CALIFORNIA AIR RESOURCES BOARD

Low Carbon Fuel Standard
Tier 2 Pathway
Application

Application No. B0404 Updated: 03/28/2022 (See Underlined Text)

Staff Summary

US Venture, Inc.
Augean RNG Project, Outlook, Washington

Compressed Natural Gas (CNG) from Dairy Manure

Deemed Complete Date: 10/19/2022
Posted for Comment Date: 3/8/2023
CI Certified Date: 3/28/2023
CI Start Date: 10/1/2022

Pathway Summary

US Venture, Inc seeks provisional certification of a Tier 2 pathway for biomethane (Bio-CNG) [1] production from anaerobic digestion of dairy manure produced by George DeRuyter and Sons Dairy in Outlook, Washington. Augean RNG LLC owned and operated the Augean RNG Project biogas facility, which upgrades biogas to biomethane. The biogas will be trucked and then compressed and injected into Northwest Pipeline LLC decant located 3.9 miles away in Outlook, Washington and supplied to CNG vehicles in California as bio-CNG using book-and-claim accounting for biomethane [2]. US Venture, Inc owns the environmental attributes associated with the biomethane, and sells these attributes using book-and-claim accounting through its contracted California transportation fuel dispensers.

The facility under the George DeRuyter and Sons Dairy LLC name is registered with the Climate Action Reserve (CAR 1080, Listed: 09/17/2014; Crediting Period Expires: 03/31/2025) and has participated in California's Offset Program (ARB: CALS5094); This project also participates in the federal Renewable Fuel Standard Program.

Augean RNG Project operates multiple storage lagoons, at DeRuyter and Sons Dairy, co-located with the below ground plug-flow digester that processes dairy manure from their co-located farm operations and captures the methane produced as a

[1] "Bio-CNG" means biomethane which has been compressed to CNG. Also referred to herein as biomethane or renewable natural gas (RNG).
[2] All citations to the LCFS Regulation are found in Title 17, California Code of Regulations (CCR), section 95480-95503. Book-and-claim accounting for biomethane is primarily addressed in section 95488.8(i) of the LCFS Regulation.

byproduct of anaerobic decomposition that would otherwise be emitted to the atmosphere under baseline manure treatment in the anaerobic lagoon system.

Prior to the installation of the plug-flow digester in 2006, DeRuyter and Sons Dairy operated with four open lagoons from 1992. Since the installation of the digester in 2006 and before building the upgrading facility in 2020, the farm was combusting the biogas. Prior to sending manure to the digester, the dairy farm did not complete full clean-outs of the lagoon manure management system, so no lagoon clean-outs were modeled.

George DeRuyter and Sons Dairy has an average livestock population of 10,000 – 11,000 cows between milking, dry, and heifers with approximately 55% of the cows (5,550 – 6,000) being milking and dry cows. Before the digester was installed, a slope screen was used to separate the solids prior to manure entering the open lagoons with solids separated used for compost. A small fraction of the manure was left dry aerobically in open lots. After the digester was installed, 100% of the manure collected was sent to the digester and a screw press was used to remove solids from the digester effluent. There were no other changes to the manure management practices pre and post digester.

Biogas collected from the digester is processed to pipeline quality biomethane at the upgrading facility at the same location and then it is being trucked for injection into the pipeline system owned and operated by Northwest Pipeline LLC located 3.9 miles away. Per the fuel pathway applicant, the facility is in the process of installing and implementing a direct pipeline injection in 2022. As a result, a portion of the RNG produced in October 2021 was injected directly into the pipeline and the remaining was trucked. The Augean facility purchased brown gas, from the pipeline, to be used as boiler fuel to heat the digester. The upgrading facility is powered using electricity and propane from the local utility companies.

Carbon Intensity of Fuel Type Pathways

The CI is determined from a life cycle analysis conducted using a modified version of the Board-approved Tier 1 Simplified CI Calculator for Biomethane from Anaerobic Digestion of Dairy and Swine Manure.[3] The calculator was modified to explain calculation changes, especially new process units/life cycle stages or inputs. The modified calculator has been determined to be equivalent to CA-GREET3.0 pursuant to section 95488.7(a)(1) of the LCFS regulation. The applicant has provided operational data and supporting documentation for the list life cycle stages, unit operations, transport of feedstock and/or fuel (e.g., digester, gas cleanup, and pipeline injection of biomethane) for a period of 3 months, from August 2021 to October 2021. The following table lists the proposed CI for this pathway.

[3] The Tier 1 Simplified CI Calculator for Biomethane from Anaerobic Digestion of Dairy and Swine Manure (August 13, 2018), incorporated by reference in the LCFS Regulation, section 95488.3(b).

Proposed Pathway CI

Pathway Number	Fuel & Feedstock	Pathway FPC	Pathway Description	Carbon Intensity (gCO2e/MJ)
B040401	CNG from Dairy Manure	CNG026B04040100	Biogas from dairy manure at Augean RNG project, Outlook, WA; upgraded to pipeline quality at Augean RNG Project; currently trucked to pipeline injection and pipelined to CA for transportation use.	-216.63

Operating Conditions

The certified CI value in the above table may be used to report and generate credits for fuel quantities that are produced at the facility in the manner described in the applicant's Life Cycle Analysis (LCA) report, and dispensed for transportation use in California, subject to the following requirements and conditions:

1. Fuel pathway holders are subject to the requirements of the California Air Resources Board's (CARB) Low Carbon Fuel Standard (LCFS) regulation, which appears at sections 95480 to 95503 of title 17, California Code of Regulations. Requirements include ongoing monitoring, reporting, recordkeeping, and third-party verification of operational CI and a controlled process for providing product transfer documents or other similar records to counterparties or CARB.

2. CARB has reviewed the contractual agreements between the pathway holder/biogas upgrader, and marketer(s). All unredacted contract agreements relevant to this biomethane fuel pathway were submitted to CARB as part of the application, pursuant to section 95488.8(i)(2)(B). To confirm compliance with Annual Fuel Pathway Report requirements, the pathway holder shall notify CARB of any change in existing contracts that were submitted to CARB with the fuel pathway application, including any new contracts and termination of existing contracts, with any entity engaged in the transfer, purchase, or sale of biomethane and its environmental attributes. Failure to notify CARB of such a change could result in enforcement action and could invalidate this fuel pathway.

   Fuel pathway holders must update the list of Bio-CNG dispensing entities and any biomethane end users at the time of Annual Fuel Pathway Report

submission. Contractual agreements from the fuel dispensing entities do not need to be submitted in the original fuel pathway application or the Annual Fuel Pathway Reports; instead, they must be verified as part of the annual verification of the Quarterly Fuel Transactions Reports.

3. The biomethane and its environmental attributes claimed under this pathway shall not be claimed by any entity for any other purpose, nor under any other program notwithstanding the exceptions listed in LCFS Regulation section 95488.8(i)(2). The LCFS places no restriction on the use of any emission reduction credits generated by the project for emissions that are demonstrated to be additional to reductions claimed under the LCFS.

4. The fuel pathway holder must include the assumptions and calculations used to establish the fraction of solids input to each manure management system in its Annual Fuel Pathway Report submitted to CARB for third-party verification of the operational CI.

5. Any quantity of biomethane metered at inlet to the upgrading facility that cannot be demonstrated by meter records to have been pipeline injected or destroyed, must be calculated by energy balance and accounted for in the CI as a fugitive methane emission if the calculated value exceeds the default 2% fugitive emission.

6. The fuel pathway applicant/holder must maintain a manifest system for each load transported, recording information and events as they occur. Each set of manifest forms (bill of lading or BOL) must include the following information:

    a. A consecutive numerical tracking number
    b. Tube trailer specifications, such as capacity and operating pressure
    c. Company name and addresses (physical and mailing) and printed names of the upgrading facility representative and truck operator
    d. Metered biomethane quantity loaded and date/time transferred from biomethane upgrading facility operator to the transport company representative, signed by both the upgrading facility representative (Terminal Manager) and truck operator.
    e. Metered biomethane quantity offloaded and date/time delivered and injected to the common carrier pipeline, signed by the pipeline injection facility representative (Terminal Manager).
    f. The upgrading facility operator and fuel pathway holder must retain the completed manifest forms (hard or scanned copies) for 10 years.

7. The metered quantity of biomethane that is eligible for reporting transactions under this pathway is referred to as the Conservative Monthly Offloading Quantity and must be equal to the lesser of the two metered quantities, loaded and offloaded, on a monthly basis. The conservative monthly offloading quantity is subject to two additional constraints described below:

a. Metered quantities of biomethane loaded and offloaded from CNG tube trailers are established through automatic data archival in the data historian system, and subsequently copied onto the bills of laden (BOLs). Due to human error in the BOL creation and signing process, discrepancies between the monthly BOL quantities and monthly historian quantities are expected to occur. A margin of error threshold of 5% discrepancy between these quantities is established to determine eligible quantities for reporting:

   If the discrepancy between the monthly loading BOL quantity and monthly loading historian quantity is equal to or lower than the 5% margin of error, then the monthly loading quantity is the monthly historian loading quantity.

   Likewise, if the discrepancy between the monthly offloading BOL quantity and monthly offloading historian quantity is equal to or lower than the 5% margin of error, then the monthly offloading quantity must equal the monthly historian offloading quantity. If the discrepancy between the monthly offloading BOL quantity and monthly offloading historian quantity is higher than the 5% margin of error, then monthly offloading quantity must be the lower of the monthly BOL offloading quantity and monthly historian offloading quantity.

b. If the pipeline injection statement quantity is less than the sum of the conservative monthly offloading quantities for all facilities injecting biomethane at the Northwest Pipeline LLC, each of the facility's biomethane quantities must be adjusted on a pro-rata basis so that the aggregate Final Monthly Quantity does not exceed the pipeline injection statement.

   If the pipeline injection statement quantity is greater than the sum of all facilities injection biomethane at Northwest Pipeline LLC, the excess biomethane is not eligible for reporting for credit generation. The biomethane quantity attributable to Augean RNG Project is limited to the conservative monthly offloading quantity

8. The fuel pathway holder must maintain records of venting events associated with biomethane transport by truck and report estimated venting quantities and the estimation method used in its Annual Fuel Pathway Report submitted to CARB for third-party verification of the operational CI.

9. The fuel pathway holder must report total injection site facility energy use and biomethane flow, and the calculations used to allocate these parameters to each digester pathway based on its monthly share of total biomethane measured at the injection site facility, in its Annual Fuel Pathway Report submitted to CARB and subject to third-party verification of the operational CI.

10. Each dairy/swine farm supplying manure to a digester will be subject to third-party verification to support the fraction of volatile solids inputs to the modified

Simplified CI Calculator for Biomethane from Anaerobic Digestion of Dairy and Swine Manure for baseline and project modeling (Manure-to-Biogas (LOP Inputs) tab). CARB must be immediately notified through the AFP if any changes to dairy/swine manure suppliers (e.g., additional suppliers) are made from the certified pathway. Modifications to the dairy/swine manure suppliers may require submission of a new pathway for review, validation, and certification. Failure to notify CARB of such a change may result in invalidation of this fuel pathway and/or associated LCFS credits generated, and/or associated enforcement action.

Staff Analysis and Recommendation

Staff has reviewed the application and has replicated, using the Tier 2 modified version of the Simplified CI Calculator, the CI values calculated by the applicant. EcoEngineers (H3-20-008) submitted a positive validation statement. Staff recommends this application be certified on a provisional basis after all the comments received during the 10-day comment period are addressed satisfactorily by the applicant. The certification is subject to the operating conditions set forth in this document.

Comments and Certification

CARB has reviewed the applicant's response to comments received during the 10-day comment period, determined that these adequately address factual and methodological errors, and certified the pathway.