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August 27, 2024

Matthew Botill
California Air Resources Board
1001 I Street
Sacramento, California 95814

Re: Anew Climate Comments on the Proposed Low Carbon Fuel Standard 15-Day Amendments

Dear Mr. Botill:

Anew Climate, LLC ("Anew") is one of the largest climate solutions providers in North America and has an established track record of participating in California's various sustainability programs, including the Low Carbon Fuel Standard ("LCFS"). We commend the California Air Resources Board ("CARB") and its staff for its successful implementation of the LCFS, driving the decarbonization of California's transportation sector, and proposing amendments to the LCFS in response to the 2022 Scoping Plan Update. The LCFS has a significant role in helping California achieve its ambitious climate goals and we appreciate the opportunity to provide comments in response to the August 12, 2024 Notice of Public Availability of Modified Text and Availability of Additional Documents and/or Information for the Proposed Low Carbon Fuel Standard (LCFS) Amendments (15-Day Package).

We Support an Immediate Step-Down of CI Targets by at least 9%, effective January 1, 2025, as Critical to the LCFS Program's Success

Anew supports the proposal in the 15-Day Package to modify the near-term increase in stringency to a 9% CI reduction in 2025 from the 5% year-to-year increase included in the initial proposal. Given the LCFS credit surpluses generated over the last two years, a significant and near-term step-down of at least 9% is critical. Based on available market information to date, the LCFS credit bank will continue to grow for the remainder of 2024 as more credits are being generated than are needed to meet the current CI benchmarks. Without intervention, this will cause the market to stall or even fall further, undermining a key goal of the program—to incentivize investment in low-carbon fuels and fuel technologies. The step-down reflects the current effectiveness of the program, which suggests that the pace of CI reductions can be increased through the benchmarks."[1]

We further support making the step-down effective as of January 1, 2025, even if retroactive application is required. Many groups had initially urged CARB to target an implementation date of no later than January 2024. Given the dramatic oversupply in the market, implementation of a

[1] California Air Resources Board, Initial Statement of Reasons ("ISOR"), January 5, 2024, p. 25

step-down as soon as possible is critical to the integrity of the market going forward. Near-term action by CARB would send a strong signal that California remains committed to rapid decarbonization of its transportation sector and that investments in low-carbon fuels continue to be adequately rewarded and incentivized in California.

We believe that immediate implementation of a step-down of at least 9% is one of the most consequential and important steps CARB could take in this rulemaking process, and it is vital to the future of the LCFS program.

We Support a 30% or Greater Reduction in Carbon Intensity by 2030

While we would also support a higher CI reduction target, we recognize that a reduction scenario of at least 30% would help set California on a path to meet its ambitious target of at least a 40% reduction in economy-wide GHGs by 2030 and carbon neutrality by 2045. Strong CI reduction goals will continue to accelerate carbon reductions in the transportation sector while establishing clear market signals that will drive innovation and investments. We are also supportive of the proposal to smooth out the compliance target curve between 2025 and 2030 as included in the 15-Day Package.

We Support Tightening the Automatic Acceleration Mechanism

We have consistently supported the concept of creating an automatic adjustment mechanism ("AAM") as a tool within the LCFS and appreciate the inclusion of the AAM in CARB's proposal. We urge CARB to design the details of the mechanism to ensure that the AAM is triggered when the market truly needs it. The AAM should be amended such that it could be triggered as soon as 2026 if the applicable trigger conditions are met. Additionally, the AAM should be triggered when both the "Credit Bank to Average Quarterly Deficit Ratio" exceeds 2.5 and the annual credit generation exceeds the annual deficit generation for the compliance year preceding the year of the May 15 announcement.

Additional RNG-Related Comments

Anew appreciates the many occasions on which CARB staff has explicitly reiterated the Board's support for RNG throughout the informal workshop process and in the proposed 45-day and 15-day changes. If CARB truly wants methane abatement from sources such as agricultural wastes to continue, this rulemaking must convince the clean fuel investment community that RNG will remain a viable and important contributor to the LCFS framework.

We Appreciate CARB's Continued Recognition that LCFS Crediting Does Not Incentivize Increased Farm Sizes

Despite assertions to the contrary, there is no credible evidence that decarbonization programs like the LCFS incentivize the growth or consolidation of large dairies or other concentrated animal feeding operations ("CAFOs"). Even skeptical academic experts studying this issue have found no empirical evidence to support the "perverse incentive" claims made by some opponents of avoided

methane crediting.[2] Anew is partnered with swine and dairy farmers who are committed to reducing emissions from their waste products. Our direct experience aligns fully with what the data indicates: decisions around development and operations in the dairy and swine livestock sectors are firmly driven by strategic intent to maximize current and future value in the meat and milk markets, while maintaining strong environmental stewardship – not by increasing RNG value or an intent to incur additional waste production.

As Americans consume meat and dairy products, the companies developing RNG projects are investing at-risk capital to abate emissions from the waste products of an essential industry. The capture and conversion of methane creates undeniable and immediate climate benefits. The LCFS today correctly recognizes RNG from agricultural digesters as an impactful methane abatement opportunity for lowering GHG emissions of livestock operations – we urge CARB to stay the course towards realizing the full climate benefit of the substantial investments made to date and providing investors with the clarity and confidence necessary for continued development.

We Oppose Any Arbitrary End Date for Avoided Methane Crediting and Oppose Reduction of Eligible Crediting Periods from Three to Two

We strongly urge CARB to refrain from imposing any arbitrary end-date for avoided methane crediting. We especially oppose the new staff proposal in the 15-Day Package to cut down the number of avoided methane crediting periods from three to two for projects that break ground before January 1, 2030. Any such measure would not only hinder continued investment into methane abatement at farms that LCFS has been instrumental in catalyzing, but also jeopardize the continued operation of existing RNG production assets, which require significant operational expense. This new change would significantly impact existing projects, especially those that have already been in operation for several years and would unexpectedly have less than a full crediting period of eligibility remaining. Leaving investors with stranded assets by suddenly and significantly curtailing the expected lifespan of projects and their return on investment undermines California's goals of attracting investment into low-carbon transportation fuels and methane abatement.

Methane is the second-largest contributor to global warming after carbon dioxide due to its alarmingly high concentration in the atmosphere and the fact that it is a potent greenhouse gas (GHG) with impact over 80 times greater than carbon dioxide over a 20-year period. The critical need to address methane as a potent short lived climate pollutant was well-stated in CARB's 2017 Short Lived Climate Pollutant (SLCP) Reduction Strategy and echoed by other leading authorities. There is no more effective or immediate step that can be taken to address climate change than aggressively and rapidly reversing emissions of fugitive methane from all sectors, including society's organic waste streams.

Mandatory methane abatement from farming operations is not currently on the horizon either at the state level in California or at the federal level. If mandatory abatement is implemented, the

[2] Smith, Aaron, "Are Manure Subsidies Causing Farmers to Milk More Cows?" April 8, 2023. Available at https://agdatanews.substack.com/p/are-manure-subsidies-causing-farmers?r=i2qe&utm_campaign=post&utm_medium=web

current LCFS regulation already contemplates in Section 95488.9(f)(3)(B) the phase-out of avoided methane crediting for projects subject to mandatory abatement. Given the absence of mandatory methane abatement and the continued methane emissions from farming operations that are meeting America's meat and dairy demands, imposing a specific date for phasing out avoided methane crediting does not make sense for the climate. Capturing methane from California's methane sources (e.g., landfills, dairies, and wastewater) is critical for achieving California's climate targets. As staff noted in the ISOR, "[…] capturing methane from dairies is one of the primary measures for achieving the state's 2045 greenhouse gas reduction targets and SB 1383 methane reduction target."[3] Without anaerobic digesters, California would not be able to meet its SB 1383 methane reduction goals. Eliminating biomethane pathways used to produce hydrogen may also unduly restrict the development of low-CI hydrogen supply that California needs in order to displace fossil fuels. Increasing the supply of low-CI renewable hydrogen is a key strategy identified in the 2022 Scoping Plan Update and supports MDV and HDV ZEVs."[4]

While we oppose putting any end-date on avoided methane crediting, we recognize that CARB has faced unsubstantiated criticism and repeated calls for an immediate or near-term phase-out. We have previously applauded CARB for taking a measured position in support of avoided methane crediting generally and opposing any near-term phase out. Cutting down the number of crediting periods from three to two is a step in the wrong direction. We strongly urge CARB to continue following climate science on a technology-neutral basis and to maintain the framework that has catalyzed unparalleled investment into methane abatement at swine and dairy operations.

We Support Maintaining LCFS Eligibility of Biomethane from All Sources and Oppose Flow Direction Requirements for Delivery

CARB should maintain eligibility for delivery of biomethane from all sources. We therefore oppose CARB's proposal to impose directional flow requirements on deliveries from biomethane projects that break ground in 2030 or later. We further oppose the new proposal in the 15-Day Package to pull the deadline for indirect accounting of bio-CNG, bio-LNG, and bio-LCNG forward from December 31, 2040 to December 31, 2037 in the event that the Executive Office adopts a new gas map.

Currently, the LCFS regulation allows for indirect accounting of biomethane when injected into the North American natural gas pipeline system. In the ISOR, staff proposed that biomethane projects that break ground after December 31, 2029 from which biomethane is injected into a common carrier pipeline or claimed indirectly under the LCFS program for use as a transportation fuel or input to hydrogen production must meet new deliverability requirements. Starting January 1, 2041 for bio-CNG, bio-LNG and bio-LCNG pathways and January 1, 2046 for biomethane used as an input to hydrogen production, the entity reporting biomethane must demonstrate that the pipeline or pipelines along the delivery path physically flow from the initial injection point toward the fuel dispensing facility at least 50 percent of the time on an annual basis. The stated reason for

[3] ISOR, p. 124
[4] Ibid.

these new deliverability requirements is that these requirements would "help ensure that California is making progress on the state's methane reduction targets."[5] In the 15-Day Package, CARB added the new proposal to bring the deadline for bio-CNG, bio-LNG, and bio-LCNG pathways forward another three years, to December 31, 2037, in the event that the Executive Office adopts a new gas map. This latest proposal introduces significant uncertainty into the market.

We appreciate that CARB has resisted pressure to include immediate directional flow requirements for biomethane pathways, and that the proposal would not impact any biomethane fuel pathways for projects that break ground before January 1, 2030. However, we do not agree with CARB's decision to impose directional flow requirements on deliveries from biomethane projects that break ground in 2030 or later. Given the realities of the interconnected U.S. gas market, the 50% directional flow requirement is arbitrary and provides preferential treatment to fossil gas imported to California relative to imported RNG.

We Support a Full Credit True Up, Which Reflects the True Environmental Performance of RNG Pathways, and We Oppose the 4x Penalty for CI Exceedance

We support inclusion of a "Credit True Up" for temporary pathways after Annual Verification as proposed in the 15-Day Package. When implemented properly, such a concept can ensure that the LCFS program correctly accounts for the full GHG benefits all fuel pathways produce.

Biological systems such as anaerobic digesters experience substantial increases and decreases in gas production due to weather, livestock herd changes, and other factors that are not present in other fuel pathways. Because the carbon intensity of the gas from these systems is calculated against a quantity of avoided methane emissions, these variations in biogas production operating conditions result in outsized changes in the digesters' carbon intensity (CI) scores every year. Pathways should be allowed to fully "true up" LCFS credit generation to their actual CI score once that score is determinable based on actual greenhouse gas performance data.

We support the provisions in the proposed rule that provide for generation of additional credits if the verified CI is lower than the certified pathway CI based on the incrementally lower verified score using backward-looking actual performance. This true up process should be automated by CARB in the LRT-CBTS system for all fuels. However, we do not support the Proposed Rule's approach requiring a 4x "pay back" in cases where a verified CI exceeds the certified CI. This is overly punitive and not symmetrical. Instead, we recommend that if the verified CI is higher than the certified CI, the project should simply repay CARB for any excess credits claimed, and not be subject to any further enforcement liability unless there is malfeasance or other conduct contrary to the objectives of the program. The absence of intent to benefit from over crediting would be evidenced by retention of a number of LCFS credits greater than or equal to the excess generation for any reporting period to ensure pricing variability is not incentivizing over generation.

[5] ISOR, p. 31.

Anew is proactively developing an updated CI management approach to ensure we continue to provide maximum value recognition potential to our partners coupled with compliance risk mitigation.

We also respectfully request that CARB consider allowing a portfolio-wide true up as opposed to providing for true ups solely on a project-specific basis. Given that LCFS credits are fungible and are not associated with a specific project once generated, we believe allowing pathway holders to true up based on the performance of a portfolio would make it easier for participants to accurately align credit generation to the actual performance of projects.

We Support the Proposed Tier 1 Calculator Improvements

Anew supports allowing fuel pathway applicants to submit site specific inputs to demonstrate fugitive emissions on the 'Biogas-to-RNG' tab as outlined in comments submitted by the Coalition for Renewable Natural Gas in response to the draft Tier 1 Calculator. In addition, Anew requests that CARB allow fuel pathway applicants to submit site specific inputs to demonstrate digester leakage emissions on the 'Avoided Emissions' tab. This would allow projects to provide actual operating values that may differ from the default values of 2% for enclosed vessels and 5% for covered lagoons.

Entry of Site-Specific Cleanout Frequency in Tier 1 Calculator or via Tier 2 Application

Regarding GREET inputs for L1. (1-6).14 Retention Time and Drainage, it is Anew's understanding that in the proposed GREET calculator for each September, "System Emptied in This Month" must be selected by the fuel pathway applicant. This assumption requires that all projects model their operations to include a complete annual cleanout of volatile solids. A complete annual cleanout is currently only required as a baseline assumption for greenfield projects in Table A.10 of the Compliance Offset Protocol for Livestock Projects.

The implementation of this proposed default assumption could result in non-greenfield projects being certified with a carbon intensity that is not representative of normal operating conditions. It could also result in a project's baseline methane emission levels being set below what would have otherwise been emitted to the atmosphere. This proposed default assumption may be more applicable to the average dairy operation, but the same conclusion is not as appropriate for the average swine operation. Swine industry leaders and project operators have expressed that lagoons are cleaned out far less frequently than annually over a 10 to 15-year time frame. Therefore, on the 'Manure-to-Biogas (LOP Inputs)' tab, applicants should be able to enter the project-specific lagoon cleanout frequency for swine livestock populations in the Tier 1 Calculator. Applicants should be able to select from lagoon cleanout frequencies that are less frequent than annual and have default inputs "amortized" according to CARB's current guidance document.

As an alternative, Anew encourages CARB to consider allowing swine projects to submit their site-specific lagoon clean out frequencies as part of a Tier 2 fuel pathway registration. The annual loss in volatile solids results in a significant detrimental impact to the baseline methane emissions of swine projects and unfairly penalizes the project's CI score. Anew appreciates CARB's intention to simplify and streamline the project registration process, however, this should not be

done at the expense of swine projects. To accurately reflect actual operating conditions of swine manure projects and minimize pathway registration processing time, we urge CARB to consider allowing applicants to enter actual cleanout frequencies by project in the Tier 1 Calculator.

Additional Issues

We Oppose the Changes to Forest Biomass Waste Eligibility

We oppose the changes to the definition of forest biomass waste made in the 15-Day Package. Restricting qualified forest biomass feedstock to "non-industrial forestlands" will significantly restrict the amount of material available for cellulosic biofuels projects. Industrial forestland owners are the only large landowners in the state that can offer reliable long-term forest biomass supply agreements for cellulosic fuel production. At this time, there are no organizations or entities that can reliably aggregate supply from smaller nonindustrial landowners. Cellulosic fuel production will provide the necessary financial incentives to extract hundreds of thousands of bone dry tons of biomass annually, which supports the treatment of tens of thousands of acres of forests each year. However, if this new requirement is adopted, over one third of private forestlands will be eliminated from the potential wood supply basket and result in biomass from 75% of all California forests being unviable for biofuels production. Excluding large landowners from participating in the LCFS program is clearly self-defeating as they are key partners in any successful long-term solution that scales up forest management successfully in California. Excluding them from the program will ultimately result in higher fuel loads on those lands and thus a heightened fire risk and ultimately higher emissions if/when there is a wildfire, which runs counter to the stated goals and policy direction on wildfires in the 2022 Scoping Plan.

EV Considerations

Anew is supportive of the additions and latest modifications CARB has made to the Fast Charging Infrastructure ("FCI") credit opportunities for light, medium, and heavy duty charging as well as the ability to allocate base credits to the vehicle manufacturers. Anew continues to have concerns regarding the verification requirements including site visits for EV credits given the large costs this could incur for credit generators with large numbers of smaller sites or for customers with secure or limited-access operations where site visits by a third-party could be impactful to operations or security.

We thank CARB for its important work in implementing the LCFS program. Should you have any questions about anything we have stated here or require further clarification, please contact Andy Brosnan at abrosnan@anewclimate.com.

Sincerely,

Anew Climate, LLC