March 15th, 2023

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

CAVANAUGH
Stewardship Through Innovation

RE: Cavanaugh & Associates, P.A. Comments Regarding Potential Changes to the Low Carbon Fuel Standard

Dear Chair Randolph,

Thank you for the opportunity to submit comments in response to the February 22, 2023 Public Workshop regarding potential changes to the Low Carbon Fuel Standard (LCFS). Cavanaugh & Associates, P.A. (Cavanaugh) provides a broad suite of services for our bioenergy clients, including conceptual design of biogas projects through feasibility analysis and various stages of design, permitting, project implementation, construction, and operations. Cavanaugh continues to pioneer innovations in bioenergy with several first-of-its-kind projects in the U.S., deriving high-value energy products and biogas from agricultural "wastes". Cavanaugh is also an active member and supporter of the American Biogas Council.

Biogas systems protect our air, water, and soil by recycling organic material, like food waste and manure, into renewable energy and soil products. Biogas systems are at their heart a biological means to capture methane that would otherwise be emitted into the atmosphere for use as a renewable fuel. This process specifically decreases baseline methane emissions by converting methane back into carbon dioxide. All of this is an effort to protect our air, water, and soil – crucial parts of the solution to the challenges CARB seeks to address.

As you consider comments on this round of rulemaking, Cavanaugh would like to offer feedback for your consideration.

Carbon Intensity

Cavanaugh supports CARB's commitment to reducing carbon and is pleased to see a proposed reduction target of 30%. **However, we do not believe this will be sufficient to reach CARB's intended goals and therefore urge CARB to adopt a CI reduction target of 40% along with the other characteristics of the Alternative C Scenario Design CARB put forth in its November 9, 2022, LCFS workshop. The ABC is currently conducting a high ambition study with the Low Carbon Fuels Coalition (LCFC) which will be finalized in the coming months that supports the increased CI reduction target.**

If 40% cannot be achieved, we still recommend the Alternative C Scenario Design, but with a target CI reduction of 35%. Adopting this Alternative would enable California to meet the emissions reductions necessary to reach near-term benchmarks. We note that many other stakeholders have expressed support for the 35% target reduction by 2030.

We would suggest for 2024, that the carbon intensity target be increased by 5% (to 16.5% total in order to absorb excessive banked credits, then linearly increased to 40% or 35%, as applicable, from there and implement an automatic adjustment mechanism going forward such as increasing the next annual increase if the baked credits increased in the prior year.

Further, as proposed by CARB in slide 25 of the February workshop presentation, Cavanaugh agrees that a near-term step-down in compliance target stringency would ensure a steady price signal for credits in the market to support ongoing investment as mentioned in the presentation.

In the February 22nd workshop presentation, CARB included the concepts of changing the way RNG is treated under the LCFS, both as to phasing out the Avoided Emissions Credit (AEC) and imposing deliverability requirements on RNG produced and injected into the pipeline outside of the western gas grid. If CARB instead adopts Alternative C, there would be no changes to either the AEC or which RNG can generate LCFS credits.

We make the following comments if CARB does not adopt Alternative C.

Book & Claim

While we are grateful for CARB's leadership on environmental matters, we disagree with CARB's proposal in the workshop that would effectively cut a majority of US companies out of the California LCFS by limiting Book & Claim only to projects connected to the western United States.

CARB has a well-earned reputation and legacy as a visionary pacesetter for the kind of change that begins at home in California but ultimately drives environmental policy across the country. Though Cavanaugh is pleased to see some states establish their own LCFS programs, there are still too few and California remains the gold standard other states strive to meet. Currently, best practices for some renewable natural gas producers in states that do not have their own LCFS is to participate in the robust California market, essentially converting the RNG they put into an interstate pipeline in their state into California LCFS credits that can be purchased by obligated parties. In this regard, California drives the growth of low-carbon fuels nationwide by providing incentives to RNG producers. Losing access to the California market for non-western RNG producers would be a major setback to national adoption of low-carbon fuels.

Forward-looking entities operating outside of California have looked for ways to connect their renewable energy initiatives to the standards that are set in Sacramento, whether that is through state legislatures adopting regulatory policies based on the LCFS or businesses connecting their projects directly to the LCFS. In this way, these organizations are catalysts for broader adoption of policies inspired by CARB nationwide.

Therefore, while the changes to the Book & Claim program proposed by CARB last month may prove beneficial to California companies, they will have the unintended consequence of derailing billions of dollars of planned investments in RNG projects east of the Rockies and undermining confidence in CARB's technology and science-based implementation. Further, for companies that rely on Book & Claim to validate the stability of credit markets similar to the LCFS for future application in other states, CARB's proposed modifications would have a limiting effect on the momentum seen around the country for programs modeled after the LCFS.

In addition, while the idea behind limiting Book & Claim to projects on the Western pipeline is to reduce the abundance of credits on the market, thereby increasing credit prices, CARB's proposal to significantly increase CI reduction targets is intended to accomplish the same goal. Thus, the limitation on Book & Claim to western projects would disincentivize renewable natural gas production nationwide in the name of achieving credit pricing goals in California that may be reached by other means.

Further, we recommend updating LCFS rules to allow Book & Claim for onsite power generation for charging medium and heavy-duty EV fleets fueled by directed biogas RNG. Opening this pathway will directly support Governor Newson's Executive Order N-79-20, which established a target where 100 percent of medium and heavy-duty trucks are zero-emission vehicles by 2045, while also eliminating the need for diesel backup generators at EV charging facilities. One of the biggest challenges with the deployment of fleet EV charging facilities is that they require a large amount of capacity and transportation infrastructure upgrades that can take up to 5 years to complete. Allowing Book & Claim for directed biogas RNG for power generation powering medium- and heavy-duty EV fleets would not only accelerate the State's transportation electrification goals, but it would also allow biogas producers to access this growing market.

We strongly urge CARB to leave Book & Claim unchanged. Existing projects and others in development would risk becoming stranded assets, with associated damages, and CARB would have shaken the foundation of the LCFS with a stroke of pen. This is a risk that will prevent participants from following through on projects in and outside of California by backtracking on Book & Claim.

Our members who rely on Book & Claim to drive the growth of renewables in other parts of the country have billions of dollars earmarked for projects that hinge on the California credit market being available to them. These projects all divert methane emissions away from our skies and into pipelines. An abrupt cessation of access to the LCFS for these initiatives would not only hurt the RNG market outside California but worse, would eliminate a major incentive that drives our national pivot away from fossil fuels.

Avoided Emissions Credits

Cavanaugh strongly opposes a decision to phase out avoided emissions credits (AECs). This incentive- based approach has proven highly successful, and we encourage CARB to not limit crediting until another incentive is in place. This is

another area where CARB is deviating from science-based implementation and its own precedents under the carbon offset protocol and the LCFS to recognize methane emissions, one of the most potent GHG.

CARB should clarify that additional types of livestock manure, like chicken and beef cattle, can obtain an AEC and confirm treatment of deep pit swine facilities as anaerobic. While we believe the current Tier 2 process is sufficient for a user to develop and CARB to approve avoided emissions credits for feedstocks such as poultry manure, project developers and users may benefit from further regulatory clarity with explicit statements of support by CARB.

CARB should add chicken and beef cattle manure to the new Tier 1 Calculator, which should be renamed Tier 1 Simplified CI Calculator for Biomethane from Anaerobic Digestion of Livestock Manure and amend the Livestock Offset Protocol (LOP) to include them. The scientific basis exists to do so in the document CARB used to create the LOP. We would also recommend changing the name of the Protocol to the LCFS Livestock Protocol.

A recent UC Davis analysis, *Meeting the Call: How California is Pioneering a Pathway to Significant Dairy Sector Methane Reduction,* states,

> *". . . misguided efforts to change course by forced coercion to pasture-based operations, direct regulation of dairy farms, or limitation on dairy digesters incentives will not only fail to achieve the desired greenhouse gas emissions reductions but will exacerbate the problem by causing significant emissions leakage. Revenue streams that incentivize investment in biogas capture and beneficial use are critical. Phasing out of avoided methane crediting in the dairy sector would jeopardize existing projects, making them uneconomic in the long-term, and dry up investment capital for the additional digester projects sought by CARB to achieve the state's ambitious and aggressive targets." (https://www.arb.ca.gov/lists/com-attach/91-lcfs-wkshp-nov22-ws-AWJWMVwvVWQGXwFt.pdf)*

In its presentation from the February 22nd workshop, CARB refers a number of times to aligning the LCFS with Federal regulations including with RFS eRINs. However, there is a gaping inconsistency between the feedstocks for renewable electricity able to generate eRINs via the LCFS versus the RFS. Notably, eRINs can be generated by electricity from both biogas and pipeline-delivered RNG. We urge CARB to permit such RNG to be able to generate LCFS credits.

Climate Smart Agriculture

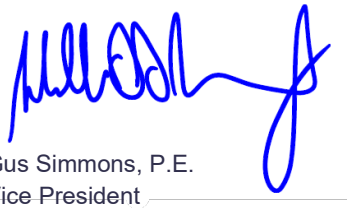
We also encourage CARB to establish a process for expanding the scope of recognized climate-smart agriculture (CSA) practices including soil carbon sequestration in future rulemaking. By recognizing CSA in CA-GREET and in LCFS pathways, CARB would take a leadership role in incentivizing climate-smart farming practices in all locations that grow feedstock for LCFS fuel pathways, build knowledge regarding the short and long-term effects of various CSA strategies, and speed fulfillment of California's aggressive decarbonization goals.

Winter-hardy biogas cover crops, which are a potential crop-based feedstock grown on land typically devoted to another crop and grown during the base crop's "off-season", would have no impact to either land-use or the nation's food supply. Winter- hardy biogas cover crops could generate crop-based transportation fuels from a feedstock not currently available. CARB should promote such innovation in farming and renewable fuels processing and creation rather than trying to limit crop-based fuels in California. As noted in the 2022 Scoping Plan, California "must continue to support low-carbon liquid fuels during this period of transition for the much harder sectors for ZEV technology such as aviation, locomotives, and marine applications". Cover crop "biomass" can serve as an excellent substrate that can be used in anaerobic digestion, along with other organic feedstocks such as livestock manure and food waste, to produce renewable natural gas. Cavanaugh believes CARB should encourage and incentivize the use of cellulosic feedstocks from cover crops and perennial prairie by incorporating these feedstocks in both the LCFS and Tier 1 calculators.

Cavanaugh appreciates the opportunity to comment on this proposal. We urge CARB to adopt Alternative C from the November 2022 workshop as the Alternative for the amended LCFS. If it does so, the target reduction for 2030 will be 35% and there will be no change as to how the AEC is treated and the deliverability requirements for RNG. We also urge CARB to expand the scope of CSA practices. These are all key issues for our organization and membership. We hope these comments and suggestions are helpful in the rulemaking and decision process.

Thank you for your consideration.

Respectfully submitted,



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