May 31, 2023

VIA ELECTRONIC FILING

Cheryl Laskowski
California Air Resources Board
1001 I Street
Sacramento, California 95814

Re: Draft Tier 1 Carbon Intensity Calculator for Biomethane from Anaerobic Digestion of Organic Waste

Dear Dr. Laskowski:

Generate Capital, a Public Benefit Corporation, is a leading sustainable infrastructure company driving the infrastructure revolution. Generate builds, owns, operates, and finances infrastructure solutions for clean energy, water, waste and transportation. Founded in 2014, Generate partners with over 50 technology and project developers and owns and operates more than 2,000 assets globally. Generate offers leading developers and technology pioneers of the infrastructure revolution tailored funding and support needed to build projects. Our Infrastructure-as-a-Service model delivers affordable, reliable and sustainable resources to over 2,000 customers, companies, communities, school districts and universities.

In 2022, Generate Capital launched Generate Upcycle as an independent platform. Generate Upcycle develops, owns, and operates waste-to-value infrastructure across three core segments: food waste, compost, and wastewater. Focused on reducing costs and environmental impact of organic waste, we provide solutions to municipal, industrial, and agricultural customers. Generate Upcycle is the largest owner and operator of food waste recycling facilities in North America.

Generate appreciates the opportunity to submit comments to the California Air Resources Board (CARB) in response to the Draft Tier 1 Carbon Intensity Calculator (Calculator) for Biomethane from Anaerobic Digestion of Organic Waste and associated Instruction Manual (Instructions).

In general, we endorse the comments submitted by The Coalition for Renewable Natural Gas (RNG). Below we highlight some of their key recommendations along with some relevant insights from our many years of experience as one of the nation's largest food waste recycling infrastructure owner/operators, as well as investment professionals in the climate space. We would put greatest emphasis on the necessity of enabling credit true-ups and having a more flexible approach to annual verification for biological processes such as anaerobic digestion.

We would urge CARB to consider that without a full true-up, the food waste AD model will constantly exceed predicted CIs, simply for following best practices. Biological systems can be significantly more difficult to control than mechanical or thermal processes, which can result in under- or over-production relative to Certified CI values. In addition, food waste AD projects generally do not have long-term contracted homogenous feedstock and therefore must procure feedstock from a "wasteshed", usually measured in a mileage radius or a truck driving time radius. Food waste AD projects first need to fill their tanks, and then over time the project can optimize for the highest value feedstocks. The reality is that the mix of feedstock is not consistent from week-to-week, even in an optimized food waste project,

and will always be inconsistent with the Certified CI because it is impossible to predict the exact mix of food waste.

Proper Recognition of the Avoided Landfill Methane Benefits of Organic Waste Diversion is Critical

While there is progress to be made on landfill methane leakage monitoring capabilities, we do know that there is significant variation among landfills. Therefore, it makes sense to develop methods to account for that variation in order to accelerate organic waste diversion from the worst emitters.

Better quantification of the methane benefits of avoided landfilling and incenting such reductions in the LCFS should be a key focus for CARB. Proper recognition of the true methane reduction benefits of such projects must occur quickly, as we remain well behind our organic waste diversion goals. The Little Hoover Commission at its May 2023 meeting adopted a draft report on SB 1383 issues, which finds that:

> *Sadly, California is falling short of its goals. Despite the importance of diverting organic waste, the state not only missed its 2020 target, but sent a million tons of organic waste above the 2014 baseline to landfills. The Little Hoover Commission's review of the bill's implementation found that the state is poised to miss its 2025 target.*

Further, the largest anaerobic digestion facility processing diverted organic waste in California—the Rialto Bioenergy Facility—recently entered bankruptcy proceedings.[1] Given this discouraging backdrop, we strongly recommend CARB carefully address the issues below.

Allowing Landfill-Specific Gas Collection Efficiency is Helpful Flexibility, but Implementation Details Must be Simpler to be Workable

We thank CARB for the new flexibility included in the Draft Calculator allowing site-specific Gas Collection Efficiency (GCE) at the landfill(s) from which the feedstock was diverted to be used. However, the details of determining such landfill-specific values are unworkable as drafted, as they require significant analysis steps by the pathway applicant that are not feasible.

Per CARB's Draft Instructions released with the Calculator, when proposing a site-specific GCE, the quantity of methane generated must be calculated using information about the gas collected by the landfill and the quantity of fugitive methane emissions measured over the landfill surface for a period of no less than one year. The owners and operators of AD facilities simply have no way of knowing the quantity of gas collected or the amount of fugitive methane emissions measured from a landfill that they do not control.

Applicants seeking to use a site-specific GCE must also demonstrate from which landfill(s) the feedstock was diverted using historic bills of lading or waste collection routes. Again, this information is unlikely to be available to the AD facilities.

Further, CARB's instructions state that approved landfill-specific gas collection efficiency values will not be confidential and can be utilized by any LCFS pathway holder that can demonstrate diversion from the same landfill. CARB will likely publish all approved landfill-specific collection efficiency values. This means that even if an AD facility was able to work out a commercial arrangement with a landfill to

[1] https://investors.anaergia.com/media-center/news/news-details/2023/Anaergia-Announces-Commencement-of-Restructuring-Proceedings-by-Rialto-Bioenergy-Facility-LLC/default.aspx

measure site-specific GCE it would not produce any commercial advantage for the AD facility, as all competitors would have access to the same information once CARB released it.

Given that there is no first-mover advantage of developing such landfill-specific GCEs and the commercial challenges of gathering this information as an AD facility, we recommend that CARB instead directly develop and publish best estimates of individual landfill GCE and let applicants use these values, as they become available, in place of the statewide default value.

The Calculator Should Include Default Co-Product Credits for the Benefits of Displaced Fertilizer

The development of AD facilities to process diverted organics increases opportunities to displace the use of emission-intensive conventional fertilizer with digestate-derived fertilizer products. We recommend that the Draft Calculator be updated to recognize the nitrogen, phosphorus, and potassium (NPK) benefits of the digestate material.

Co-product credits for digestate/compost has previously been granted by CARB based on the amount of conventional fertilizer displaced.[2] We recommend CARB reestablish this important co-product credit in the Tier 1 Calculator.

The Draft Calculator Errs in Increasing Complexity in Some Areas

Overall, we caution CARB against areas of added complexity that are not aligned with the intent of a simplified tool. For example, the Draft Calculator requires moisture measuring of feedstock, but the supporting documents do not describe, in sufficient detail, what measurement methods would be required. The requirement for moisture measuring also complicates how residuals should be accounted for, instead of allowing a simple calculation of net feedstock processed. Such complexity diminishes the value of a Tier 1 application and—as is current practice today—may motivate many applicants to select a Tier 2 calculation.

A Credit True-up Remains Necessary to Properly Recognize the True Environmental Performance of All Biomethane Pathways

True-up crediting should be offered to improve clean fuel economics and help the program correctly account for the full GHG benefits of RNG production. AD facilities are biological systems in which yields and CI can be unexpectedly impacted by issues outside of the control of the facility operator. Looking backward at actual CI performance is much easier than forecasting possible future CI performance for these systems. We continue to support a full true up to verified actual CI performance to recognize the actual GHG benefits of these facilities.[3]

As stated above, we believe that without a full true-up the food waste AD model will constantly exceed predicted CIs, simply for following best practices. Firstly, biological systems can be significantly more difficult to control than mechanical or thermal processes, which can result in under- or over-production relative to Certified CI values. Secondly, food waste AD projects generally do not have long-term contracted homogenous feedstock and therefore must procure feedstock from a "wasteshed", usually measured in a mileage radius or a truck driving time radius. Food waste AD projects first need to fill their tanks, and then over time the project can optimize for the highest value feedstocks. The reality is

[2] https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/comments/tier2/t2n-1248_summary.pdf

[3] See our comment letters from prior workshops dated January 7, 2022, August 8, 2022, and September 18, 2022.

that the mix of feedstock is not consistent from week-to-week, even in an optimized food waste project, and will always be inconsistent with the Certified CI because it is impossible to predict the exact mix of food waste.

All Biomethane Pathways Should Include the Option to Model Power Generation Matched with Electric Vehicle Use as a Finished Fuel

We continue to recommend that all Tier 1 calculators allow electricity generation as a finished fuel to facilitate matching with electric vehicle (EV) use. Alternatively, CARB could develop a Tier 1 calculator that takes a RNG pathway as an input and converts it to electricity for use in EVs. This would create a strong analog with the approach taken for hydrogen in the Draft Hydrogen Simplified Tier 1 Calculator.

Conclusion

Generate Capital and Generate Upcycle appreciate the opportunity for continued engagement on these topics. Providing strong and streamlined CI calculators improves the investment certainty for RNG projects. If CARB provides clarity through Tier 1 calculators that work well for RNG applications, the production of renewable gas will help to reduce methane emissions, improve organic waste management, and decarbonize California's transportation sector—or any other sector that CARB deems appropriate.

These simplified calculators also provide critical leadership that will allow other jurisdictions to follow California's example and adopt LCFS-style programs. We thank CARB for your continued work toward this end and we look forward to helping the state achieve its important waste reduction and climate mitigation goals.

Sincerely,

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