June 19th, 2015

California Air Resources Board
Transportation Fuels Branch, SSD
Fuels Evaluation Section
1001 I Street
Sacramento, CA 95814

Re: Comments on Calculating GHG Reduction Credits for the Displacement of an Open Anaerobic Lagoon with an Anaerobic Digester

Dear CARB Staff,

We are submitting comments regarding the credits assigned to methane emissions from an open anaerobic waste treatment lagoons. The conversion of these operations into anaerobic digestion facilities represents a significant reduction in methane emissions from these operations as methane that was emitted to the atmosphere is captured (with the exception of fugitive emissions). Correctly accounting the credits these operations receive will have an impact on whether or not open anaerobic lagoons will be converted and will divert methane from the atmosphere.

Methane is a potent greenhouse gas that has 25 times higher global warming potential than carbon dioxide, and has been generated from anaerobic waste lagoons and emitted directly to the atmosphere at many cattle operations across the country. Diverting the manure created at these facilities to an anaerobic digester avoids releasing methane emissions to the atmosphere, and reduces the negative impact of these facilities. Therefore, we believe the avoided methane emissions should be counted as a credit towards the biogas produced from anaerobic digesters used to replace these open lagoons.

The current methodology adopted by CARB[1] and Argonne National Laboratory[2] for the analysis of anaerobic digestion-based renewable natural gas (RNG) production assumes that CH_4 generated is flared, and that the resulting CO_2 emissions and fugitive methane are the only credits received by the biogas produced by the digester. This assumed baseline is reasonable because the original destination of these wastes would be a landfill where the collection and flaring of biogas is feasible and has already been implemented.

However, in most current open anaerobic lagoon systems, no biogas is being collected. Furthermore, once the biogas is collected from a covered lagoon and/or a bio-digester, the biogas will likely be sold or used for on-site energy generation. It is highly unlikely that biogas collected would be flared after the capital and operational costs have been put into the facility to capture and use the gas.

[1] CARB, 2009. Detailed California-Modified GREET Pathway for Compressed Natural Gas (CNG) from Dairy Digester Biogas. Version 1.0

[2] Han J.,Mintz M., and Wang M., 2011. Waste-to-Wheel Analysis of Anaerobic-Digestion-Based Renewable Natural Gas Pathways with the GREET Model. ANL/ESD/11-6

In a report published by US EPA in 2010, of the 157 digester projects operating on commercial scale livestock facilities, only 15 (or 9.6%) were flaring the biogas full time[3]. Based on this information, it is at least questionable that the flaring of biogas should be used as a reference case since it does not reflect actual operations at a high percentage of digester projects.

We believe the reference case for calculating the avoided methane emissions should be that all the biogas generated from the open anaerobic lagoon is fugitive to the atmosphere. Consequently, the CH_4 emissions captured by the anaerobic digester should be accounted for as credits in the GREET model.

We would like to encourage you to take this into consideration when finalizing the GREET 2.0 model to allow for reductions based on the methane emissions that are captured and utilized. This will allow for better accounting and encourage reducing ghg emissions from these operations, and from other emerging technologies.

Thank you for the opportunity to submit these comments and to participate in the re-adoption of the LCFS. Please let us know if you need any additional information or have any questions on the above points!

Sincerely,

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[3] US EPA, 2010. U.S. Anaerobic Digester Status Report. US EPA AgStar Program.