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

June 23, 2022

Subject: Comments on the 2022 Draft Climate Change Scoping Plan

Dear Ms. Sahota,

Anaergia Services, LLC (Anaergia) submits these comments on the *Draft 2022 Climate Change Scoping Plan* (Scoping Plan). 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 employing the largest installed anaerobic digestion capacity facility in California converting landfill diverted organic waste into carbon-negative fuels. Our Rialto Bioenergy Facility (RBF) – the largest landfill diverted organics to renewable facility in California – can process over 175,000 tons per year of diverted organics and produce 1,000,000 MMBtu/yr of renewable natural gas (RNG). After four (4) years of planning and construction with over $180M invested, RBF has been operating since Fall 2020 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 facilities CalRecycle estimates are needed to meet California's organic waste landfill diversion goals stated under SB1383 and which are foundational for achieving California's Short-Lived Climate Pollutant (SLCP) and carbon neutrality targets.

Anaergia submits this letter as CARB continues developing the 2022 Scoping Plan Update to achieve carbon neutrality by 2045. Anaergia appreciates CARB's ambitious and aggressive approach towards decarbonizing every sector of the economy, while striving to achieve a more equitable and sustainable future. Anaergia strongly supports a continued focus on SLCP reductions as the most significant opportunity to reduce climate change in the near-term. According to CARB's Scoping Plan, SLCP reductions in California have stagnated and there is an urgent need to accelerate efforts to reduce SLCP. In particular, we would like to highlight the following items regarding the Scoping Plan:

- Support Alternative 3 as Proposed Scenario
- Maintain the focus on methane and SLCP
- Develop strategies to reduce methane emissions from landfills
- Update landfill capture rate
- Encourage Public-Private-Partnerships (P3)
- Implement RNG market strategies to decarbonize other sectors

<u>Draft Scoping Plan Correctly Proposes Alternative 3 as the Proposed Scenario</u>

The Draft Scoping Plan correctly proposes Alternative 3 as the Proposed Scenario since it provides the greatest benefits and is **most likely to achieve the requirements of SB1383 and SB32**. Anaergia supports Alternative 3 as it will "deploy a broad portfolio of existing and emerging fossil fuel alternatives and clean technologies.[1]"

[1] *Draft 2022 Climate Change Scoping Plan Update*, released May 10, 2022 (pg. 41).

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The complexity of decarbonizing while maintaining energy and transportation reliability, reducing air and water pollution, and maintaining our economy, presents an unprecedented challenge. It is essential in managing such a complex transition to include a diverse portfolio of solutions to maintain reliability, be prepared for unforeseen events and consequences, and provide redundancy. The Draft Plan correctly notes that the "challenge before us requires us to keep all tools on the table.[2]"

Maintain Focus on Methane and Short-Lived Climate Pollutants

Anaergia strongly supports CARB's maintained focus on methane and SLCP. It is becoming increasingly clear that there is an urgent need to reduce emissions of SLCP such as methane to help mitigate the impacts of climate change. SLCP are potent climate forces with significantly greater potentials to warm the atmosphere. In its 2021 report, the Intergovernmental Panel on Climate Change demanded that nations make much more aggressive reductions in methane emissions. In response, US President Joe Biden and European Commission President Ursula von der Leyen issued a statement identifying the reduction of methane emissions as the "single most effective strategy to reduce global warming in the near term[3]" and established a consortium of 90 countries to reduce methane emissions by 30% from 2020 levels.

As California continues to face the effects of increasingly destructive climate change, a consortium of scientists has identified the reduction of SLCP as a key "lever to bend the warming curve[4]" in the state. 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 that doing so can cut the rate of warming over the next two to three decades by half.[5]

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 continue implementing the SLCP Reduction Strategy, adopted in 2017, and reduce methane emissions by 40% by 2030.

Develop strategies to reduce methane emissions from landfills

It is urgent that CARB implement more aggressive actions to ensure California meet SB1383 emission reduction targets. Unfortunately, significant amounts of methane continue to be emitted into the atmosphere, preventing the state from achieving its SB1383 targets. The Scoping Plan explains that continued methane emissions hamper SB1383 targets, and that the "state is expected to achieve roughly half[6]" of its emissions goals by 2030.

CARB estimates that in 2018 alone, 39.8 $MMTCO_2e$ of methane were emitted. 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 NASA JPL estimates that the contribution of landfills to the state's methane

[2] Id. (pg. vii)
[3] https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/02/fact-sheet-president-biden-tackles-methane-emissions-spurs-innovations-and-supports-sustainable-agriculture-to-build-a-clean-energy-economy-and-create-jobs/
[4] Kammen, Ramanthan, 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].
[5] Id (pg. 4)
[6] *Draft 2022 Climate Change Scoping Plan Update*, released May 10, 2022 (pg. 179)

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emissions is double current estimates: landfills are responsible for approximately 41% of all methane point source emissions in California.[7] A similar conclusion is supported by a report published by the Maryland Department of Energy, which found that emissions from landfills were "four times greater" than previous estimates and were the leading source of methane emissions (37%) in the state.[8]

Thus, methane emissions from landfill remain a significant contributor to emissions reduction shortfalls, while presenting a major opportunity to achieve reduction targets. It is critical that more aggressive strategies are implemented to reduce methane emissions from landfills to achieve SB1383-mandated goals. Excitingly, the Scoping Plan identifies "**achieving 75% organic waste disposal reduction target of SB1383, and maintaining that level of disposal in subsequent years, would bring annual landfill emissions in 2030 to just below the 2013 baseline level**.[9]" Anaergia strongly encourages CARB to collaborate closely with CalRecycle to implement policies that encourage and accurately account for the diversion of organics from landfill.

Update landfill capture rate

One recommended area to reduced emissions from landfills involves updating CARB's Tier 1 LCFS calculator to more effectively incentivize organics diversion. The calculator currently assumes that 75% of methane emitted from landfilled food scraps is captured. However, as the NASA JPL study indicates, landfills emit more than twice the methane estimated by CARB in its 2018 study. **We strongly urge CARB to update its 75% methane landfill capture assumption in the LCFS Tier 1 Calculator to reflect the latest monitoring data.** In fact, "relying on the most up to date science[10]" is highlighted in the Scoping Plan as a key strategy to achieving carbon neutrality. We encourage CARB to extend this approach towards the assumed landfill capture rate.

Using the latest scientifically-based, site-specific landfill gas emissions measurement data, **we have determined a more accurate landfill capture efficiency to be 34%**. This capture rate was established by (1) accounting for methane emissions measured directly from point-sources at landfills within California, and (2) estimating total methane produced in landfills utilizing ARB's landfill GHG Inventory Waste-In-Place (WIP) methodology. A separate brief was submitted as a written comment, explaining our methodology.

Updating the fugitive methane emission factor will more accurately reflect the avoided carbon emissions associated with RNG produced via anaerobic digestion of landfill-diverted organics. Improved CI score accuracy for RNG from landfill-diverted organics will facilitate the financing of associated production facilities and accelerate the deployment for additional anaerobic digesters throughout the state that can act as outlets for landfill-diverted organics. This in turn can advance state achievement of its own goals to reduce SLCP emissions, per SB1383. 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.

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[7] 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

[8] https://environmentalintegrity.org/wp-content/uploads/2021/06/MD-Landfill-Methane-Report-6.9.2021-unembargoed_with-Attachments.pdf

[9] *Draft 2022 Climate Change Scoping Plan Update*, released May 10, 2022 (pg. 188)

[10] Id. (pg. i)

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Encourage Public-Private-Partnerships

We strongly agree with the Scoping Plan's assertion that public-private-partnerships can act as a mechanism to advance our collective climate goals. Anaergia has deployed over $300 million of private investment in California to support organics recycling infrastructure. We fully agree that "public sector dollars, accompanied by strong and steady policy signals, must be a catalyst for deeper and broader investments by the private sector in both reducing emissions and building the resilience of our communities.[11]"

We strongly agree with CARB's recommendations for achieving success of SLCP emissions reductions. Anaerobic digestion and co-digestion of organics at wastewater treatment plants (WWTPs) offer viable alternatives to landfill disposal but require significant build out of infrastructure to meet the stated targets. In fact, the State Water Resources Control Board estimates that 2.4 million tons of digester capacity are available for organics recycling, with targeted investment to effectively access this capacity. Anaergia strongly encourages CARB to provide the "sufficient incentives or funding for collection, receiving, and processing[12]" to invest in infrastructure that can reduce SLCP emissions.

In fact, Anaergia entered into a public-private-partnership with the Victor Valley Wastewater Reclamation Authority (VVWRA) and fully financed all upgrades and retrofits at their wastewater facility that enabled VVWRA to receive and co-digest landfill diverted organics and sludge. Anaergia leveraged its experience developing anaerobic digestion infrastructure to enable VVWRA to become the first WWTP to co-digest organics with sludge for injection of RNG into the gas utility pipeline. VVWRA successfully started injecting RNG into the Southwest Gas grid in early 2022 and is capable of injecting of 300,000 MMBtu annually.

Implement RNG market strategies to decarbonize other sectors

We appreciate CARB's acknowledgment of RNG as a viable solution to advance decarbonization across multiple sectors. We agree that RNG offers tremendous value to a range of sectors identified in the Scoping Plan: Low Carbon Fuel for Transportation, Low Carbon Fuel for Buildings and Industry, Clean Electricity Grid, Sustainable Manufacturing and Buildings. As the Scoping Plan correctly points out, it is critical for CARB to "identify and address market and implementation barriers[13]" to accelerate the transition away from fossil fuels. **We strongly encourage CARB to translate concepts from the LCFS program into policies that promote the decarbonization of these sectors**. We encourage to CARB to engage in continued dialogue to correctly identify the market signals necessary to enable the deployment of carbon negative RNG to help the State reduce its GHG emissions.

Climate change is a grave threat to our economy, environment, and society. California has set an ambitious climate reduction strategy to reduce greenhouse gas emissions. We appreciate CARB's leadership to establish an ambitious plan towards achieving climate neutrality by 2045. We look forward to collaborating

[11] Id. (pg. 17)
[12] Id. (pg. 188)
[13] Id. (pg. vii)

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with CARB as it furthers the Scoping Plan to ensure we work together to match this plan's ambitions with the requisite action.

Thank you for your consideration of these comments.

Respectfully,

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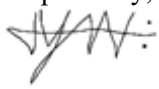

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