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Cheryl Laskowski, Ph.D.
California Air Resources Board (CARB)
1001 I Street
Sacramento, CA 95814

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Subject: Comments on Proposed LCFS Program Changes Presented at the November 9, 2022 Public Workshop

Dear Dr. Laskowski:

Anaergia Services LLC (Anaergia) is a global leader in diverting organics from landfill-bound waste and converting them into renewable fuel and soil amendments. Based in Carlsbad, CA, Anaergia is actively deploying anaerobic digesters in California and converting landfill-diverted organic waste into carbon-negative fuels. Our Rialto Bioenergy Facility (RBF) – the largest landfill-diverted-organics-to-renewable-fuel facility in America – can process over 175,000 tons per year of diverted organics and produce 1,000,000 MMBtu/yr of renewable natural gas (RNG). After 4 years of planning and construction with over \$180M invested, RBF is now operational and has created at least 50 permanent jobs, hundreds of construction and service jobs, and over 500,000 hours of construction work. These facilities are part of the 160 new projects that CalRecycle estimates are needed to meet California’s statutory organic waste landfill diversion goals established under SB 1383 (Lara, Chapter 395, Statutes of 2016), and which are foundational for achieving carbon neutrality by no later than 2045.

Anaergia submits this letter in response to proposed changes to the LCFS program presented at the November 9, 2022 public workshop. Anaergia agrees that changes to the LCFS program are necessary to improve program effectiveness and achieve the State’s ambitious climate change and energy goals, including those codified under SB 1383. In general, the LCFS should be structured to align with these policies, including the finalized 2022 climate change Scoping Plan.

Biomethane, including biomethane from landfill-diverted organic waste, is a critical tool in meeting the State’s targets, and it is essential that biomethane production within the State is not only supported but increased to achieve the necessary methane and carbon dioxide reductions most rapidly and most cost-effectively. As such, Anaergia supports only those proposed changes which incentivize the reduction of (short-lived climate pollutant) SLCP through biomethane from organic waste in California and offers additional recommendations to maximize methane capture in the State. In particular, to we urge CARB to:

- Establish increased carbon intensity reduction targets for 2030, at least in line with those identified in Alternative C
- Maintain crediting for avoided methane
- Establish a mechanism to improve accuracy of avoided methane crediting
- Adopt deliverability requirements for eligible biomethane
- Expand the LCFS to non-transportation sectors (i.e., industrial sector), especially gas end uses, to support State goals to utilize biomethane most effectively to achieve carbon neutrality

Establish increased carbon intensity reduction targets for 2030, at least in line with Alternative C

In each alternative presented at the workshop, carbon intensity reductions in 2030 falls short of the statewide 40% greenhouse gas reduction target codified in SB 32 (Pavley, Chapter 249, Statutes of 2016). They fall even shorter of the increased ambition reflected in the Scoping Plan of a 48% reduction by 2030, and shorter still of the 55% reduction goal proposed by the Governor and in two separate pieces of legislation to be considered in the new year. As California's largest source of emissions, the transportation sector must play a leading role in achieving the State's climate change and air quality objectives, and therefore, carbon intensity targets under the LCFS should be no less than statewide greenhouse gas reduction targets. Adopting higher LCFS carbon intensity reduction targets will not only drive progress towards Statewide climate goals; this change will also incentivize near-term achievement of emissions reductions, especially in the transportation sector and communities where they are needed most, providing additional runway to mitigate and reverse climate change. At a minimum, Alternative C's 35% reduction target for 2030 should be adopted to bring LCFS targets more in line with SB 32. However, Anaergia encourages CARB to consider additional scenarios targeting 40-55% reductions by 2030 to be consistent with SB 32, the Scoping Plan and legislative proposals.

Maintain crediting for avoided methane

Anaergia urges the LCFS to maintain consistency with other California climate programs and with the LCFS itself. Of critical importance maintaining the lifecycle approach to emissions accounting for biomethane, which is currently accurately employed for all other eligible LCFS fuels. A singular and premature change in accounting applied only to biomethane contradicts the program's design and objectives, the established GREET model, accepted science, and California's progress towards SLCP emissions reductions goals.

There are numerous avenues to achieve SB 1383 compliance, not all of which are equal from an emissions perspective. A particularly important tool is anaerobic digestion (AD) of landfill-diverted organics to generate biomethane, which results in greater methane emissions reductions than composting organic waste, while also generating RNG to reduce fossil fuel use and carbon dioxide emissions. On balance, with the increased climate benefit of AD, these complex facilities are more expensive to construct and operate. Investment and sustainable operation of organic waste digesters relies on adequate revenue generation through the project lifecycle, primarily through biomethane sales. With project lifecycles of 20 years or more, eliminating avoided methane crediting – even as soon as 2040 – negatively impacts the viability and SLCP reduction potential of projects in operation and development today.

The full lifecycle benefits of AD must be accounted for via appropriate methane crediting and biomethane valuation to promote organic waste digesters and achieve SLCP reductions goals. Currently, it is clear that biomethane from organic waste does **not** have a market value reflective of its real-life climate benefits, nor sufficient to garner the needed investment: CalRecycle estimates over 100 such facilities are needed in California to accommodate the 20 million tons per year of organics that must be diverted from landfill per SB1383; however, RBF is the only such food waste digester currently operating in the State. The premature and arbitrary elimination of biomethane crediting will further disincentivize development of this effective methane reduction strategy in two ways: first, by devaluing biomethane and negatively impacting project economics; and second, by creating uncertainty in the market and thereby reducing investor confidence and financeability. In short, changing the approach to avoided methane crediting in the LCFS will jeopardize the State's ability to meet its SLCP reduction goals and to develop additional biomethane supplies necessary to achieve carbon neutrality.

Maintaining credits for avoided methane emissions is absolutely essential to the continued operations of existing facilities generating biomethane from landfill-diverted organics, the development of and investment in additional similar facilities, and ultimately the achievement of SB 1383, SB 32, and AB 1279 (Muratsuchi, Chapter 337, Statutes of 2022). Eliminating avoided methane credits will irreparably damage the industries sorely needed to achieve the State's highest priority climate goals.

Establish mechanism to improve accuracy of avoided methane crediting

Beyond maintaining avoided methane crediting, **the GREET model must be updated to correctly quantify the carbon intensity of biomethane from landfill-diverted organics**. Currently, GREET assumes that 75% of methane emissions from organics in landfill is captured, based on a stipulated assumption from a 1997 US EPA study. This value, which the EPA study itself identifies as a placeholder value in the absence of more data, has been repeatedly shown to be a severe underestimate by more recent work in California, the US, and worldwide. Studies by NASA JPL and even CARB indicate that landfills emit significantly more methane than previously assumed or reflected in the GREET model. Continued initiatives by CARB and other agencies shows the ever-improving nature of landfill methane emissions modeling. CARB must accordingly implement a means to regularly update the GREET model (specifically, the landfill capture rate) to accurately reflect current and established science. Such a mechanism would acknowledge and value both the strides made in the field since 1997 as well as the ongoing work to be done.

Neglecting to update the GREET landfill capture rate will result in the continued undervaluation of biomethane from organic waste and severely dampened investment in critical climate mitigating AD infrastructure such as RBF. Avoided methane crediting is a powerful tool as a market signal to encourage near-term investment and advance California climate goals; however, its efficacy thoroughly depends on its accuracy. Rather than phase it out, CARB should always strive to reflect the latest science and most accurate accounting in the LCFS. Enabling appropriate methane crediting with a regularly updated landfill capture rate will incentivize near-term investment in food waste diversion infrastructure, establish a strong pipeline of cost-effective, carbon-negative biomethane generation to support both transportation and non-transportation sectors under LCFS.

Adopt deliverability requirement for eligible fuels under LCFS

As Californians, we are supportive of encouraging development of biomethane production facilities in the state that employ Californians and support greenhouse gas reductions locally. In general, developing, building, and permitting facilities in California takes longer and costs more than in other States. In contrast, out-of-state biomethane producers do not have to comply with California's pipeline injection standards and benefit from much lower interconnection costs. Anaergia is supportive of implementing a requirement for all LCFS fuels to be delivered to California pipelines, as this would help to counteract the advantages held by out-of-state producers, improve competitiveness of California biomethane, and generate more benefits for the residents and economies of California. Further, this policy would ensure that the biomethane is indeed used within California.

This change would better align the LCFS with other State programs which have deliverability requirements, such as SB 1440, and promote their success. Incentivizing development of in-State biomethane sources will increase supply so that these policies are in fact achievable and capable of making the intended impact.

Expand LCFS to non-transportation sectors (i.e., industrial sector)

The transportation sector represents a fraction of fuel end use in California and stands to be further reduced through the implementation of advanced clean fleets and electrification initiatives. In contrast, fuel demand in the industrial sector represents about 30 times that of the transportation sector and is less readily electrified. Meanwhile, in the Scoping Plan, Advanced Clean Fleets rulemaking and other forums, CARB has made clear that it wants to increase the availability of RNG in the industrial sector and other non-transportation end uses. However, unless and until there is equivalent policy support for RNG in the industrial sector, the LCFS will continue to drive RNG into the transportation fuel market. The most straight forward and equitable solution to this challenge is to expand the LCFS program to include non-transportation natural gas end-use sectors, such as the industrial sector.

Decarbonization of this much larger market sector has much greater potential to move the needle from a SLCP, biomethane, and carbon dioxide perspective. We also note that, while the Renewable Gas Standard adopted under SB 1440 opens up large new markets, prices in that market are likely to primarily support the lowest cost biomethane pathways, primarily from landfills. Between inaccurate accounting for landfill emissions in the LCFS and price thresholds established under the Renewable Gas Standard, biomethane from landfill-diverted organics will struggle to compete in the market, and the State will struggle to meet its carbon reduction and SLCP goals.

Conclusion

Climate change is a grave threat to our environment and our economy. California has set an ambitious climate strategy and laws to reduce greenhouse gas emissions. Implementing the above recommendations can support the development of robust supply of in-state, carbon-negative biomethane, helping to achieve the State's targeted reductions in SLCP emissions and encouraging in-state economic development. In particular, maintaining consistency between LCFS and other California climate policy will enhance inter-program synergies and serve to better support achievement of climate goals across the board. We deeply appreciate your leadership in mitigating climate change and hope that our comments will help to make these excellent programs work even better in the future.

Respectfully,



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