

Ms. Rajinder Sahota, Deputy Director
California Air Resources Board
1001 I Street
Sacramento, CA 95814

September 22, 2021

Subject: Comments on Short-Lived Climate Pollutants in the 2022 Climate Change Scoping Plan

Dear Ms. Sahota,

Anaergia Services LLC (Anaergia) is a global leader in diverting organics from landfill-bound waste and converting them into renewable energy and soil amendments. Based in Carlsbad, CA, Anaergia is actively expanding California's capacity to divert organics from landfill into carbon-negative fuels by developing multiple facilities that are capable of processing over 300,000 tons per year of diverted organics. This is expected to produce approximately 2,000,000 MMBtu/year of Renewable Natural Gas (RNG) with negative Carbon Intensity (CI) scores. Our Rialto Bioenergy Facility (RBF) – the largest landfill diverted organics to renewable fuel facility in California – can process over 175,000 tons per year of diverted organics and produce 1,000,000 MMBtu/yr of RNG. After 4 years of planning and construction with over \$180M invested, RBF is now operational and has created at least 30 jobs along with 500,000 hours of construction work.

Anaergia submits these comments on the Short-Lived Climate Pollutant (SLCP) presentations on September 8, 2021. Anaergia strongly supports the focus on SLCP reductions as the most significant opportunity to reduce climate change in the near-term. As CARB staff noted during the workshop, not enough is being done to reduce SLCP emissions in California and there is an urgent need to accelerate efforts to reduce SLCPs. In particular, we encourage the California Air Resources Board (CARB) to:

- Prioritize reduction of SLCP emissions
- Update assumed 75% methane landfill capture rate in Tier 1 Low-Carbon Fuel Standard (LCFS) calculator to reflect latest methane fugitive emissions studies at landfills
- Implement RNG procurement policies for gas utilities to decarbonize the gas system
- Phase out diesel use to reduce SLCP emissions

Utmost Priority to Focus on Short-Lived Climate Pollutants emissions reductions

Anaergia encourages CARB to prioritize the reduction of SLCP in its 2022 Climate Change Scoping Plan. SLCP are potent climate forces with significantly larger potentials to warm the atmosphere. As climate change continues to happen more quickly and destructively, SLCP reductions have been identified a key “lever to bend the warming curve.”¹ They explicitly recommend the need to reduce “methane emissions by half and decrease methane emissions such as leaks from food and other landfilled organic waste,” and project doing so can cut the rate of warming over the next 2 to 3 decades by half.²

¹ Kammen, Ramanathan, Matlock, et al, “*Accelerating the Timeline for Climate Action in California*,” submitted to Environmental Research Letters, 2021. Available at: <https://arxiv.org/abs/2103.07801> [arxiv.org].

² Id. at page 4.

In 2017, CARB began implementing a SLCP Reduction Strategy to reduce methane emissions by 40%. As part of the 2022 Scoping Plan, **it is imperative that CARB prioritizes reduction of SLCP emissions** and implement a more comprehensive SLCP Reduction Strategy to reduce the state's significant SLCP emissions.

Develop strategies to reduce methane emissions from the waste sector

In CARB's SLCP workshop, CARB estimated that 39.8 MMTCO_{2e} of methane were emitted in 2018. Of this, CARB determined that 21% of statewide methane emissions were attributed to the decomposition of organic waste in landfills. However, a 2019 study by the NASA JPL estimates that landfills' contribution to the state's methane emissions is double current estimates – approximately 41% of all methane point source emissions in California.³

The updated estimate was facilitated by the use of specialized airborne imaging spectrometers attached to drones, which could rapidly map methane plumes.⁴ Deploying this remote sensing technology significantly improved the determination of methane emissions associated with landfills. It is critical that CARB utilize the improved monitoring techniques to develop and implement policies that encourage the diversion of organics from landfill and prevent continued methane emissions from the largest point source SLCP emitters in the state of California.

One possible area to account for GHG emissions at landfills involves updating CARB's Tier 1 LCFS calculator. The calculator currently assumes that 75% of landfill methane from food scraps is captured. However, as the NASA/JPL study indicates, over double the amount of methane is being emitted from landfills than what CARB estimated in its 2018 study. **We strongly urge CARB to update its 75% methane landfill capture rate to reflect the latest monitoring data.** Doing so will more accurately reflect the avoided carbon emissions associated from RNG produced at landfill diverted organics anaerobic digestion facilities. Having a more accurate CI score for the produced RNG will facilitate the financing of such facilities and accelerate the deployment for additional anaerobic digesters throughout the state that can act as outlets for landfill-diverted organics. Ultimately, this simple policy update to reflect the latest landfill monitoring techniques can have an outsized impact on minimizing fugitive emissions of SLCP at landfills.

Implement RNG procurement policies for gas utilities to decarbonize the gas system

We strongly urge CARB to translate concepts from the LCFS program into policies that promote the decarbonization of the state's gas system. Excitingly, the LCFS program is working. During Sam Wade's presentation at the SLCP workshop, he indicated that the LCFS achieved a 98% RNG blend rate in transportation natural gas vehicles in Q1 2021. As such, RNG has effectively displaced fossil fuel gas in the transportation sector.

CARB should develop policies that promote the creation and utilization of RNG beyond the transportation and power sectors, particularly the largest gas demand sectors including residential, commercial, and industrial. During the SLCP workshop, Karin Sung presented on the CPUC staff's recommendation of a mandatory biomethane procurement program for Investor-Owned Utilities (IOUs) to procure on behalf of their core customers, pursuant to Senate Bill (SB) 1440. We fully support the staff's recommendation and

³ Duren, R.M., Thorpe, A.K., Foster, K.T. *et al.* California's methane super-emitters. *Nature* **575**, 180–184 (2019). <https://doi.org/10.1038/s41586-019-1720-3>

⁴ *Id.*

encourage CARB to develop policies that promote decarbonization for IOUs' non-core customers. RNG procurement by utilities is a growing trend in North America that can be emulated in California. Most notably, the Oregon PUC implemented an RNG procurement process in 2020 through Oregon SB 98 (2019).

When crafting such policies, it is important to maintain the LCFS' key metric of "mass of CO₂e/MJ of gas delivered." Incorporating this metric into lifecycle analyses will encourage lower energy intensive practices, including more energy efficient RNG production methods, minimization of distance of gas transportation, and incorporation of methane leakage rates as part of scoring. Such policies will only continue to encourage the diversion of organics from landfill and reduce the state's SLCP emissions.

Phase out diesel use to reduce SLCP emissions

The use of diesel as a fuel source results in significant source of SLCP emissions, namely black carbon, as well as other harmful air pollutants and smog-forming pollution.⁵ The most effective method to reduce SLCP emissions in the transportation sector, in the immediate term, is to replace diesel with NZEV using ultra low NOx engines. Such vehicles would then be able to run on carbon negative RNG derived from landfill-diverted organic waste. Doing so will reduce black carbon emissions AND avoid methane emissions from organic waste that would otherwise degrade in landfills. Given the importance of reducing SLCP emissions, we strongly recommend that CARB **prioritize elimination of diesel-powered vehicles and power medium- and heavy-duty trucks with biomethane from organic waste.**

CARB should also develop policies to reduce the use of diesel in the electricity sector, where it is common to find the use of diesel backup generators to ensure energy reliability. Renewable gas, including biogas and hydrogen from organic waste, can offer the same energy reliability with a far lower carbon intensive score.

Thank you for your consideration of these comments.

Respectfully,



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⁵ Presentation of Dr. V. Ramanathan, UC San Diego and Scripps Institute, Presentation June 24, 2021 at MoveLA Symposium on Short-Lived Climate Pollutant Reductions. Dr. Ramanathan calls for eliminating "soot" and eliminating diesel powered vehicles.