



February 19, 2024

California Air Resources Board
1001 I Street
Sacramento, CA 95814

Via Online Submission: <https://ww2.arb.ca.gov/rulemaking/2024/lcfs2024>

Comments on Proposed Changes to the LCFS Regulation

Dear California Air Resources Board (CARB) Low Carbon Fuel Standard Program Staff:

Thank you for the opportunity to provide comments in response to the draft proposed changes to the Low Carbon Fuel Standard (LCFS) and associated Initial Statement of Reasons (ISOR) published on December 19, 2023. We appreciate CARB hosting workshops and soliciting stakeholders' input on a variety of forward-looking concepts for the future of the LCFS. Taking decisive action to bolster the LCFS market will help ensure the long-term viability of the program and the accomplishment of the state's carbon reduction objectives. SkyNRG Americas ("SkyNRG") is pleased to be able to provide comments on several areas of proposed LCFS policy.

Since 2009, SkyNRG has been building sustainable aviation fuel (SAF) production capacity to support the aviation industry's 2050 net-zero commitments. SkyNRG will be among the first producers of SAF and renewable diesel (RD) at scale from cellulosic feedstocks such as biomethane. Together with our existing technology partners, our production process converts biomethane to SAF and RD at an integrated production facility. SkyNRG's plans necessitate withdrawing biogas from common carrier pipelines on a book-and-claim basis, similar to producers of hydrogen, compressed natural gas (CNG), or liquid natural gas (LNG). Beginning in 2019, SkyNRG has invested in the development of dedicated SAF production facilities in the U.S. and Europe to support the aviation industry's transition to SAF from fossil jet fuel. Critically, SAF is one of the few cost-effective and scalable tools for decarbonizing aviation in the near-to medium-term. As such, SAF is one of few viable solutions for mitigating aviation emissions in the foreseeable future.

While aviation emissions currently comprise a relatively small percentage of California's total greenhouse gas (GHG) footprint, its share of the state's emissions inventory will increase through 2035 and beyond as road transportation modes electrify. The aviation sector is one of the most difficult industries to decarbonize due to unique operational and safety requirements that necessitate energy dense-fuels, highlighting the critical role of low carbon liquid fuels for the future of the aviation sector.

SAF is an essential contributor to achieving Governor Newsom's goal of 20% clean fuels for the aviation sector by 2030. However, delaying supportive low carbon policies now will jeopardize the industry's ability to scale SAF production in the timeframe needed to meet the Governor's goal. SAF production facilities can take five to seven years to move from development to operation; consequently, construction of new projects (or expansions of existing facilities) must begin now to enable availability of these solutions by 2030.

Strengthen the 2030+ CI Targets

The LCFS has been extremely successful in encouraging market investment in low carbon fuels and lowering transportation fuel pool emissions in the past decade. To help ensure a healthy LCFS credit

market that can keep pace with these investments, we strongly support CARB's plans to strengthen the existing emission targets for 2030 and beyond. As such, CARB should revise the 2030 compliance target to achieve at least a 35% reduction in GHG emissions for diesel and gasoline and implement more stringent carbon intensity (CI) targets for jet fuel. We encourage CARB to make an appropriate adjustment to reflect the strong market supply scenario to ensure development of novel markets, like SAF.

We support the introduction of an auto-acceleration mechanism (AAM) to strengthen CI reduction targets and respond to growth in the low carbon fuels sector. By recognizing and rewarding overperformance in the program, California benefits from the latest in low carbon fuel technologies. As the rule is currently written, it is essential that the AAM functions properly in tandem with the CI adjustment. Private industry has signaled that it is ready to exceed stated goals well ahead of the established targets. Considering the achievement of 2024 goals in 2022 and strong credit bank builds each quarter, we believe the AAM should not be restricted to an every-other-year frequency. This allows the AAM to respond to market conditions as they emerge rather than potentially two years behind schedule.

CARB Should Expand, Not Restrict, Book-and-Claim Opportunities for Biomethane

As we have stated in previous comments to CARB, expanding opportunities for biomethane to be used as an input for additional transportation fuels such as SAF and RD will be critical to achieving the more stringent targets introduced during previous workshops. The share of LCFS credits generated for biomethane-based fuel, primarily renewable CNG, has steadily grown over the last decade thanks in large measure to the ultra-low CI scores attainable for feedstocks such as dairy and livestock wastes. This trend may be unsustainable long-term, however, if biomethane opportunities are not encouraged beyond their current applications due to the limited scale of on-road heavy duty natural gas vehicle (NGV) fleets. Existing LCFS regulations heavily incentivize the use of biomethane in renewable CNG and LNG applications, and for renewable hydrogen production, by offering the flexibility of indirect accounting of biomethane injected into pipeline systems connected, sometimes at great distance, to downstream production or dispensing locations (referred to as "book-and-claim"). This is a highly effective way to rapidly decarbonize transportation fuels, and we encourage this to be expanded to SAF and RD as it has been applied to other transportation fuel end uses like, hydrogen, CNG and LNG.

The U.S. biomethane industry has evolved with existing regulatory programs at both the federal and state levels that reasonably recognize that most sources of biomethane do not justify co-location of fuel production. To accommodate this challenge, book-and-claim accounting is an indispensable ingredient to incentivizing the development of biomethane resources and unlocking their emission reduction potential to materially reduce emissions.

Under the current regulations, SkyNRG (and others) would be unable to participate in the expansion of biomethane resources because there are no provisions allowing book-and-claim accounting for offsite biomethane utilized as feedstock to produce SAF and RD. We are discouraged that CARB introduced deliverability requirements for biomethane that restrict availability of this valuable feedstock, rather than expanding its availability. Geographic and deliverability limitations would almost certainly stifle investment in biomethane resources and reduce opportunities for the state to achieve its LCFS-specific climate goals. Respectfully, we believe that CARB's stated goal to harmonize book-and-claim policies for low-CI electricity and biomethane limits growth because it fails to recognize the fundamental difference of biomethane as a feedstock.

Additionally, we take issue with the Renewables Portfolio Standard (RPS) deliverability requirements that are specific to electricity generation. In the proposed rule and accompanying ISOR, CARB staff explains intentions to align deliverability of biomethane in the LCFS with the California Energy Commission's (CEC) RPS by requiring common carrier pipelines to physically flow toward California 50% of the time on an annual basis. Considering the RPS requirements are specific to electricity generation, we take issue with relying on this standard for biomethane as a transportation fuel or feedstock. Given the variety of uses of this valuable low-CI feedstock, the RPS alignment is limiting the potential for biomethane to reduce CI of other hard-to-decarbonize sectors, like aviation. Considering the goal of growing SAF's share of California's aviation fuel supply, these unique characteristics need to be considered. By allowing the book-and-claim of biomethane feedstocks, CARB ensures a steady supply of SAF to meet its programmatic goals. Electricity and SAF do not compete for the same investments, resources, or customers. Neither is advantaged over the other under the current regulatory regime, so harmonizing requirements would at best be an unnecessary change, and at worst, it could severely disrupt both existing and future investments.

Earlier this year, the U.S. Environmental Protection Agency (EPA) recognized the potential for biomethane as a feedstock in the production of renewable fuels. In its 2023 rulemaking, the EPA established a regulatory framework allowing the use of biomethane as a "biointermediate," paving the way for producers like SkyNRG to make renewable, low carbon fuels like SAF and RD from products derived from biomethane under book-and-claim accounting (once finalized). Critically, the EPA's regime leverages indirect accounting of pipeline injection and offtake at separate points consistent with LCFS book-and-claim procedures. In CARB's ISOR for the proposed rule change, the need to align with federal support for SAF proliferation is specifically highlighted as a guiding principle of the rule change. The LCFS program has long been compatible with federal incentives, including the Renewable Fuel Standard (RFS) and numerous tax credits. The creation of additional federal incentives through the Inflation Reduction Act (IRA) and Infrastructure Investment and Jobs Act (IIJA) only increases the opportunity for the LCFS program to align with and leverage federal investments to accelerate decarbonization. While the SAF market is growing, these incentives are greatly needed and have outsized impacts in supporting the industry's maturation. CARB should ensure that the LCFS program aligns with the treatment of SAF feedstocks under the RFS to avoid creating a bifurcated RNG market.

In summary, we implore CARB to expand eligibility for book-and-claim of all sources of biomethane as feedstock to produce transportation fuels like SAF and RD. Doing so will create new opportunities to utilize biomethane to make low, or even negative, CI transportation fuels that are suitable for sectors that are hard to decarbonize. This will directly contribute to Governor Newsom's ambitious goals for expanded production and use of low carbon, renewable aviation fuels. With appropriate oversight (including the verification and validation procedures CARB already requires), we believe that any compliance risks can be effectively managed as they are today for CNG, LNG, and hydrogen production. By recognizing the potential of RNG as an SAF and RD feedstock, CARB acknowledges its strong value to a maturing industry and instills confidence in investment communities. Failing to expand book-and-claim eligibility for biomethane feedstocks is a critical issue that may significantly negate California's ability to benefit from the next generation of low carbon fuels.

Further Study on Changes to Avoided Methane Emissions Credits is Necessary

As SkyNRG works to build SAF production capacity, the company will continue to explore a wide range of biomethane feedstock opportunities from organic waste streams, including food waste, yard and

landscaping waste, industrial and wastewater sludge, and a variety of animal wastes. Many untapped waste streams are novel as it relates to LCFS pathways, but nonetheless can readily be converted to transportation fuels through technologies that are commercially proven and readily suitable for producing low carbon fuels from biomethane pathways.

CARB should encourage the capture and productive repurposing of emissions from organic waste streams processed through anaerobic digestion, regardless of the source of the waste stream. To this end, CARB should avoid making changes in the present amendments that limit opportunities to include avoided emissions in CI calculations. We do not believe that a premature sunset is appropriate in achieving LCFS success. Therefore, we believe that this warrants further study from CARB to avoid any unnecessary consequences as currently proposed.

The GHG emission reductions resulting from CNG fleets being the default for many medium- and heavy-duty applications are attributed, in part, to the incentives of the LCFS and has resulted in improved air quality for constituents. SAF is at a similar crossroads. By allowing for avoided methane crediting for biomethane as a feedstock, CARB has the potential to see SAF become the default fuel for aviation, much like the transition in the CNG fleet space. Biomethane has continued potential to reduce GHG emissions in California, and recognizing its potential as a feedstock is essential to the continued success of the program.

We further implore CARB to study the success of Europe's Renewable Energy Directive (RED), which has long recognized the avoided methane benefits when assessing the lifecycle CI of various RNG pathways. The RNG to SAF pathway presents a unique opportunity to scale-up low carbon fuels in the aviation sector to align with California's recently stated goals of obligating jet fuel within the LCFS.

Fossil Jet Participation in LCFS

Inclusion of fossil jet in the LCFS is a first step in recognizing the impact of aviation on the state's GHG emissions and the benefits of SAF for the state's climate ambitions. Given current technologies and feedstocks, SAF represents a major opportunity to decarbonize this hard-to-abate sector. With the encouraging language in the proposed rule, SkyNRG further encourages CARB to expand the scope of fossil jet regulation to include interstate flights.

Current regulations under the LCFS are already regulating interstate fossil fuel for on-road vehicles refueling in California before leaving the state. It was through this scheme that the state has benefited from immense growth in liquid fuel innovation and the current boom in RD production and end use. This major paradigm shift in fuel technology was due in part to visionary leadership by CARB staff. By expanding the scope of fossil jet regulation in the LCFS, the state could further benefit from similar growth in the SAF sector. Furthermore, by regulating all fossil jet fuel uplifted in California, CARB would benefit from a streamlined regulatory process and reduced risk of legal challenge.

Additionally, we support accelerating the obligation to 2025 instead of 2028. CARB states that the proposal to delay the elimination of the exemption for fossil fuel jet fuel until 2028 is meant to provide "sufficient time for potential producers of alternative jet fuel to add capacity for the anticipated increased demand of alternative jet fuel." However, such a delay is unnecessary, and we urge CARB to consider an earlier implementation date. We note that British Columbia has already added an obligation for all fossil jet fuel beginning in 2026, coupled with a volumetric SAF mandate beginning in 2028. Given that CARB is only proposing an obligation for jet fuel and not an actual SAF requirement, consistent with

the LCFS, there is technically no need for lead time to increase SAF production capacity because the structure of the LCFS program allows for compliance via credits generated outside of aviation, credits which are readily available today. In addition, CARB has already provided a five-year window for growth since making SAF an opt-in credit generator in 2019, during which time SAF volumes recorded under the LCFS have increased five-fold, despite a global pandemic and the continued regulatory disadvantages for SAF producers under both the LCFS and the Cap-and-Trade program. Nevertheless, SAF continues to lag far behind similar ground transportation fuels under the LCFS. This gap should not be misinterpreted as a signal that the SAF market or SAF technologies are insufficiently mature to support an obligation for aviation, but rather should serve as evidence that the lack of an LCFS obligation for aviation has steered producers toward more lucrative opportunities serving road transportation.

Thank you for the opportunity to comment on the proposed changes to the LCFS. SkyNRG applauds CARB staff for taking action to drive innovation and growth of low carbon fuel technologies. Through careful consideration of impacts of this rule change to a developing industry, we believe SAF can take the LCFS to new heights. We look forward to continuing the legacy of emissions reductions spurred on by this groundbreaking regulation.

Sincerely,

A handwritten signature in blue ink, appearing to read 'John Plaza'.

John Plaza
President & CEO
SkyNRG Americas, Inc.