



The Honorable Liane Randolph
Chair, California Air Resources Board
1001 I Street
Sacramento, CA 95814

December 21, 2022

RE: Potential Changes to the Low Carbon Fuel Standard

Dear Chair Randolph and Members of the Board:

Clean Energy, an original stakeholder and strong supporter of California's Low Carbon Fuel Standard (LCFS), is pleased to submit the following comments regarding potential changes presented by the California Air Resources Board (CARB) staff to the LCFS program. Overall, Clean Energy strongly supports CARB staff's recommendations that most aggressively accelerate the decarbonization of California's transportation fuels in the near term but would caution any concept that would potentially jeopardize the state's ability to achieve significant carbon intensity values or reduce Short-lived Climate Pollutants (SLCP).

THESE COMMENTS ARE COMBINED WITH PREVIOUSLY SUBMITTED COMMENTS

Please consider the following current comments below in conjunction with our previous comment letters submitted on August 8 and September 19. These previous letters reflect feedback to concurrent issues brought forward by CARB staff in previous LCFS workshops. The previous topics included, but are not limited to, policy and programmatic issues that recommend:

- Maintain methane avoidance crediting to preserve negative carbon intensity (CI) values required to meet carbon neutrality goals;
- Enable carbon intensity true-up;
- Improve pathway/verification and annual fuel pathway report timing;
- Allow the use of locally procured renewable energy as allowed in zero-carbon intensity pathway applications; and,
- Support for the creation of a Tier 1 calculator for Hydrogen.

Our current comments responding to key questions from the November 9, 2022, workshop are below.

SUPPORT CONSIDERATION OF STEEPER CARBON INTENSITY TARGET

Clean Energy is supportive of the proposed 35% carbon intensity target (Alternative C) but strongly encourages CARB to consider step-down adjustments pre-2030 to drive LCFS related production

earlier. This is urgently needed to achieve the 2045 carbon neutrality goal. The transportation sector is the largest emitter in California of carbon except for wildfires. The LCFS must incentivize the adoption and use of the immediately available lowest carbon transportation fuels. Heavy-duty ZEVs will not be available on a widescale basis before at least 2030 and diesel cannot be the default fuel by heavy-duty trucks for the next decade.

A higher target before 2030 will accelerate the carbon emission reductions leading to 2045 and bring increased climate and clean air improvements and support higher valuations of LCFS credit valuations which is critical for continued growth of LCFS production. In the spirit of collaboration, a study is being developed that we hope will be helpful to show a steeper target is indeed achievable. Alternative C in our view should be the minimum target that should be adopted and is the foundation for our rationale below that California should incentivize the renewable natural gas (RNG) production industry as much as possible to help achieve our emissions reduction goals.

AVOIDED METHANE EMISSIONS CREDITING IS KEY TO MEETING SB 1383 GOALS

Clean Energy understands CARB's rationale and interest to increase in-state SLCP emission reductions to help meet statutory goals, including carbon neutrality by no later than 2045. Clean Energy would like to be considered and desires to be a key partner to help meet these goals.

The LCFS program is perhaps one of, if not the most, impactful policy tools impacting the decarbonization of transportation today. That is why CARB must maintain the focus on lifecycle CI which includes the crediting of avoided methane emissions. Avoided methane credits stimulate project development and increase biomethane production for transportation, thus displacing the use of diesel fuel in trucks. Installing an anaerobic digester is a multimillion-dollar proposition that is made feasible only through a return-on-investment calculation that depends heavily on LCFS credits. Without deep negative CI values, installing a digester becomes a financial risk rather than a smart investment. And without a way to attract project capital, California will not add the 200+ projects needed to meet 2030 methane reduction goals for the state. We join multiple stakeholders across multiple industries that oppose the elimination of avoided methane crediting.

We cannot emphasize enough the point that removing credits for avoided methane emissions would have a disastrous effect on current and future projects and the ability of California to meet climate and SLCP reduction targets or requirements. Dairies are essential to avoided methane emissions, as confirmed in CARB's first denial of the Petition¹ and the second denial of the Petition for Reconsideration.² The latter denial, specifically states, in part:

- "California needs methane reductions from the dairy and livestock sector now, and the LCFS provisions that petitioners propose to amend support achievement of those reductions."

¹ CARB, "Petition for Rulemaking to Exclude All Fuels Derived from Biomethane for Dairy and Swine Manure from the Low Carbon Fuel Standard Program," January 26, 2022

² CARB, "Petition for Reconsideration of the Denial of the Petition for Rulemaking to Exclude All Fuels Derived from Biomethane from Dairy and Swine Manure from the Low Carbon Fuel Standard Program," April 25, 2022

- “The analysis shows that, primarily as a result of the State’s investment, as well as reductions in animal populations, the dairy and livestock sector is expected to achieve 4.6 MMTCO₂e annual methane emissions reductions by 2030—or only about half of the emissions reductions needed to achieve the 2030 target. The analysis further shows that anaerobic digesters account for the primary share of statewide methane reductions achieved and expected from the dairy and livestock sector. Accordingly, without digesters, California would not be able to meet its 2030 dairy and livestock sector methane emissions reduction goal. **The evidence suggests that the LCFS Regulation has been helpful in incentivizing the development of well-designed and operated digester projects in order to support achieving these emissions reductions** (emphasis added).”

The adoption of Alternative C would not result in the termination of many dairy digester installations and the loss of hundreds of millions of dollars in stranded assets. After the release of the CARB PowerPoint presentation on November 9th, Clean Energy had to immediately pause development on a number of dairy projects. The dairy RNG industry is spending over a billion dollars on in- and out-of-state projects based on market feasibility. Just the mention that Alternatives A and B are being considered has delayed if not stopped projects and other investments which will substantially reduce emissions.

California in-state production of RNG has grown to 20% of total RNG volume and continues to develop. We believe continued support for in-state development can only help our state meet emissions reductions goals and contribute to a healthy overall market. However, it’s important to note that no other state has the vehicle fuel demand necessary to drive adoption to displace diesel. Now is not the time to cut back when the nascent industry needs support to grow. In addition, California’s LCFS is setting the national standard as other states consider similar adoption. Any changes that would substantially impact market development are too early and could jeopardize more states adopting an LCFS.

In addition, such a policy would run counter to the newly adopted 2022 Scoping Plan Update which makes a prominent case to significantly reduce methane and black carbon emissions. In consideration of CARB’s goal to reduce in-state carbon emissions, we also believe the 2045 carbon neutrality goal would be placed at risk. We agree the Scoping Plan goals should meet statutory requirements to reduce climate pollution. Given their low carbon intensities nothing can do this more effectively than renewable fuels when displacing diesel which is a major source of black carbon and toxic air contaminants. Additionally, RNG can play a critical role in decarbonizing transportation as its production and displacement of hard-to-decarbonize diesel vehicles eliminates two of three identified SLCPs.

We support CARB’s science-based conclusion in the Scoping Plan Update related to dairy and livestock methane reductions, which states in part:

“...further reductions of approximately 4.4 MMTCO₂e of methane will be needed to achieve the 2030 methane emissions reduction target for the sector set by SB 1383...If the remaining reductions are met through a mix of dairy projects in which half are dairy digesters and half are alternative manure management projects, then it is estimated that at least 420 additional projects will be necessary. Additional emissions reductions beyond this level will likely be necessary to ensure that the overall state methane emissions reduction targets are met.”

Excluding or diminishing the inclusion of all fuels derived from dairy and swine manure would result in a substantial release of greenhouse gas emissions into the atmosphere and maintain diesel as the dominant fuel in California's heavy-duty transportation sector despite black carbon being a major SLCP. According to data from the California Air Resources Board (CARB) the annual average CI score of bio-CNG in 2021 was -44.4 gCO₂e/MJ.³ CARB should not eliminate credit for avoided methane emissions from biomethane before there is a viable alternative market to ensure that California's progress on SLCP reductions does not slow down or reverse.

IMPORTANCE OF BOOK AND CLAIM

Clean Energy recognizes the importance of book and claim eligibility for RNG used as a transportation fuel and therefore supports Alternative C (all North American RNG projects remain eligible for book and claim.) We are not supportive of Alternatives A and B as it would stop critical development of methane capture throughout the country, including California. This would unintentionally undermine the trust which CARB has built with the investment community across multiple industry sectors that investing private capital in California's policies is inherently uncertain because they are subject to strike of the pen amendments with very short notice.

The concept to limit book and claim eligibility to a "Western Natural Gas Network" – the scope of which has yet to be defined - starting in 2025, and to limit landfill RNG to book and claim starting in 2030 only if it is used to produce hydrogen for transportation - is also troubling if reducing SLCP is important. In our opinion that is shared by multiple stakeholders in this process, such changes would have a disastrous effect on future LCFS investment in low carbon fuel production and therefore goes against the very outcomes that the LCFS is trying to accomplish. This would make it more difficult to get low CI fuel to California and it's unclear which states would be included. The gas and electric systems are very different in functionality. There is currently a robust and liquid market for physical gas delivery across North America. That market already optimizes moving gas from supply to demand in a least cost (and lowest GHG)⁴ fashion. Generally, price signals are sent, and liquid trading occurs where the gas is produced, traded, and consumed without having to track individual gas sources throughout the value chain.

In-network producers, however structured, cannot and will not come close to replacing the fuel volume lost if out-of-network producers can no longer participate in California's market. Out-of-state producers are making substantial contributions to California's climate and clean air goals. Greenhouse gas emissions do not stop at California's borders, and most other states do not have clean fuel programs or are coming close to tackling our climate crisis as is California. The LCFS is working and needs more low carbon fuels, not less, which would occur if book and claim was eliminated.

³ California Air Resources Board, Low Carbon Fuel Standard Program, Certified Fuel Pathways. Available at: <https://ww2.arb.ca.gov/resources/documents/lcfs-pathway-certified-carbon-intensities>

⁴ Moving gas unnecessarily requires additional energy and emissions from compression stations and potential methane leakage.

If CARB would like to proceed with consideration of Alternatives A and B, we would appreciate receiving clarity on how CARB believes emission reduction goals can still be achieved and how the already low credit cost won't be reduced further. In fact, we would like to participate in the modeling if possible as the assumptions on endpoints depend upon the key assumptions when it comes to inputs.

It's also important to recognize the amount of in-state RNG production has been increasing rapidly in California over the past few years and now enjoys a greater proportionate market share than many other types of energy. California projects produce roughly 20% of the RNG used in California's transportation sector compared to 8 or 9 percent for the biodiesel and renewable diesel sectors, respectively. RNG fuels the vehicles which are the most difficult to electrify. With the introduction of the Cummins 15L engine in the heavy-duty sector, California has the opportunity to immediately reduce emissions. With the long process to electrify and given the narrow margins in the fleet sector, RNG production provides more options to reduce greenhouse gas emissions and criteria pollutants. Instead of limiting RNG supply, CARB should consider LCFS changes that broaden the opportunity to use renewable gases and increase the pace of decarbonization.

Local supply projects cannot meet the demand and supply given the market, permit, regulatory, cost and feedstock mismatches between CARB's demand and ability of in-state producers. California is supporting in-state producers without harming out-of-state producers such as with SB 1440. SB 1440 already provides in-state producers with a competitive advantage by requiring eligible biomethane to be physically delivered to California.

Other Jurisdictions Use Book and Claim

It is also important to note that the primary clean fuel policy in Europe, the Renewable Energy Directive, has long recognized the avoided methane benefits when assessing the lifecycle carbon intensity of various RNG pathways.⁵ Embracing the true GHG performance of RNG projects and allowing the use of book and claim have been a recipe for successful RNG project buildout in both the CA LCFS and EU cases.

Book and claim is also emerging as the preferred method to track RNG in North American Clean Fuel programs. For example, the U.S. Renewable Fuel Standard,⁶ the Canadian Clean Fuel Standard, the Oregon Clean Fuel Standard and the Washington Clean Fuel Standard all use some form of book and claim for RNG projects as well as for electricity and hydrogen. Gas utility procurement programs for RNG also primarily use similar concepts.

SUPPORT THE "RATCHET MECHANISM"

Clean Energy supports the "Ratchet Mechanism" concept which would address issues with credit price instability and work in conjunction with increased LCFS stringency. This would help keep the credit

⁵ See Table 100 in *European Commission JRC Science for Policy Report, Solid and Gaseous Bioenergy Pathways: Input Values and GHG Emissions*, 2017

<https://publications.jrc.ec.europa.eu/repository/bitstream/JRC104759/ld1a27215enn.pdf>

⁶ <https://www.biocycle.net/biogas-rng-projects/>

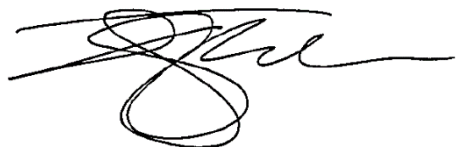
market healthy and functioning. The LCFS has an oversupply problem with depressed credit values and a bank with over 10 million credits. The LCFS must continue incentivizing investments in projects which will reduce carbon emissions. A self-adjusting “Ratchet Mechanism” will help to ensure market stability when sustained overperformance occurs. As it is currently, the LCFS can continue to send strong market signals that will drive innovation and deliver further GHG reductions. The program has multiple features to protect against price run-ups as well as credit shortfalls, but no “built-in” features that respond to overperformance. We encourage CARB to include this concept in discussion, consideration of details and public feedback as part of an upcoming public workshop.

CONCLUSION

Thank you for the opportunity to comment. As mentioned, Clean Energy was an early and consistent strong supporter of the LCFS and we remain committed to a collaborative partnership to ensure an effective and successful LCFS Update.

California has a substantial opportunity to reduce near-term Short-lived Climate Pollutants, carbon and NOx emissions. Approximately 800,000 diesel trucks can immediately transition to RNG, and then ultimately to ZEV technology as soon as it is commercially feasible. Clean Energy is committed to partnering with the state in achieving our climate and clean air goals and remains committed to ongoing engagement with CARB as this process moves forward.

Sincerely,

A handwritten signature in black ink, appearing to read 'Todd R. Campbell', with a large, stylized flourish at the end.

Todd R. Campbell
Vice President of Public Policy & Regulatory Affairs
Clean Energy