Application for the Establishment of a New Fuel Pathway under the California Low Carbon Fuel Standard

Instructions

Use the form below to apply for a new or modified fuel pathway under the Method 2A and 2B provisions of the California Low Carbon Fuel Standard (LCFS). Submittal of this form initiates the formal pathway evaluation process. Because that process is subject to strict time constraints, prospective applicants should discuss their proposals with ARB staff prior to submitting a completed application form. Staff will advise potential applicants on the documentation that must be submitted along with this form. A list of LCFS Method 2A/2B staff contacts appears in the final section of this document. Submission of an incomplete application packet will result in delays, which could in turn lead to denial. This application form is to be submitted as a cover sheet to the full Method 2A or 2B application packet. A general list of the types of supporting information that must be submitted with a 2A/2B application appears in Section IV, of the application form

The full method 2A/2B application process is described in detail in a document entitled *Establishing New Fuel Pathways under the California Low Carbon Fuels Standard*. This is available at:

http://www.arb.ca.gov/fuels/lcfs/012010newguideline.pdf).

Lifecycle analysis reports included with Method 2A/2B application packets should be similar in format, content, and scope to those already approved under the LCFS. Examples of approved life cycle analyses can be found at

http://www.arb.ca.gov/fuels/lcfs/workgroups/workgroups.htm#pathways

Applicants may designate portions of their submittals as trade secrets. All information so designated will be treated in accordance with 17 CCR §§ 91000-91022 and the California Public Records Act. In deciding on what information to designate as secret, applicants must consider the public nature of the rulemaking process. New and modified pathways can be approved only if enough information is available publicly to justify that approval.

Application Form

I. Application Submission Date: 08/04/2010

II. Company Contact Information

a. Company Name: **PT Indolampung Distillery**

b. Mailing Address:

Address Line 1	Wisma GKBI Level 5
Address Line 2	Jalan Jenderal Sudirman Kavling 28
City	Jakarta
Country	Indonesia
Zip/Postal Code	10210

c. Main Company Phone Number: +62 21 5722720

d. Secondary Company Phone Number: +62 725 563683

e. Fax number: +62 21 5722538

f. Primary Method 2A/2B Contact Person:

Name: Francois Legendre

Position/Title: Chief Operating Officer

Email Address: francois_legendre@sugargc.com

Office Phone Number: +62 725 563 630

Mobile Phone Number: +62 811 148 7389

Fax Number: +62 725 563032

g. Secondary Method 2A/2B Contact Person:

Name: Anand Gopal

Position/Title: US consultant for PT Indolampung Distillery

Email Address: anandrgopal@gmail.com

Office Phone Number: 510 735 6600

Mobile Phone Number: 510 735 6600

Fax Number

h. Company Web Site URL: none

i. LCFS Reporting Tool Organization ID code (if known): N/A

j. U.S.E.P.A Company ID (if known): N/A

k. U.S.E.P.A Facility ID (if known): N/A

III. Pathway Information

a. Pathway application type. Applicants are encouraged to discuss their pathway application types with ARB staff before proceeding. Please check one box only.

☐ Method 2A: Sub-pathway ☒ Method 2B: New Pathway

b. Brief description of proposed pathway. Please emphasize the important innovations and/or distinctive characteristics associated with the proposed pathway or sub-pathway

The current lifecycle calculation for sugarcane ethanol in the LCFS assumes that sugarcane juice is the only feedstock that a sugarcane factory uses to produce fuel ethanol. While this may be true of the majority of factories in Brazil, this pathway does not accurately reflect our production process. At PT Indolampung Distillery we use only molasses, which is a byproduct of sugar production, to manufacture fuel grade ethanol. We are proposing a new LCFS pathway, developed in a peer-reviewed publication in Environmental Research Letters by Gopal and Kammen (2009), which calculates an accurate lifecycle greenhouse gas emissions value for the production of ethanol from any proportional mix of sugarcane juice and ethanol. In this pathway, we propose the use of the market value co-product allocation method between sugar and molasses which is an innovative way to encourage the use of low-value or waste feedstocks to produce high value fuel to meet the LCFS. While the pathway being applied for can be used to determine the LCA GHG value for any mix of molasses and sugarcane juice, all the supporting documents and calculations we submit here pertain to our specific case where the feedstock is 100% molasses. According to our analysis which couples CA-GREET with the Gopal-Kammen model, our ethanol's direct well-to-tank LCA greenhouse gas emissions are **29.19 gCO_2-eq/MJ of anhyd EtOH**.

c. For Method 2A Applications only

1. Reference pathway (Existing fuel pathway to which the proposed new sub-pathway is most closely related). The carbon intensity of the reference pathway must be higher by at least 5 gCO_2e/MJ than the carbon intensity of the proposed pathway described in this application. Show all pathway information exactly as it appears in the LCFS Lookup Table:

Fuel:

Pathway Description:

Carbon Intensity Values (gCO_2e/MJ):

Direct Emissions:

Land Use or Other Indirect Effect:

Total:

2. Compositional differences (if any) between the fuel produced by the new sub-pathway and the reference pathway identified in item c, 1, above).

d. Final carbon Intensity of the proposed pathway or sub-pathway: **29.19 gCO_2-eq/MJ of anhyd EtOH** (direct only)

e. Annual volume of fuel that would be produced using the proposed new sub-pathway (millions of gallons per year [MGY]). **4000 MGY**

1. This production volume is expected to be achieved within how many years from the start of production? **4000 MGY of molasses ethanol is already being produced in Central America and SE Asia combined which are places that are ideally located to export to California**

2. Does the applicant expect this volume be achieved by a single or by multiple facilities?

☐ A single facility ☒ Multiple facilities

3. If the applicant expects this volume to be achieved by multiple facilities, would all facilities be owned by a single firm?

☐ Single firm ☒ Multiple firms

f. Lower Heating Value of the fuel to be produced from new sub-pathway (mega joules per gallon): **~80 MJ/gal**

g. The range of production volumes over which the proposed pathway carbon intensity value is valid. The values reported below must be supported in the documentation accompanying this application.

	Fuel Volume	**Units (gallons; litres; joules,etc.)**
Lower bound of production volume range	0	Gallons
Upper bound of production volume range	10,000,000	gallons

The upper bound in the table above is an estimate since it is impossible to quantify this accurately. Since molasses is a byproduct of sugar production, any non-linearities in additional molasses ethanol production will be driven by the sugar market. For example, a surge in sugar prices may result in input increases per ton of cane produced. Sustained demand for molasses ethanol may result in the building of additional capacity which would be a non-linear increase in WTT GHG emissions. However, in contrast to cane juice ethanol, it is much less likely that any non-linear changes in upstream lifecycle parameters can be causally attributed to molasses ethanol.

h. The potential land use change impacts (if any) associated with the proposed sub-pathway. For Method 2A applications the applicant should state whether or not the proposed sub-pathway is likely to generate the same land use change impacts as the reference pathway (see Section 3 c, above). This includes the case in which the reference pathway generates no land use change impacts. A brief discussion for the rationale behind this conclusion should then be provided.

Method	Land Use Change Impact Declaration	Discussion
Method 2A	☐ Same impacts as most similar pathway ☐ Impacts differ from most similar pathway	
Method 2B	☒ Land use change impacts likely ☐ Land use change Impacts unlikely	As long as it is agreed that molasses is not a waste product, its diversion to manufacture fuel ethanol will have a land use impact. However, it is critical to note that molasses ethanol necessarily has to have a land use impact that is less than cane juice (or Brazilian) ethanol. This is because the opportunity cost (or market value) of cane juice is always higher than the opportunity cost of molasses. Any diversion of cane juice for ethanol will result in a drop in world sugar production over the baseline while the diversion of molasses for ethanol will have no such effect, only a much smaller impact on feed supplement markets.

IV. Application Submittal Checklist. Listed below are the documents and files that may be submitted in support of a method 2A/2B application. Check the box to the left of each document or file type included in your submittal. After each submittal category is a check box labeled "includes trade secrets." Check that box if the submittal category contains any information the applicant considers to be a trade secret. In the actual submittal, the specific information falling in to the trade secret category must be clearly marked. Additional information regarding the submission of trade secrets can be found in the Instructions, above.

☒ Life cycle analysis report

☐ *Includes trade secrets*

☐ Engineering reports

☐ *Includes trade secrets*

☐ Equipment technical specifications

☐ *Includes trade secrets*

☒ Production process schematics, technical drawings flow diagrams, maps, or other graphical representations

☐ *Includes trade secrets*

☒ Technical papers or journal articles

☐ *Includes trade secrets*

☐ Emissions monitoring data or emissions modeling results

☐ *Includes trade secrets*

☒ Spreadsheets, data files, and similar files documenting the calculations behind the fuel life cycle analysis

☐ *Includes trade secrets*

☐ Other: In the space below, describe any additional submittals. Rationales for documents submitted or omitted may also be provided.

☐ *Includes trade secrets*

ARB Method 2A and 2B Application Process Contacts

Name	Phone Number	E-mail Address
John Courtis	916-323-2661	jcourtis@arb.ca.gov
Wes Ingram	916-327-2965	wingram@arb.ca.gov
Chan Pham	916-323-1069	cpham@arb.ca.gov
Kevin Cleary	916-323-1009	kcleary@arb.ca.gov
Alan Glabe	916-323-2416	aglabe@arb.ca.gov