup>1</sup> California Air Resources Board, 2012. Mixed-Feedstock Bio- and Renewable Diesel Guidance Low Carbon Fuel Standard, December 3, 2012: <http://www.arb.ca.gov/fuels/lcfs/2a2b/internal/mixed-feedstock-bdrd-120112.pdf>

than a calendar quarter. That is, all volumes of fuel produced must be associated with a specific feedstock within a calendar quarter. Gallons will be associated with feedstocks based on the accepted yields for each fuel.

### **Staff Analysis and Recommendations**

Staff has reviewed the Pacific's Method 2B application and finds the following:

- Staff has replicated, using the CA-GREET1.8b spreadsheet, the carbon intensity value calculated by the applicant;
- Staff has concluded that the plant's actual thermal and electrical energy consumption are not likely to exceed the thermal and electrical energy consumption levels specified in the Pacific Method 2B application; and
- Staff has concluded that Pacific is capable of operating its plant in a manner such that the ethanol yield is equal to or greater than the corresponding value specified in Pacific Ethanol's Method 2B application, and that compliance with the operating conditions above can be maintained.

On the basis of these findings, ARB staff recommends that Pacific's application for the above Method 2B LCFS pathways be certified.