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July 12, 2023

California Air Resources Board
1001 I St.
Sacramento, CA 95814

RE: 3Degrees Comments in Response to Proposed New Tier 1 Simplified Calculator Instruction Manual for Biomethane from Anaerobic Digestion of Dairy and Swine Manure (Released June 20, 2023)

Dear Air Resources Board Staff,

Thank you for the opportunity to provide comments in response to the preliminary draft of the Tier 1 Simplified Calculator for Biomethane from Anaerobic Digestion of Dairy and Swine Manure (Tier 1 DSM Calculator) as part of the resources for Low Carbon Fuel Standard (LCFS) life cycle analysis.

3Degrees Group Inc. (3Degrees) is a global climate and clean energy solutions provider and is a strong supporter of the LCFS program. We participate in the program as a designated reporting entity on behalf of a variety of opt-in parties with light-duty electric vehicle (EV) chargers, electric forklifts, hydrogen forklifts, and heavy-duty EV fleets. We are also an active fuel pathway developer and work closely with renewable fuel operators as well as dairy and swine farmers to maximize the role of biofuels in the decarbonization of the transportation sector.

ARB's stated goal, according to slide 63 of the February 22, 2023 public workshop presentation, is to update the Tier 1 DSM Calculator to enhance its functionality and flexibility. 3Degrees supports this objective and offers the following feedback on the proposed calculator and associated instruction manual.

We recommend that ARB clarify that the instruction to select a September system cleanout as a model input is a comprehensive requirement.

In Table C.1., List of Input Fields for Section L1 of the Simplified CI Calculator, the instructions provide that, "for each September, the 'System Emptied in This Month' must be selected" in the L1.(1-6).14 Retention Time and Drainage field. This implies that applicants are required to model an annual cleanout for every pathway using the Tier 1 calculator.

Our understanding is that this requirement is intended to capture an industry average and provide uniformity, and is not suggesting projects indicate September cleanouts in addition to other cleanouts. Rather, the intent of the requirement is to model the baseline system emptied every September *only*, regardless of actual baseline lagoon management practices and whether systems were actually emptied in other months and or partial system cleanouts occurred.

We request that ARB confirm that this field selection should be made by all applicants, regardless of site-specific baselines that might otherwise apply (e.g., multiple interim cleanouts or partial waste removals). In our view, this clarification could be made either as part of the instruction manual or a supplementary communication.

The annual system cleanout selection requirement should be phased-in for new project applications.

3Degrees appreciates ARB's willingness to work with stakeholders in the industry to minimize disruption from updates to the Tier 1 simplified calculator for DSM-derived biomethane. ARB should phase in the requirement to model annual system cleanouts for new pathway submittals by setting a date in the future for compliance to start. We suggest 2025 or later, given typical timelines on project development and their ultimate pathway applications. This will help ensure market certainty, prevent pathway approval delays, and avoid inhibiting the LCFS credit generation potential for projects currently under development.

Many, if not all, digester projects that are set to come online over the next few years have relied on financial analyses that include credit generation estimations based on the existing calculation methodology (i.e. using the actual project baseline within the model). The new presumption of an annual cleanout as an input, while providing an adequate means of averaging cleanouts across different operations, has the potential to materially impact the carbon intensity, and therefore the financial returns, for certain facilities.

ARB should continue to prioritize site-specific values for the fraction of volatile solids sent to anaerobic storage/treatment systems.

ARB's Compliance Offset Protocol: Livestock Projects, adopted November 14, 2014 (Livestock Offset Protocol) states that site-specific data must be used if available, and if it is not, then values from table A.9 can be used (Section 5.1(f)). However, the new instruction manual requires the use of Table A.9 and disallows site-specific data to be used for solid separation characteristics.

Many dairy operations observe separation efficiencies that are greater than or less than the Table A.9 default values, particularly as not all operators use the equipment in the same fashion. For example, the separation efficiency of most equipment will differ when too much manure is routinely pushed through the equipment, or when a screen can be installed with a variety of mesh sizes, or when such systems operate on a periodic basis instead of continuously. Also, when two or more systems indicated in Table A.9 are installed in series, each subsequent equipment will have increasingly lower efficiency because large fibers have already been removed.

These factors, among others, indicate the importance of relying on site-specific data to achieve program accuracy. We recommend that ARB revert this instruction to prioritize or at least allow

the use of site-specific data generated through a rigorous sampling campaign (subject to verification) in place of blanket default values from Table A.9 of the Livestock Offset Protocol.

ARB should consider adding biogas-to-electricity applications of DSM-derived biogas in a standalone calculator.

Currently, ARB asks pathway applicants to revise the Tier 1 DSM Calculator for biogas-to-electricity applications using LCFS Guidance 19-06. If ARB understands the modifications required to support such a pathway, it would benefit project developers to incorporate this into the suite of Tier 1 pathways. Furthermore, requiring reference to a separate document with instructions that differ from the calculator workbook heightens the risk that applicants could inadvertently enter incorrect data or that different applications are certified under different interpretations. As such, a separate Tier 1 calculator is warranted to streamline the use of the biogas-to-electricity pathway and ensure accurate and consistent reporting.

To ensure that all pathway applicants align with the Livestock Offset Protocol and ARB guidance, the net avoided methane input should automatically take into account the total methane produced.

Equation 5.1 of the Livestock Offset Protocol quantifies GHG emissions reductions by subtracting the total project methane emissions from modeled project baseline emissions or metered and destroyed methane. To reflect this amount in the Tier 1 DSM Calculator, we recommend that cell C49 on the Avoided Emissions worksheet ("Net CH_4 Avoided, allocated to RNG") be revised to equate to the minimum of net methane avoided and total methane produced from the digester, i.e., "=MAX((C38,-C40)*C47)." This conservative limiter, we find, should be built-in to the calculator to ensure industry consistency.

3Degrees appreciates this opportunity to provide feedback and we look forward to continuing to work with ARB on the success of the LCFS program. Please reach out with any questions or for further discussion.

Sincerely,

/s/ Helen Kemp

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