

December 21, 2022

VIA ELECTRONIC FILING

Ms. Cheryl Laskowski, Branch Chief - Low Carbon Fuel Standard  
California Air Resources Board, Industrial Strategies Division - Transportation Fuels Branch  
1001 I Street  
Sacramento, CA 95814

**Re: *Anew Climate, LLC Comments Regarding the November 9, 2022 Low Carbon Fuel Standard Public Workshop to Discuss Potential Changes to the Low Carbon Fuel Standard***

Dear Ms. Laskowski:

Anew Climate, LLC (**Anew**), formed through the combination of Element Markets and Bluesource, is one of the largest climate solution providers in North America with an established track record of participation in California's various sustainability programs. We appreciate the opportunity to provide the California Air Resources Board (**CARB**) with our comments regarding the topics presented in the November 9, 2022 Public Workshop to Discuss Potential Changes to the LCFS Regulation (the **Workshop**).

***Proposed Alternative C Provides the Best Path to Achieving CARB's Stated Goals***

Each of the carbon intensity (**CI**) benchmark trajectories suggested by CARB aim for a 90% cumulative CI reduction by the year 2045. We applaud CARB for their ambitious target setting and believe that the overall long-term target suggested is appropriate.

CARB's three alternatives presented for public comment differ significantly in the path they take to the 90% goal, and we highlight the importance of this "path shaping" to the LCFS program. We believe that "front loading" the CI benchmark schedule, as suggested by CARB in Alternative C, is most conducive to California's decarbonization efforts. The most immediate consideration supporting this approach is the vast oversupply of credits in the LCFS marketplace and the looming effect – a sharp decline of investment into California's low carbon fuels value chains due to depressed credit prices. The credit market is in dire need of an assertive price signal from CARB today to avoid a roll back in low carbon fuel infrastructure that makes the extended decarbonization goals of the coming decades unattainable.

When shaping the compliance curve, it is just as important to evaluate the long-term strategic effect of CI target pacing as it is to address the current acute situation of the LCFS market. CARB has shown that it is aware of the need for fundamental, sectoral shifts to achieve a 90% reduction in transportation GHG emissions. Mere adjustments of business as usual simply won't do, and in fact a carefully coordinated confluence of several decarbonization tools – including biofuels,

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electrification, carbon capture and sequestration and many more – is necessary. We emphasize the necessary paradigm shift here because we believe that it is not possible without big leaps in the near future, as the magnitude of the necessary changes is not something that the fuels industry can just “slowly build up to”.

The accelerated CI decrease through 2030 envisioned in Alternative C is crucial to achieving the eventual 90% GHG decrease target. Once large investments and decarbonization milestones – decarbonization of the majority of California’s gas grid, fuel switch in the majority of the California fleet and refueling infrastructure, buildout of major hydrogen hubs, etc. – are achieved based on Alternative C’s front-end reduction targets, scaling and optimizing this foundation in later years is appropriate along a more moderate CI benchmark trajectory. We do not see the reverse approach, represented by Alternatives A and B, to be viable. If value chain participants can “get by” today with marginal improvements in a fundamentally unchanged transportation industry, it is unlikely that the deferred sectoral shifts can catch up in the late 2030’s and 40’s. Capital doesn’t trickle and accumulate into new technologies and value chains; it flows in high volume if there is a clear and reasonably safe avenue for returns.

Our comments address other essential elements of CARB’s proposed alternatives. We request that in the event CARB actions other concepts within Alternatives A and B, the CI schedule proposed in Alternative C should also be implemented.

#### ***Supplement Alternative C’s CI Target Adjustments with an Acceleration Mechanism***

Even after the CI target adjustment measures implemented by CARB as part of this rulemaking are taken into account, today’s LCFS market will largely remain unaffected through 2024 and oversupply will continue to deter clean fuel investment. The credit bank is increasing under the program today, so while the proposed adjustment measures contribute to long-term stability and trust, market participants will prioritize current and short-term credit positions when making decisions about credit procurement. A more immediate and responsive approach is needed to maintain market momentum as the rulemaking process continues. In addition to the CI target setting considerations above, we request that CARB implement a transparent, predictable and responsive mechanism that contributes to the balance and predictability of the LCFS credit market in the short term. This mechanism, called an acceleration mechanism, would complement the updated overall stringency of the program, complement existing mechanisms to avoid credit shortfalls and price escalation, and ensure that opportunities for additional reductions of climate change pollutants and toxic air pollutants can be realized. An acceleration mechanism would keep innovation, investment, and emission reductions advancing faster than they would otherwise. We believe an acceleration mechanism provides clear metrics to trigger adjustments to the program and the necessary certainty for deficit and credit generators to plan accordingly. By incorporating an acceleration mechanism into the LCFS Regulation, CARB can provide the market with a clearer signal that investments in clean, low-carbon fuels will be rewarded, and that California will not leave climate change pollutant reductions “on the table” in the event the program significantly exceeds its CI reduction targets in the future.

### ***The Proposed Phase-Out of Avoided Methane Crediting and Limitations on Book and Claim Delivery of Biomethane in Alternatives A and B Conflict with CARB's Stated Goals for Program Changes***

In the Workshop, the FAQ document issued in connection with the Workshop<sup>1</sup> and in-person meetings with industry stakeholders, CARB staff established that the primary intent of these measures is to incentivize in-state development of biomethane, contribute to California's Short Lived Climate Pollutants reduction goals, decarbonize non-internal combustion engine fuels, harmonize the LCFS program's direction with the state's 2022 Scoping Plan and harmonize B&C delivery requirements of biomethane with that of renewable electricity (the only other B&C eligible fuel under the program).

We believe implementation of these measures would have a significant negative impact on progress toward the goals cited by CARB for the reasons described below.

#### ***Book and Claim Delivery and Methane Avoidance Crediting Work***

California's gaseous fuel mix has reached full decarbonization, made possible by the combination of these two measures. Producers of biomethane have the necessary flexibility to build out digestion projects at locations where methane emissions occur and sufficient feedstock is available for biomethane production. This flexibility resulted in over 96% of California's CNG and LNG fuel volumes being derived from waste-based renewable biogas and reaching an overall carbon-negative footprint. When approaching the track record of these measures from a methane reduction standpoint, as was done by CARB in the March 2022 analysis of SB 1383 program implementation<sup>2</sup>, it is clear that the LCFS program, in synergy with other state and federal level efforts, is of key importance to continued methane emissions mitigation in California. Put simply, B&C delivery and methane avoidance crediting work.

#### ***Restricting Book and Claim Delivery and Avoided Methane Crediting Devalues Biomethane's Carbon Impact, Puts Future Supply of Low Carbon Fuel at Risk***

In the Workshop and the 2022 Scoping Plan, CARB emphasizes the key role of biomethane in addressing hard to decarbonize sectors. CARB also establishes that continued growth of this versatile renewable commodity will be necessary for achieving California's climate goals. By limiting book-and-claim and devaluing biomethane's carbon impacts, CARB risks driving biomethane supply it needs in the longer term out of the state. We request that CARB consider that by limiting B&C and phasing out methane avoidance, not enough biomethane would be available in California over the coming decades to support clean hydrogen and electricity for zero emissions vehicles, or for use in non-transportation sectors set forth in the Scoping Plan.

Biomethane is a key driver of low-carbon hydrogen production (provided that ~95% of hydrogen in the US is produced from natural gas today). Hydrogen has tremendous potential and is

<sup>1</sup> Supplemental Workshop Frequently Asked Questions Document, CARB, December 2022 [https://ww2.arb.ca.gov/sites/default/files/2022-12/SupplementalFAQ\\_LCFSWorkshop.pdf](https://ww2.arb.ca.gov/sites/default/files/2022-12/SupplementalFAQ_LCFSWorkshop.pdf)

<sup>2</sup> Final Analysis of Progress toward Achieving the 2030 Dairy and Livestock Sector Methane Emissions Target, CARB, March 2022 <https://ww2.arb.ca.gov/sites/default/files/2022-03/final-dairy-livestock-SB1383-analysis.pdf>

appropriately at the center of California’s vision for decarbonizing transportation and the economy as a whole. Among hydrogen’s biggest challenges are its exceptionally high cost and logistical limitations. Flexibility in the placement of hydrogen production assets for optimal feedstock availability and access to end use markets is of pivotal importance to their development. Limiting B&C for biomethane becomes even more detrimental to continued hydrogen deployment than to other end use cases.

*Changes to Biomethane B&C Do Not Harmonize Delivery Requirements with Low-CI Electricity*

In the Workshop, CARB’s considerations regarding limiting B&C delivery capabilities for biomethane were communicated in the context of harmonizing deliverability requirements of biomethane with low-CI electricity. We believe delivery requirements of different fuels in the LCFS program are already prudently harmonized with the actual physical delivery processes of their respective value chains – the only caveats being that CARB should allow for B&C delivery biomethane for EV charging-facing power generation and consider making pipeline-injected hydrogen gas B&C eligible.

The electric grid and North American common carrier natural gas pipeline network are not directly analogous, and the one-to-one comparison of deliverability requirements between the two is, in our opinion, not supported by the differing architecture of these systems. The US pipeline grid is managed and balanced by pipeline operators to work as a single system, with abundant physical interconnection points – biomethane, due to its fungibility with natural gas, can be nominated for delivery to California from any point of the North American gas transmission network. The same does not hold true for the US electricity grid. The segregation of interconnects and balancing authorities is much more pronounced and delivery much more constrained in the electricity market, which is appropriately reflected in the existing LCFS framework.

*Both Measures Jeopardize the Ongoing Operation of Existing Facilities Inside and Outside of California – Putting Jobs, Low Carbon Fuel Supply and Achievement of SB 1383 Waste Diversion Goals at Risk*

We request that CARB consider the effects of limiting biomethane B&C delivery and sunseting methane avoidance crediting on the continued economic viability of existing manure and landfill-diverted organics digester operations. Waste digesters are a potent decarbonization solution, creating circular value chains and reducing emissions from activities that have few or no alternative paths to sustainability. Their operational costs are significantly higher than the natural gas they substitute, and even higher than other biomethane sources such as landfill gas. While waste digester operators continue to optimize and innovate to make biomethane production more cost effective, there are hard limits on their ability to do so – collecting, treating and processing these waste streams into a useful energy carrier have significant ongoing costs. Access to LCFS market value that includes the GHG benefits from avoided methane emissions is a lifeline not only to continued growth of California’s waste digester industry, but to the financial viability and continued production of established facilities. B&C delivery and methane avoidance crediting

provide California waste digesters with a framework that allows for the creation and maintenance of outlets for landfill-diverted waste streams.

It is of paramount importance to provide investors supporting the projects driving the LCFS program both now and in the future with clear and reliable information about the future value of the fuel they develop. While CARB established that projects receive methane avoidance credits for ten years at approval, there continues to be substantial opacity around how long this eligibility can be maintained and whether a project can reliably count on methane avoidance crediting by the end of its development timeline. We request that CARB provide affirmative statements and guidance regarding the timeframe for methane avoidance crediting and ensure this timeframe extends through 2040 or beyond (as opposed to new projects potentially losing eligibility in 2030).

### **Suggested Measures to Achieve CARB's Stated Goals**

At CARB staff's request, we are proposing measures other than limiting B&C delivery of biomethane and the phase out of avoided methane crediting, some of which we acknowledge may fall outside the scope of the LCFS program, at least in part, and may require cooperation from other California regulators for implementation. We believe these measures are conducive to CARB staff's stated goals of driving digester buildout in the state of California, continuing decarbonization of California's fuel mix along its targeted trajectory of zero emissions vehicle deployment and reaching SB 1383's targets for reducing short-lived climate pollutants and diversion of organic waste from landfills.

#### **Extend the Use of B&C Delivery for Biomethane Beyond CNG, LNG and Hydrogen**

In their December 1, 2022 Proposed "Set" Rule for the Renewable Fuel Standard, EPA is building a program for the continued development of biogas production and electric vehicle deployment. The "eRIN pathway", focused on both on-site biogas-based power generation and driving decarbonization of EV charging by leveraging B&C delivery of pipeline-injected biomethane to power production, shows a federal commitment that is in line with California's zero-emission vehicle strategy. We strongly suggest that this opportunity for aligning the LCFS program with eRIN generation pathways from B&C delivered biomethane not be missed.

Extending B&C delivery would remove existing barriers to continued growth of the biomethane industry and have synergistic effects on the development of novel transportation fuel value chains that may rely on biomethane as a feedstock for further decarbonization. CARB has identified many of these novel applications and suggested adding them as opt-in fuels under LCFS during the July 7, 2022 workshop. Similarly, the 2022 Scoping Plan Update addresses the likely shift of biomethane's current CNG and LNG-centric role in California's ZEV future, while emphasizing its pivotal contribution to the reduction of methane emissions and as an energy feedstock. Extending B&C eligibility would be in line with this strategic vision. At a minimum, B&C delivery of biomethane should be available for biomethane used in power generation and ammonia, dimethyl ether and methanol production. California EV drivers and adopters of novel

fuel technologies should be given the opportunity to harness the benefits of low and zero-carbon fueling of biomethane-derived fuels.

*Harmonize and Streamline the Permitting Processes Involved in Building and Commissioning a Biomethane Production Plant*

A significant hurdle in the continued advancement of California biomethane production is the administrative burden, delays and uncertainties faced by developers in the permitting process for new facilities. To ensure that the LCFS program effectively drives in-state development of biomethane facilities, we request that CARB consider working with other California regulatory agencies on the state and local level to harmonize, streamline and facilitate completion of the various permitting processes involved in building and commissioning a biomethane production plant.

*Re-establish and Increase Public Funding Opportunities for California Biomethane Facilities*

California has successfully spurred biomethane development through direct funding avenues. We suggest that CARB consider reestablishing and increasing public funding opportunities for California biomethane facilities as a targeted approach to supporting in-state development.

*Revise Outdated Landfill Gas Capture Efficiency Factors in the Tier 1 CI Calculator for Organic Waste Digestion*

Currently the Tier 1 Simplified CI Calculator for Biomethane from Anaerobic Digestion of Organic Waste calculates methane avoidance created through the diversion of organic wastes from landfills based on the assumption that all landfills in the US achieve a 75% landfill gas capture efficiency. To the contrary, NASA, NOAA, and other agencies, including the EPA, have reported that landfill gases are rarely properly capped. Large amounts of greenhouse gases are continuously emitted from landfills at high amounts, significantly exceeding the 25% leakage rate considered by CARB. To drive digester deployment of landfill-diverted waste in the State of California, we recommend that CARB revise the outdated landfill gas capture efficiency factor in the Tier 1 Simplified CI Calculator for Biomethane from Anaerobic Digestion of Organic Waste to 34%, as modeled based on best available current data by Anaergia – the owner and operator of California’s largest landfill-diverted waste digester in Rialto.

*Engage with Other Agencies to Increase Digestible Waste Biomass Availability and Streamline Landfill-Diverted Waste Stream Definitions and Requirements*

The organic waste diversion goals of SB 1383 and increased development of waste digesters in California are highly synergistic goals, and in fact depend on each other. In the absence of economically viable outlets for separated waste streams, waste diversion can become exceedingly burdensome and contribute to counterproductive higher tipping fees. On the other hand, the dependence of waste digester development on waste separation is rather trivial – no feedstock means no biomethane. In our work with California partners in the waste digester industry, it is evident that SB 1383’s waste diversion mandates have not yet led to sufficient feedstock availability. We request that CARB engage with its sister agencies, such as CalRecycle,

to work with the stakeholders of the waste collection and management industry to increase digestible waste biomass availability in alignment with SB 1383.

The LCFS requirements around evidencing the alternate fate of feedstock and the recordkeeping criteria for LCFS-compliant claiming of methane avoidance CI benefits are opaque and are not conducive to scaling, since they cannot be met by multi-stakeholder value chains. Streamlining and harmonizing landfill-diverted waste definitions and requirements would greatly facilitate waste digester development in the state of California. We request that CARB engage with other relevant agencies to harmonize LCFS definitions and requirements around “food scraps” and other landfill-diverted waste streams with waste management industry practices and the SB 1383 requirements and reporting framework.

### **Crop Cap**

While we believe Alternative C provides the best path to achieving CARB’s stated goals, we also believe that the measures contemplated by Alternative C are best supplemented with the addition of a reasonable cap on feedstocks that carry a risk of competing with global demands for food and feed.

The share of biomass-based diesel under the LCFS has grown substantially over the last several years, rising from 0.4% of the diesel blend in 2011 to 32% in 2021. Most biomass-based diesel currently produced is made from waste oils. However, trends suggest that in the future, the biomass-based diesel market could scale up and rely increasingly on virgin oils, competing with global needs for food and feed. A reasonable cap on lipid feedstocks would help prevent the potential negative impacts on ecosystems, biodiversity and livelihoods that could result from increased demand for virgin oils and the expansion of croplands and deforestation that often goes hand in hand.

### **Deficits for Jet Fuel**

Anew supports the inclusion of jet fuel as a deficit-generating fuel under the LCFS. This is a necessary step in meeting Gov. Newsom’s July 22 request that CARB “adopt an aggressive 20% clean fuels target for the aviation sector.”

The current opt-in status for sustainable aviation fuel (SAF) has already driven increased production of SAF that is being delivered to airlines in California. Financial incentives such as the tax credits for SAF contained in the Inflation Reduction Act are likely to drive further production and uptake of SAF in the state. However, the current opt-in status for jet fuel effectively means that US taxpayers and California gasoline consumers are paying to bring SAF into the aviation market. Given the new federal incentives, this dynamic is likely to accelerate.

Principles rooted in the free market and fairness require that airlines and air travelers support the cost of the transition to low carbon aviation fuels. Those reaping the most benefits from flying, i.e., airlines and their customers, must bear at least a share of the significant costs involved with decarbonizing a hard-to-abate sector like aviation. Charging solely the US taxpayer (via federal tax credits) and California gasoline consumers (via the LCFS) with this costly transition

amounts to free-riding and is contrary to the well-established free market principle that those receiving a benefit should generally pay for it. In addition, principles of equity demand that flyers, and in particular frequent flyers, shoulder the cost of decarbonizing their choice of travel, rather than rolling this cost onto California drivers (many of whom may be unable to afford air travel).

At a minimum, the LCFS should be expanded to cover jet fuel that is uploaded in California for intra-state flights. Going one step further and extending the LCFS to jet fuel used on interstate flights would be even more impactful in terms of decarbonizing California's transportation emissions. The volume of jet fuel used for intra-state flights within California is small, compared with the volume of fuel used on flights originating in California that are destined for a domestic or international airport outside of California.

Some have argued that California and other states are preempted from regulating jet fuel in any way. These arguments rest on an interpretation of Sec. 233 of the Clean Air Act that would disallow California from imposing any carbon intensity requirements on jet fuel because that would be considered "enforcing any standard respecting emissions of any air pollutant from any aircraft or engine" when there is no such federal standard under the Clean Air Act itself. It has also been argued that the Federal Aviation Act of 1958 and other laws preempt any state-level regulation of aviation operations, including ground operations.

These arguments are not persuasive. Imposing carbon intensity requirements on fuels sold in California is not the same as regulating aircraft engine emissions. In addition, it is not evident that the regulation of aircraft operations extends as far as the carbon intensity of jet fuels that are allowed for sale in California. It would be useful for CARB to seek a formal legal opinion on the question whether CARB's authority to regulate jet fuel could extend to interstate or intrastate flights originating in California without running afoul of the federal preemption doctrine.

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