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Liane M. Randolph
Chair – Low Carbon Fuel Standard
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Proposed Amendments to the Low Carbon Fuel Standard

Dear Chair Randolph,

We appreciate the opportunity to provide feedback on the proposed Draft Amendments to the Low Carbon Fuel Standard.

Fidelis New Energy, LLC (“Fidelis”) is an energy transition company driving decarbonization through investments in renewable fuels, low-carbon intensity products, and carbon capture and storage. Using proprietary technology and processes, Fidelis aims to develop, invest, and deliver climate positive and carbon negative infrastructure to reach carbon reduction and climate positive targets. Fidelis develops carbon negative sustainable aviation fuel, renewable diesel, renewable naphtha, clean hydrogen, and clean ammonia infrastructure; in addition to developing and operating CO₂ capture units, pipelines, sequestration wells, and related transportation and sequestration infrastructure.

We applaud the California Air Resources Board’s efforts to pursue means of ensuring the continued success of the low carbon fuels standard. Our comments on proposed changes to the Standard are as follows:

Fidelis Supports Expanding Definitions for Acceptable Biomass Waste Feedstocks

It is critical for CARB to adopt a broader biomass definition in not only the most recent LCFS legislative proposal, but all future policy rulings by the Agency. The proposed utilization of arbitrary terms such as “unmerchantable” and certain “diameter sizes” for secondary material unnecessarily limits the potential feedstock pool, in potentially counterfactual ways, ultimately limiting the adoption of carbon neutral and negative technologies.

Furthermore, it is unreasonable to qualify material based upon diameter. This is out of alignment with existing federal programs and would be a departure from industry norms. Tracking and classifying material eligibility based on material diameter is not practical for companies to pursue from an effort, in-field feasibility, and cost perspective. Anything that is deemed as incidental material should be permissible as biomass feedstock, regardless of size. This would be inclusive of larger diameter residues, sawmill residues, and other to-be-defined materials.

One telling example would be the application of woody biomass generated as debris resulting from a natural disaster, such as a hurricane. In Louisiana, roughly 2 million tons of debris are generated per parish due to hurricane damage. Material generated in this quantity, and this quality, are generally destined to be landfilled as a means of disposal/use. From this perspective, the material

is truly “unmerchantable”. However, this hurricane debris - largely felled trees, large limbs and branches, fibrous industrial debris such as wooden planks and sidings from buildings, etc.- would then fall outside the identified diameter limitations currently proposed, limiting a positive utilization option and further impairing the local environment. Based on the current proposed biomass limitations, this hurricane debris would not be viewed as a usable feedstock, despite its utilization in fuel/power production being a greener alternative than the material going to landfill to decompose.

In Fidelis’ experience, a common point of concern amongst stakeholders is the availability and longevity of biomass supply. Focusing narrowly on specific forestry residuals, such as fire mitigation clearings, will restrict the longevity and sustainability of biomass management industries, and pits various regions of the US against one another, rather than focusing on the scientific benefits of biomass management in general. For the bioeconomy to flourish, all available biomass opportunities must be accessible to producers for credit generation including management actions necessary to maintain a healthy ecosystem, such as thinning. It is vital that the legislation considers the economic and environmental benefits of utilizing biomass uniquely to all regions and not through a narrow consideration of biomass impacts specific to certain regions, such as fire management areas. This is important because fire management and mitigation only applies as a main driver for biomass in a few western states while it is not directly applicable for most of the available biomass in the United States.

Louisiana is one of the most prolific managed forestry regions in the world, with roughly 290 million tons per year of pulpwood and forest residuals harvested every year across the entire region. Pulpwood, sometimes referred to as “pre-commercial thinnings” or “secondary residuals”, is a byproduct of prudent forestry management generated in to ensure healthy forest stands and state, local, and private habitat management.

Though there are some market outlets for this material today, the utilization of forestry management byproducts would not result in market distortion for these products. In fact, a market for this material is necessary to continue supporting proper timberland forestry management whereby the historical offtake demand for this material at pulp and papermills is significantly receding. With the closure of the papermills, there currently exists few viable markets for low-grade or waste timber in the Southeast, resulting in an increase of forest biomass thinnings left to decay on the forest floor where it is converted into CO₂ that is released into the atmosphere. Without a healthy market for pulpwood and low-grade fiber in the area, forestry management on hardwood stands would no longer be economically feasible, reducing the ability to properly manage forests. This would result in unhealthy and low-quality timber stands that would take decades to recover, in addition to unmanaged ecosystems that will impair local wildlife. Projects participating in the LCFS program would provide a viable and sustainable market for low-grade hardwood and softwood fiber. This in turn would allow foresters to effectively manage the region’s forest resources. Effective forestry management practice results in positive environmental impacts such as: increased carbon stocks stored in living large older trees and improved habitats for endangered species.

Forestry suppliers would comply with operational integrity requirements, as many of these documentation and planning practices are industry standard today. For example, in Louisiana, a forestry management plan precedes harvests with the express purpose of supporting suspected and known endangered species on the sites. In forestry managed areas, plans are reviewed by biologists, academics, agency staff, and the public (in the case of state-owned land). All forestry management operations are currently documented. This documentation covers all harvest and thinning operations and includes property descriptions, dates of treatment(s), employed contractors, current stand conditions, volumes, and future planned activities. Supporting the low-grade wood market in the region allows forest managers to appropriately maintain forest stand health as well as habitats of endangered species found on the managed properties.

Guided by a life-cycle emissions analysis approach, Fidelis recognizes the climate-positive opportunity to utilize a wide variety of potential biomass sources, including pulpwood, as a renewable fuel feedstock, providing an alternative use for byproduct materials.

Fidelis Supports Scoping Feasible Traceability and Certifiability Procedures

Letters of attestation are an appropriate means of providing feedstock certification that aligns with the 7 priorities identified by CARB in its recent LCFS proposal, as well as appropriately fitting the maturity of the upstream biomass industry.

In terms of establishing a chain of custody for traceability purposes, bills of lading (“BOLs”) are a tool used by multiple sectors today to trace material movements along their supply chains. Whether it be forestry management materials, landfill diversion, ag residues, or other material groups, BOLs provide a means of tracing the supply chain of custody for biomass to be used by BECCS facilities from the point of origin to final user. As a legally binding document, BOLs provide a complete description of shipments and parties involved, including:

- The quantity, value, and weight of the cargo.
- A complete description of items within the cargo, and its freight classification.
- The shipping and receiving parties as well as their signatures and the shipping date.
- Location of origin and destination

By tracking and documenting these components, BOL’s ensure that there is oversight from point of origin to transport vehicle, to staging destination (if applicable) to end-user. In doing so, this document creates a receipt for the products, and generates a traceable supply chain for BECCS facilities.

Depending on the type of biomass material being utilized and the scale of the BECCS facility, the length and structure of the supply chain will vary. BOL’s will allow these variances to be captured. Two examples that help demonstrate this difference are:

- Residues sourced from a local mill and trucked to the BECCS facility.
 - In the case of mill residues and chips, the point of origin would be the mill where the materials were generated as a secondary waste in the milling process and loaded for transit. It is at this point that the residues would become a secondary product eligible as a feedstock for usage under CARB’s LCFS, as well as other programs, given they are a waste stream and were not purposefully generated as a fuel or feedstock.
 - A single BOL would be generated in this instance: at the loading of materials onto a truck at the local mill, to be delivered to the BECCS facility and signed by the receiving personnel on site with specific details around the batch (volume, product, quality, etc.).
 - Because these feedstocks are a processing residue resulting from the production of primary materials such as finished lumber, furniture, pallets, barrels, etc., it is an undue burden upon the mill owner to trace residues upstream of the facility. Furthermore upstream actions were not intended for the utilization or consumption of these residual fibers. Should these fibers not be utilized, mills would landfill the product, leading to CO2 emissions in the decomposition process.
- Pulpwood, and other byproducts and residues, sourced from managed forestry stands.
 - In the case of this example, this could include but would not be limited to: wood fiber of low grade quality and various diameters, material falling within a pulp classification, limbs/tops/slash/bark, or other low-grade material that would be harvested, potentially in-woods chipped, and/or left on the forest floor.
 - In the case of forestry management material, the point of origin would be where this pulpwood and low-grade fiber would be collected, and potentially chipped, and loaded into trucks at the timber stand where the material was harvested as part of established forestry management practices and loaded for transit.

Tracking BOLs from point of origin to the end-user will enable the certifiability of the material utilized for the benefit of BECCS facilities, increasing oversight and transparency across the supply chain.

Fidelis Supports More Aggressive CI Benchmark Carbon Intensities and GHG Targets

We applaud the California Air Resources Board’s efforts to implement more stringent carbon intensity benchmarks to support the continued success of the low carbon fuels standard.

The Low Carbon Fuel Standard has doubled the volume of low carbon fuels over the past ten years, diversified the fuel supply mix in California, and has overperformed compliance targets. This

overwhelming success of the program supports long term aggressive carbon intensity benchmark as well as near term strengthening measures. Fidelis encourages CARB to adopt the compliance targets as modeled in the February workshop of 30% by 2030, 45% 2035, 65% by 2040, and 90% by 2045, along with a one-time step down in 2025 of an incremental 5%. Through these compliance targets, CARB will enable continued investment and development of low carbon fuels and deliver material reductions in transportation emissions.

As noted on the LCFS program dashboard, 35% (4.7 million) of the 13.4 million credits cumulatively banked from the program's inception were generated in the four-quarter period ending in Q3 2022.¹ Based on the rapid accumulation of credits, Fidelis applauds CARB for considering an acceleration mechanism to adjust compliance targets based on the performance of the LCFS market. This acceleration mechanism will ensure market certainty for industry to develop and deploy the required low carbon fuel infrastructure and ensure that emissions are rapidly, but feasibly, reduced to deliver both climate and air quality improvements to Californians. Furthermore, implementing an automatic acceleration mechanism allows the LCFS program to be more dynamic, send a positive market signal to renewable sector investors, and reach its decarbonization targets faster.

Furthermore, Fidelis supports the proposed auto-acceleration structure applied when the trigger criteria have been met (with limitations noted below). As such, all future years of the program schedule should be impacted accordingly. Rather than sending a one-time signal and holding the program at the new target for an additional period (i.e., a "freeze"), we believe that impacting all future years in the program sends a strong and consistent market signal. This will further encourage projects and investments in the decarbonization sector and allow the LCFS program to accelerate its progress towards California's GHG reduction goals.

To maintain an active level of oversight on the program's acceleration, Fidelis supports a limit on the number of consecutive auto-accelerations that can be implemented. Fidelis recommends that CARB be required to provide their approval on a third program auto-acceleration, if both trigger criteria are satisfied and there have been two consecutive prior auto-acceleration periods implemented.

In addition to these future compliance targets, Fidelis supports CARB's consideration of a one-time stepdown in the benchmark carbon intensity near term to address the rapid accumulation of excess credits. Of the 13.4 million credits in the cumulative bank, 4.7 million excess credits were added to the cumulative bank in the four-quarter period ending in Q3 2022. With the average quarterly deficit generation over this period being 5.1 million credits, the credit generation was outpacing deficits by almost an entire quarter of expected deficit generation. Fidelis recommends that CARB implements the proposed 5% stepdown in 2025 to address this growth. This step down will provide market confidence in credit pricing, enabling near term investments required to support the strengthened carbon intensity requirement.

¹Data Source: CARB (February 2023) LCFS Dashboard (<https://ww2.arb.ca.gov/resources/documents/lcfs-data-dashboard>)



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Fidelis Supports Adopting Intrastate Jet Fuel as Deficit Generator

Through the LCFS program, California has been the global leader in the deployment of low carbon fuels. The incentivization of SAF in the Inflation Reduction Act has encouraged significant deployment of SAF facilities and alternative Jet fuel generating credits in the LCFS market since 2019. Fidelis encourages California to continue leading the deployment of alternative jet fuel (SAF) at scale by making conventional Jet Fuel a deficit generating fuel when used on intrastate flights. This amendment will directly incentive the utilization of alternative jet fuel at scale, resulting in decreased greenhouse gas emissions and improved air quality.

Respectfully submitted,

Fidelis New Energy, LLC