



MAAS
ENERGY WORKS

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June 18, 2024

Liane M. Randolph, Chair
California Air Resources Board
Low Carbon Fuel Standard
1001 I St #2828,
Sacramento, CA 95814

Re: Tier 2 Pathway Application No. B0547; Response to M. Stewart Salem

Dear Chair Randolph:

Maas Energy Works, LLC on behalf of Oak Valley Energy, LLC ("Pathway Applicant") is responding within the scope of the Low Carbon Fuel Standard ("LCFS") program §95488.7(d)(5)(A) to Mr. Salem, in a letter submitted June 13, 2024, regarding the Tier 2 Pathway Application (B0547) (the "Application").

Regulation §95488.7(d)(5)(A) states, "Only comments pertaining to potential factual or methodological errors will require responses from the fuel pathway applicant," We have carefully reviewed the public comments received on the Application and have determined that only one comment (referring to a formula discrepancy) refers to a factual or methodological error. The Pathway Applicant will respond to the remarks made by the Commentor below. Furthermore, we believe that after the California Air Resource Board ("CARB") has sufficiently reviewed and approved our response, there is no need to make any changes to our pending application.

Mr. Salem's comments read as follows:

“The provisional carbon-intensity scores for these proposed pathways are -407.68. Having reviewed the information submitted to CARB, I would appreciate assistance understanding how a brownfield biogas project could achieve such a low carbon-intensity score. The first permits obtained for the dairy were issued by the Idaho Department of Environmental Quality in July 2006 (attached), which stated and required the farm be 100% dry lot until a new permit was obtained in 2021. A quick look on the historical satellite imagery from Google Earth shows that it continued to operate as a dry lot dairy until at least 2016--the feed lanes show manure scraping by heavy machinery. The then-extant lagoon was small and an ordinary dairy lagoon for milk parlor washout.

Dry lot dairies are near-optimal for avoidance of methane emissions since, unlike liquid effluent facilities, dry lot dairies capture volatile solids in the form of dried manure, which is then aerobically (and not anaerobically) composted to fertilizer which process does not release a material amount of methane.

As Oak Valley Dairy 1 & 4 was already relatively environmentally friendly in capturing and aerobically processing manure as a dry lot dairy until the covered digesters and lagoons were completed in 2021, the impressive proposed negative CI for Oak Valley scores raised my eyebrows.

Please could CARB help me understand the baseline scores used for Oak Valley Dairy 1 & 4 and how and why the CARB Staff Summary proposes CI scores which are less than -400 for a non-greenfield project, and if CARB Staff made a determination that Oak Valley was indeed a greenfield project notwithstanding its 15-years of operation as a dry lot?

Regarding the questions raised by M. Stewart Salem, Oak Valley Dairy is not modeled as a greenfield project. The project's baseline emissions were modeled based on actual site conditions and calculations using the CA-GREET 3.0 model to quantify the reduction in the methane emissions that, but for the voluntary installation of the digester, would otherwise be vented to the atmosphere as a result of livestock operations from those farms. The submitted application is thoroughly scrutinized during many phases, where CARB and the third-party verifier examine multiple data points, contracts, permits, and other important factors to establish an accurate CI score, including the project's baseline.

Mr. Salem is incorrect in implying that the original lagoon was smaller than today and operationally distinct from its current use. Rather, the dairy's original and main storage lagoon, still in use today, was built at the same time as the original dairy. This 2006 lagoon construction, at today's size, is visible on Google Earth satellite imagery. It is this lagoon that was to handle all the manure that would result from building more barns in the future. In fact, almost immediately after initial construction in 2006, the dairy secured permits in 2008 for new free stall barns to be built on the property that contained the open lots, while still using the same storage lagoon. These permits were later modified, and new barns were built in 2018, replacing the dry lot manure collection for most of the animals. Here, as elsewhere, when dairy farms modernize, they replace outdated dry lots with more advanced animal housing focused on cow hygiene and comfort to protect the animals, especially in the extreme heat, cold, and wind of Idaho's high-elevation climate.

"In comparison, the proposed CI score of -407 is in stark relief against the -262 average CI score of all out-of-state dairy RNG projects certified by CARB and listed on its website. I am unsure whether this is the result of errata but I noticed a discrepancy for Oak Valley Dairy 1 & 4's life-cycle analysis spreadsheet adjustment for "Facility Specific Fugitive Methane from Upgrading" which states "On the EF table tab for both the Oak Valley 1&4 and Oak Valley 5 calculators, cell E86 was modified with the following formula "=1-((Biogas-to-RNG!V55+Biogas-to-RNG!U55)/Biogas-to-RNG!F55)" to quantify the facility specific fugitive methane from upgrading." while the Fugitive Methane from Upgrading in the List of Site-Specific Inputs states, "=MAX(IFERROR(1-((Biogas-to-RNG!V55+Biogas-toRNG!W55+Biogas-to-RNG!U55)/(Biogas-toRNG!F55)),0),0.02)".

Mr. Salem is correct that there is an error in the "Facility Specific Fugitive Methane" formula initially published in the LCA. The correct formula was, in fact, used in the final submitted and validated CA-GREET 3.0 calculators, but was not copied into the LCA. We have now made the correction to the LCA and provided the updated LCA to CARB. Thus, the calculation of the CI score remains unchanged. The correct formula is shown below.

Calculator Modifications			
Parameter	Original Value	Modification	Cell
EF Table tab			
Fugitive Methane from Upgrading	=2%	=MAX(IFERROR(1-((('Biogas-to-RNG'!V55+'Biogas-to-RNG'!W55+'Biogas-to-RNG'!U55)/('Biogas-to-RNG'!F55)),0),0.02)	E86

In accordance with sections 95488.7 and 95488.8 of the LCFS Regulation, Oak Valley Energy, LLC supplied all the information and supporting documentation necessary to certify the Tier 2 Fuel Pathway application. CARB has reviewed and the third-party verifier has verified the complete and unredacted fuel pathway application and all the necessary supporting documentation.

Sincerely,



Daryl Maas

CEO

Maas Energy Works, LLC