

February 20, 2024

California Air Resources Board
1001 I Street
Sacramento, CA 95814

Submitted Electronically via <https://ww2.arb.ca.gov/lispub/comm/bclist.php>

Re: Proposed Low Carbon Fuel Standard Amendments

Dear Board Members,

As a broad coalition of clean fuel producers committed to building a robust alternative jet fuel industry and decarbonizing aviation, we appreciate the opportunity to comment on the proposed changes to the California Low Carbon Fuel Standard (LCFS). We strongly support the CA LCFS program and applaud CARB's proposal to better align the program with the bold vision outlined in the 2022 Scoping Plan Update. Here, we comment specifically to express our strong support for CARB's proposal to eliminate the exemption for intrastate fossil jet fuel use under the LCFS, which is a critical step to enhance the market signal for sustainable aviation fuel (SAF).

Our organizations recognize and appreciate the state's continued leadership in the adoption of clean fuels in the aviation sector—one of the most difficult to decarbonize. In the 2018 LCFS rulemaking, CARB initiated inclusion of SAF in the program on an opt-in, credit-generating basis, which has since been replicated in other LCFS jurisdictions.¹ Unfortunately, while a helpful first step in providing some value for SAF under the LCFS, a stronger market signal is needed. The slow uptake of SAF in California can be traced, in part, to state regulatory rules, including the lack of an obligation on fossil jet fuel under the LCFS.²

California has rightfully set ambitious targets for aviation and for SAF specifically: Governor Newsom recently called for 20% clean fuels adoption in the aviation sector,³ the state legislature has estimated a need for at least 1.5 billion gallons of SAF blending by 2030,⁴ and the 2022 CARB Scoping Plan states that 80% of all aviation fuel demand will need to come from SAF by 2045.⁵ Given California's aggressive goals in the aviation sector and its recognition in the proposal that the LCFS should actively encourage transitioning the use of low carbon fuels to hard-to-decarbonize sectors in the coming decades, we urge CARB to better align the aviation provisions with the ambition that will be needed to achieve the state's goals.

Accordingly, we ask that CARB significantly strengthen the signal for SAF in the proposal provisions that would impact the aviation sector. Specifically, we suggest that CARB consider the following revisions to the proposal:

1. Include all fossil jet fuel as a deficit generator under the LCFS.
2. Accelerate the obligation to begin in 2025, rather than 2028.

¹ Both [Oregon Clean Fuels Program](#) and [Washington Clean Fuels Standard](#) currently exempt fossil jet fuel from generating deficits and allow SAF to generate credits on an opt-in basis.

² See Bay Area Air Quality Management District, Sustainable Aviation Fuel: Greenhouse Gas Reductions from Bay Area Commercial Aircraft (October 2020) available at <https://www.baaqmd.gov/news-and-events/page-resources/2020-news/121120-saf-report>. See also <https://stillwaterassociates.com/saf-in-the-ira-era-how-do-the-incentives-stack-up/>.

³ See California Office of the Governor, Governor's Letter to Chair Randolph. July 22, 2022. <https://www.gov.ca.gov/wp-content/uploads/2022/07/07.22.2022-Governors-Letter-to-CARB.pdf?emrc=1054d6>

⁴ See AB1322 (Rivas) available at https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB1322. AB 1322 was passed by the California assembly in 2022 and later vetoed by Governor Newsom, who, in his veto letter, supported the legislature's intent with the bill and ordered CARB to develop a "plan to reduce greenhouse gas emissions through the production and use of sustainable aviation fuels by July 1, 2024". Governor Newsom's veto letter available at <https://www.gov.ca.gov/wp-content/uploads/2022/09/AB-1322-VETO.pdf?emrc=7598b6>

⁵ See CARB, 2022 Scoping Plan for Achieving Carbon Neutrality. December 2022. https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf. Page 73. The Scoping Plan scenario envisions 20% of aviation fuel demand met by electricity (batteries) or hydrogen (fuel cells) in 2045, with sustainable aviation fuel meeting the remaining 80%.

3. Allow for book-and-claim accounting of low-CI electricity and RNG for SAF production, a regulatory approach that is already in place for electric vehicle charging.
4. Utilize the LCFS to encourage long term adoption of SAF in the aviation sector by adopting provisions that will help realize the additional air quality and climate benefits SAF can provide the state, including by developing mechanisms to credit the non-CO₂ climate benefits of SAF.
5. Finally, we offer new legal analysis, attached, to show that California enjoys ample authority to obligate all jet fuel uplifted in California, in line with its treatment of other transportation fuels⁶

Please see our detailed comments and rationale for each below.

1. Include all jet fuel as a deficit generator under the LCFS.

The current proposal to remove the exemption only for intrastate jet fuel is an important step in the right direction but is far from sufficient to meet state goals for the aviation sector. Removing the exemption for intrastate jet fuel SAF will help by partially eliminating the LCFS rack fee benefit that currently applies to replacements for obligated fuels but not for SAF, thereby increasing the market signal for SAF production.⁷ However, an obligation on roughly 10% of the jet fuel pool cannot be expected to close the gap between current uptake and the state's goals. Indeed, CARB's own modeling suggests that SAF blending could reach about 100 million gallons in 2030 and about 200 million in 2045 as a result of the current proposal.⁸ While these volumes represent encouraging growth from today's volumes, they still fall far short of state goals, which would require roughly 800 million gallons of SAF to meet Gov. Newsom's 20% clean fuels adoption target, 1.5 billion gallons in 2030 to meet the AB 1322 goal, and 3.2 billion gallons by 2045 to meet the 2022 Scoping Plan target. As noted by the International Council on Clean Transportation (ICCT), obligating only intrastate jet fuel would have "a minimal impact on the program due to the small size of this fuel pool and would fail to meaningfully promote aviation decarbonization."⁹

To boost the impact of the aviation provisions and put California on a path to achieving its aviation decarbonization goals, we encourage CARB to remove the exemption for all jet fuel uplifted in California. While anything that closes the incentive gap under the LCFS between jet and diesel substitutes (including obligating only a portion of jet fuel as proposed) will be directionally helpful in increasing SAF supply by reducing the opportunity cost for producers who choose to make SAF, obligating all jet fuel uplifted in CA will have a much more significant impact in sending an investment signal for SAF and driving SAF use in the state.

If CARB maintains a focus on obligating only intrastate jet fuel use, we suggest that CARB obligate all jet fuel combusted in California, as outlined in the September 20, 2023 Board meeting, when CARB staff stated that intrastate jet fuel would include not only flights within California, but also the portion of jet fuel combusted in California from other flights that start or end in California. Such a provision need not be overly precise or require direct regulation of or reporting from aircraft operators. Rather, existing data and tools could be used to develop a rough estimation of intrastate fuel use.¹⁰

⁶ See Attachment to our comments (Attachment_Legal Analysis_CARB LCFS Authority to Obligate Jet Fuel.pdf)

⁷ SAF credit generation under the LCFS has consistently been less than 1% of credit generation for very similar renewable diesel. This is in part because of regulatory disincentives to SAF, such the LCFS rack fee and the state Cap-at-the-Rack cost under the Cap-and-Trade program, both of which increase the cost of fossil diesel, and the federal RFS program which awards 1.7 RINs per gallon of renewable diesel compared to just 1.6 per gallon of SAF. While the total size of the incentive gap varies, the BAAQMD analysis estimated it in 2020 at about \$0.42 per gallon advantage for producing renewable diesel versus SAF, of which the LCFS represented about \$0.14. An obligation only on intrastate jet fuel—a small fraction of the total pool—would reduce the LCFS disparity only marginally. New federal incentives under the Inflation Reduction Act, such as the SAF Blender's Tax Credit (40B) and the Clean Fuels Production Credit (45Z) can in theory make up much of that difference, but given that those expire in 2025 and 2027, respectively, they do not send a robust investment signal for needed SAF production. See CA LCFS Data Dashboard, Figure 2 at <https://ww2.arb.ca.gov/resources/documents/lcfs-data-dashboard>; See also Bay Area Air Quality Management District (BAAQMD), Sustainable Aviation Fuel: Greenhouse Gas Reductions from Bay Area Commercial Aircraft. October 2020. available at <https://www.baaqmd.gov/news-and-events/page-resources/2020-news/121120-saf-report>.

⁸ CARB, Appendix C-1 Standardized Regulatory Impact Assessment, September 2023. <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2024/lcfs2024/appc-1.pdf>. Figure 4, page 18.

⁹ Stephanie Searle, International Council on Clean Transportation Comments on the November 2022 LCFS Workshop. December 21, 2022. <https://www.arb.ca.gov/lists/com-attach/84-lcfs-wkshp-nov22-ws-B2lQOVAnVVkEMAc3.pdf>.

¹⁰ See Graver, Rutherford, and Zheng, CO₂ Emissions from Commercial Aviation. ICCT, 2020. <https://theicct.org/wp-content/uploads/2021/06/CO2-commercial-aviation-oct2020.pdf>. The methods used by Graver et al. could be extended with a simple additional calculation to attribute fuel burn from either takeoff or landing (whichever occurs in California) plus a fraction of the cruising fuel burn equal to the fraction of the route's distance that lies within the state.

2. Accelerate the obligation to begin in 2025, rather than 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”¹¹ 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 2028.¹² In addition, the proposal trails the ambition of both the ReFuel EU SAF mandate beginning in 2025 as well as the recently announced SAF mandate in Singapore beginning in 2026.¹³

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.¹⁴ 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.¹⁵ 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.¹⁶

In any event, our organizations are confident that there will be enough production capacity to meet demand beginning in 2025. In the last year alone, global SAF capacity has increased by over 300 million gallons from a single producer and the International Air Transport Association estimates 2024 SAF production to triple to over 500 million gallons, or 1.5 million metric tonnes.¹⁷ In the U.S., SAF production capacity has expanded by at least 70 million gallons, with new facilities including LanzaJet’s Freedom Pine Fuels¹⁸ and Montana Renewables Great Falls plant¹⁹ coming online. Additional expansions are in the pipeline, including concrete, near-term plans for expansions from Diamond Green Diesel,²⁰ Montana Renewables,²¹ and California’s own World Energy.²² Most importantly, there are roughly 3 billion gallons of renewable diesel consumed in the U.S. each year, 80% of which is produced domestically,²³ and half of which could easily be transitioned to SAF production—where it would produce additional benefits to both climate and local air quality— if additional policy incentives were put in place under the LCFS to level the playing field for SAF. In sum, there is sufficient SAF production capacity and CARB need only send an appropriate market signal.

¹¹ See CARB, Appendix E: Purpose and Rationale for Low Carbon Fuel Standards Amendments. January 2, 2024.

https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2024/lcfs2024/lcfs_appe.pdf. Page 12.

¹² See https://www.bclaws.gov.bc.ca/civix/document/id/oic/cur/0699_2023.

¹³ See <https://www.consilium.europa.eu/en/press/press-releases/2023/10/09/refueu-aviation-initiative-council-adopts-new-law-to-decarbonise-the-aviation-sector>; See also <https://www.reuters.com/sustainability/singapore-require-departing-flights-use-sustainable-fuel-2026-2024-02-19/>.

¹⁴ As further detailed in Section 5 below, the ability to comply by means other than SAF further demonstrates that CA is not preempted from obligating jet fuel under the LCFS.

¹⁵ See CA LCFS Data Dashboard, Figure 2 at <https://ww2.arb.ca.gov/resources/documents/lcfs-data-dashboard>

¹⁶ On regulatory disincentives, see footnote 8. On technology and market maturity, several SAF pathways have already been commercialized. A total of 8 pathways for SAF production have been approved under ASTM 7566, and 3 additional coprocessing pathways have been approved under ASTM D1655. See https://www.caaafi.org/focus_areas/fuel_qualification.html.

¹⁷ See <https://www.neste.com/products-and-innovation/sustainable-aviation/questions-and-answers-about-saf> ; <https://www.iata.org/en/pressroom/2023-releases/2023-12-06-02/>

¹⁸ See <https://www.prnewswire.com/news-releases/lanzajet-celebrates-grand-opening-of-the-worlds-first-ethanol-to-sustainable-aviation-fuel-production-facility-302052431.html>.

¹⁹ See <https://www.prnewswire.com/news-releases/montana-renewables-begins-sustainable-aviation-fuel-deliveries-to-shell-301820679.html>.

²⁰ See <https://worldbiomarketinsights.com/valero-energy-and-darling-ingredients-on-time-with-saf-plant-in-texas/#:~:text=Valero%20Energy%20and%20Darling%20Ingredients%20on%20time%20with%20SAF%20plant%20in%20Texas,-by%20Daniela%20Castim&text=Valero%20Energy%20and%20Darling%20Ingredients%20have%20announced%20that%20their%20joint,the%20first%20quarter%20of%202025>.

²¹ See <https://www.ogj.com/energy-transition/article/14296189/calumet-provides-operational-update-on-montana-renewables-great-falls-plant>.

²² See <https://www.prnewswire.com/news-releases/world-energy-secures-permits-will-completely-convert-its-southern-calif-refinery-to-create-north-americas-largest-worlds-most-advanced-sustainable-aviation-fuel-hub-301531135.html>.

²³ See <https://ethanolproducer.com/articles/epa-2375-billion-rins-generated-in-2023>. RIN data, which measure consumption of renewable diesel, underestimate domestic production capacity because a fraction of domestically produced fuels are exported.

We urge CARB to maintain its role as a leader in LCFS policy by accelerating its fossil jet fuel obligation to 2025.

3. Allow for book-and-claim accounting of low-CI electricity and RNG for SAF production.

We are supportive of the existing policy to allow book-and-claim accounting for low-CI electricity and RNG inputs to the production of low-CI hydrogen, and we applaud CARB's proposal to expand access through the use of power purchase agreements (PPAs) for low-CI electricity. However, we strongly believe that the same access should be expanded to SAF. At minimum, we urge CARB not to eliminate the existing allowance for indirect accounting for low-CI electricity to produce hydrogen that is used in the production of fuels, including SAF.

CARB's arguments for providing additional flexibility to low-CI hydrogen when directly used as a transportation fuel apply equally to SAF. Both low-CI hydrogen and SAF are young technologies with nascent markets that displace hard-to-electrify end uses like powering aircraft. The 2022 CARB Scoping Plan calls for significant growth in the use of both and, in the aviation sector, envisions even greater growth for SAF—from less than 1% of jet fuel consumption today to 80% in 2045.²⁴

Despite these parallels, current and proposed LCFS rules for indirect accounting of low-CI energy systematically disadvantage SAF relative to hydrogen. Hydrogen producers have access to emissions reductions from process energy—low-CI electricity and RNG—that SAF cannot access. This is counter to state goals for SAF uptake and aviation decarbonization. We urge CARB to promote equity between future fuels like SAF and hydrogen and allow indirect accounting of RNG and low-CI electricity—both as a direct input to SAF and as an input to hydrogen for use in SAF.

4. Utilize the LCFS to encourage long term adoption of SAF by adopting provisions that will help realize the additional air quality and climate benefits SAF can provide the state, including by developing mechanisms to credit the non-CO2 climate benefits of SAF.

We applaud CARB for thinking dynamically about alternative fuels and their impacts on climate, environment, and society. We urge CARB to acknowledge the additional, uncounted positive externalities that come from substituting fossil jet fuel with SAF and consider ways to better account for them under the LCFS.

First, while both light and medium/heavy-duty transportation are expected to electrify over the coming decades (although on different timetables), aviation will take much longer to transition to decarbonize, and SAF is expected to be the chief decarbonization lever for the foreseeable futures. The 2022 Scoping Plan scenario envisions 100% sales of zero emissions vehicles for light duty transport by 2035 and for medium/heavy duty transport by 2040, but for aviation sees only 20% alternative propulsion by 2045.²⁵

Second, SAF provides additional air quality benefits that have not been fully considered by CARB. CARB notes that the current proposal would result in reductions in oxides of nitrogen (NO_x) and fine particulate matter (PM 2.5).²⁶ In addition, a recent synthesis of emissions measurement campaigns by the Airport Cooperative Research Program (ACRP), administered by the Transport Research Board of the U.S. National Academies of Sciences, found that a 50% SAF blend could reduce by nearly 40% oxides of sulfur,²⁷ which are known to have significant negative effects on exposed populations, and which are present in greater proportions in fossil jet fuel than other transportation fuels like diesel. Additionally, other studies have found greater reductions in PM than the 55% cited in the SRIA. The ACRP study found PM reductions of

²⁴ See CARB, 2022 Scoping Plan for Achieving Carbon Neutrality. December 2022. https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf. Page 73.

²⁵ See CARB, 2022 Scoping Plan for Achieving Carbon Neutrality. December 2022. https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf. Page 72-73.

²⁶ See CARB, Staff Report: Initial Statement of Reasons (ISOR). December 19, 2023. <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2024/lcfs2024/isor.pdf>. Page 57.

²⁷ Airport Cooperative Research Program, Alternative Jet Fuels Emissions Quantification Methods Creation and Validation Report. August 2019. Page 10. Available at <http://www.trb.org/Publications/Blurbs/179509.aspx>

up to 65%, and a more recent measurement campaign found that SAF produced via the alcohol-to-jet pathway could reduce non-volatile particulate matter by up to 97%.²⁸

Third, California’s environmental justice communities have explicitly asked CARB to support displacement of fossil jet fuel with SAF, both in the formal recommendations to CARB of the Environmental Justice Advisory Committee²⁹ and in person, at the September 28th, 2023 Board meeting. Communities that live near and work at airports are some of the most vulnerable in California — of the ten busiest airports in the state, four are located within SB 535 designated disadvantaged communities, and another four are immediately adjacent.³⁰ These communities have long borne the disproportionate health impacts of unmitigated fossil jet fuel combustion.

Fourth, jet fuel causes unique contributions to global climate change that are unrecognized by the LCFS— harms that SAF can mitigate. Emerging research indicates that particulate matter reductions from SAF reduce aviation’s non-CO₂ climate impact, specifically the climate forcing from “contrail cirrus” impacts (the combined warming from contrails and contrail-induced cirrus). The current best estimate from the most recent comprehensive study is that the climate impact from contrail cirrus is nearly twice the impact from CO₂.³¹ Even the low end of current estimates—which show that contrail cirrus causes roughly half the total warming of CO₂— warrants consideration of potential mitigation opportunities from SAF.³² One recent study cited found that a 50% SAF blend could reduce contrail cirrus climate impacts by over 20%. An eventual shift to 100% SAF could reduce the climate impact of contrail cirrus by 50%.³³ While continued scientific uncertainty around the size of the non-CO₂ climate impacts makes them difficult to precisely quantify, the direction of those impacts—less warming when SAF is used—is known.

We strongly believe that these additional benefits—which align closely with state goals and priorities and accrue only to SAF—justify action by CARB to prioritize the use of SAF. And as CARB has noted, transitioning fuels to other sectors in the long term requires that market signals transition first.³⁴ Under the current proposal, the market signal improves marginally, but is not likely to be enough to meet the state’s goals. Accordingly, we encourage CARB to consider additional measures to credit those benefits. For example, CARB should consider applying a credit multiplier for SAF on the basis of the most conservative estimates of non-CO₂ climate benefits of SAF. (The European RED II program, currently provides a multiplier of 1.2x for SAF.) Alternatively, CARB might develop a “CO₂ equivalent” metric to account for these benefits in terms of carbon intensity and incorporate them into the CA-GREET model, as has been suggested by the European Commission in its recent study on how to address the non-CO₂ climate impacts of aviation.³⁵

²⁸ Tran, Brown and Olfert. Comparison of Particle Number Emissions from In-Flight Aircraft Fueled with Jet A1, JP-5 and an Alcohol-to-Jet Fuel Blend. *Energy Fuels* 34, 6, 7218–7222 (2020). <https://doi.org/10.1021/acs.energyfuels.0c00260>.

²⁹ See AB 32 EJAC DRAFT Recommendations to the CARB on the Low Carbon Fuel Standard Regulation Updates. August 24, 2023. <https://ww2.arb.ca.gov/sites/default/files/2023-08/EJAC%20Low%20Carbon%20Fuel%20Standard%20Recommendations%20Version%201%20082423.pdf> and EJAC, Environmental Justice Advisory Committee 2022 Scoping Plan Recommendations: NF54. Page 16. September 30, 2022. <https://ww2.arb.ca.gov/sites/default/files/barcu/board/books/2022/090122/finalejacreps.pdf>.

³⁰ See <https://oehha.ca.gov/calenviroscreen/sb535>. LAX, OAK, BUR, and ONT are within disadvantaged communities. SFO, SMF, SNA, and LGB are adjacent.

³¹ D.S. Lee, et al. The contribution of global aviation to anthropogenic climate forcing for 2000 to 2018. *Atmospheric Environment* 244, 117834 (2021). <https://doi.org/10.1016/j.atmosenv.2020.117834>.

³² *Id.*

³³ See European Union Aviation Safety Agency, Updated Analysis of the non-CO₂ Climate Impacts of Aviation and the Potential Policy Measures Pursuant to EU Emissions Trading System Directive Article 30(4) (synthesizing research on SAF non-CO₂ climate benefits and suggesting further consideration of SAF policy measures to mitigate aviation climate impacts); available at https://www.easa.europa.eu/sites/default/files/dfu/201119_report_com_ep_council_updated_analysis_non_co2_climate_impact_s_aviation.pdf.

³⁴ See CARB, Staff Report: Initial Statement of Reasons (ISOR). December 19, 2023. <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2024/lcfs2024/isor.pdf>. Page 30.

³⁵ See European Union Aviation Safety Agency, Updated Analysis of the non-CO₂ Climate Impacts of Aviation and the Potential Policy Measures Pursuant to EU Emissions Trading System Directive Article 30(4) (synthesizing research on SAF non-CO₂ climate benefits and suggesting further consideration of SAF policy measures to mitigate aviation climate impacts); available at https://www.easa.europa.eu/sites/default/files/dfu/201119_report_com_ep_council_updated_analysis_non_co2_climate_impact_s_aviation.pdf.

5. California Enjoys Ample Authority to Obligate All Jet Fuel Uplifted in CA

While some stakeholders have long asserted that CARB does not have legal authority to include jet fuel as an obligated fuel due to unarticulated claims of federal preemption in the sector, this claim has to date not been addressed on the merits and we hope this proposal catalyzes more detailed understanding among stakeholders of the scope of CARB's authority over aviation. As further outlined in the attached legal analysis and summarized below, it is clear that CARB enjoys ample authority to obligate both intrastate and all jet fuel uplifted in California (interstate and international) under the LCFS program.³⁶ None of the statutes that have been cited by stakeholders—the Clean Air Act, the Federal Aviation Act, or the Airline Deregulation Act, serve as a source of preemption or a barrier to CARB promulgating an aviation obligation that is commensurate with the state's goals in the aviation sector.

Here, we address each of those statutes in turn.

a) Clean Air Act

The Clean Air Act does not preempt an obligation on jet fuel under the CA LCFS, whether applied to intrastate jet fuel use or to all fossil jet fuel uplifted in the state. Importantly, courts analyzing preemption are “highly deferential to state law in areas traditionally regulated by the states” such as air pollution prevention and related public health measures.³⁷

While Section 233 of the Clean Air Act does give EPA explicit preemptive authority on the regulation of emissions **from aircraft engines**, this provision is simply not relevant to the regulation of fuels.³⁸ Notably, the Ninth Circuit interprets the preemptive scope to cover only regulation of aircraft or aircraft engines, and has not extended preemption beyond that scope to include the regulation of jet fuel.³⁹ Indeed, a reading that Section 233 preempts regulation of jet fuel would be contrary to the plain meaning of the statute, the structure of the Clean Air Act, and EPA's longstanding interpretation of its authority over aviation. By its terms, section 233 refers to engine and aircraft standards promulgated under Section 231, not to fuel standards. And the underlying structure of the Clean Air Act certainly distinguishes between engine and fuel standards, with separate provisions for engine/vehicle standards under Sections 202 (on road vehicles/engines), 213 (nonroad vehicles/engines) and Section 211 (fuels for use in on road and nonroad vehicles/engines). To read Section 233's preemption provisions as somehow applying to aircraft fuels would be wholly inconsistent with this statutory structure.

Such an interpretation would also be inconsistent with EPA's long-held interpretation of its authority as extending only to aircraft/engine standards, with the Federal Aviation Administration (FAA) then having authority to promulgate fuel standards for any pollutant for which EPA has made an endangerment finding under Section 231 of the Clean Air Act.⁴⁰ Indeed, just last year the EPA reiterated this position, noting in its final endangerment finding for leaded aircraft fuels that EPA's only role was to make an endangerment finding and promulgate an engine standard for lead. Aviation fuel standards, EPA reiterated, were left to FAA.⁴¹ Simply put, the Clean Air Act cannot preempt California from issuing fuel standards for aviation that EPA itself lacks the authority to issue.

³⁶ We note that, in the Canadian context, British Columbia has determined that any jet fuel sold in the province is subject to provincial regulation.

³⁷ 14 Exxon Mobil Corp. v. United States EPA, 217 F.3d 1246, 1255 (9th Cir. 2000).

³⁸ See 42 U.S.C. § 7573 (stating that “No State or political subdivision thereof may adopt or attempt to enforce any standard respecting emissions of any air pollutant from any aircraft or engine thereof unless such standard is identical to a standard applicable to such aircraft under this part.”)

³⁹ See *California v. Department of Navy*, 624 F.2d 885, 888 (9th Cir. 1980); *California ex rel. State Air Resources Bd. v. Department of Navy*, 431 F. Supp. 1271, 1285 (N.D. Cal. 1977) (narrowly interpreting the “field” regulated as the “structure or performance of aircraft engines”).

⁴⁰ See EPA, Advance Notice of Proposed Rulemaking on Lead emissions From Piston-Engine Aircraft Using Leaded Aviation Gasoline, 75 Fed. Reg. 22445-22446 (April 28, 2010) (explaining in EPA rulemaking that although EPA has authority under the Clean Air Act to regulate fuels used in motor vehicles and nonroad vehicles, fuels used exclusively in aircraft engines are regulated by FAA); see also EPA, Advance Notice of Proposed Rulemaking on Regulating Greenhouse Gas Emissions Under the Clean Air Act, 73 Fed. Reg. 44434 (July 30, 2008) (“Section 211(c) authorizes regulation of vehicle fuels and fuel additives (excluding aircraft fuel)...”).

⁴¹ See EPA, Finding That Lead Emissions From Aircraft Engines That Operate on Leaded Fuel Cause or Contribute to Air Pollution That May Reasonably Be Anticipated To Endanger Public Health and Welfare, 88 Fed. Reg. 72372-72404 (October 20, 2023). (EPA states, “pursuant to 49 U.S.C. 44714, the FAA has a statutory mandate to prescribe standards for the composition or chemical or physical properties of an aircraft fuel or fuel additive to control or eliminate aircraft emissions which the EPA has found endanger public health or welfare under section 231(a) of the Clean Air Act.”)

Further, even if EPA theoretically had authority to regulate jet fuel, the proposal does not run afoul of the preemption provisions under Section 233 of the Clean Air Act because the LCFS is not an “emission standard” applicable to aircraft and aircraft engines. Under the U.S. Supreme Court’s definition of emission standard, the LCFS is not an emission standard because it does not restrict how much of a given pollutant an engine may emit, it does not require equipment of a certain pollution control device, or mandate emission control design features.⁴² Further, as reinforced in a recent order from the U.S. District Court for the Central District of California, the LCFS is not an aviation emission standard because regulated entities (fuel suppliers) can comply by taking action unrelated to the purchase of SAF and the LCFS does not serve as an attempt to compel the purchase of SAF.⁴³

b) Federal Aviation Act

The Federal Aviation Act grants broad authority to the FAA that has been generally held to “preempt the field” of aviation safety and airspace management.⁴⁴ However, the preemptive scope of the FAA Act is not limitless, and courts have determined that states may still regulate certain aspects of aviation operations that do not directly intrude on the FAA’s domain.⁴⁵ With respect to fuels, the FAA’s domain includes both the general authority to approve aviation fuels⁴⁶ and the specific statutory authority, under Section 44714⁴⁷, to prescribe “standards for the composition or chemical or physical properties of an aircraft fuel or fuel additive to control or eliminate aircraft emissions” which the Environmental Protection Agency (EPA) has determined endanger public health or welfare.⁴⁸

The inclusion of jet fuel as an obligated fuel under the CA LCFS would not intrude on the FAA’s regulatory domain. While the CA LCFS would establish standards for the lifecycle carbon intensity of jet fuel and incentivize the use of some fuels approved by FAA over others, it would **not mandate or prohibit the use of any particular jet fuel approved by the FAA**, nor would it set any of its own requirements on the composition of fuels. The FAA could—and should—exercise its own authority under Section 44714 to set a federal emissions standard on fossil jet fuel,⁴⁹ with which the LCFS obligation on fossil jet fuel would work in tandem.⁵⁰

Importantly, an obligation on jet fuel is not equivalent to a mandate for SAF, and obligated upstream fuel providers are free to comply with LCFS credits from numerous sources. While we believe an obligation on fossil jet fuel—particularly all fossil jet fuel uplifted in the state—will meaningfully increase the market signal for SAF production and use in the state, the ultimate means of compliance with the LCFS is up to obligated parties, and aircraft operators will not be required to use SAF under the proposal.

c) Airline Deregulation Act (ADA)

Finally, some stakeholders have claimed that the ADA preempts California from obligating fossil jet fuel under the LCFS. The ADA expressly prohibits states from enacting or enforcing “a law, regulation, or other provision having the force and effect of law related to a price, route, or service of an air carrier that may provide air transportation”⁵¹ However, although obligating jet fuel as a deficit generator under the LCFS may increase the cost of fuel uplifted by an airline, those impacts are likely outside the scope of ADA

⁴² See *Engine Mfrs. Ass’n v. S. Coast Air Quality Mgmt Dist.*, 541 U.S. 246, 253 (2004).

⁴³ See Order re: Plaintiff’s Motion for Summary Judgment as to Plaintiff’s Complaint for Declaratory Judgment and Injunctive Relief [Dkt. 65]; and Plaintiff-Intervenor Airlines for America’s Motion for Summary Judgment [Dkt. 73], Docket No. 162 (holding that South Coast’s Warehouse Indirect Source Rule is not a Clean Air Act emission standard because regulated entities may comply by taking actions unrelated to the purchase of zero emission trucks.)

⁴⁴ See *Montalvo v. Spirit Airlines*, 508 F.3d 464, 471-74 (9th Cir. 2007).

⁴⁵ See *Goodspeed Airport LLC v. East Haddam Inland Wetlands & Watercourses Comm’n*, F.3d 206, 209-12 (2d Cir. 2011); *Martin v. Midwest Express Holdings*, 555 F.3d 806, 812 (9th Cir. 2009); *Med-Trans Corp. v. Benton*, 581 F. Supp. 2d 721, 740 (E.D.N.C. 2008) (“Although the FAA has preemptive control of aviation safety measures, regulations regarding [emergency medical services] related equipment would not intrude on its domain.... [O]nly those regulations governing equipment or training directly related to aviation safety are preempted.”).

⁴⁶ See 14 C.F.R. § 33.7 (engine operating limitations for fuel)

⁴⁷ 49 U.S.C. § 44714.

⁴⁸ EPA endangerment findings are authorized under Section 231 of the Clean Air Act (42 U.S.C. 7571)

⁴⁹ See Third Way, FAA’s Existing Authority to Create a Low Carbon Aviation Fuel Standard, at 4 (June 2023), <https://thirdway.imgix.net/Existing-Authority-for-a-Federal-LCFS.pdf>.

⁵⁰ See *Rocky Mountain Farmers Union v. Corey*, 258 F. Supp. 3d 1134, 1152-53 (E.D. Cal. 2017) (holding LCFS was not preempted where and state efforts to reduce GHG emissions complemented and supported the EPA’s efforts).

⁵¹ 49 U.S.C. § 44713(b)(1). The exceptions do not apply to the proposal to include jet fuel in the LCFS

preemption,⁵² impose such a tenuous burden on an air carrier's price or services that it would not trigger preemption,⁵³ or are simply too difficult to link causally to changes in carrier prices, routes or services, given the complexity of airline ticket and fuel pricing. Fundamentally, an LCFS obligation on jet fuel would not entail any specific regulation of price, routes, or services, and is therefore not preempted by the ADA. Notably, the Central District of California recently held that the South Coast Air Quality Management District's Warehouse Indirect Source Rule does not run afoul of the ADA because it only has an indirect connection to carrier prices, services, or routes.⁵⁴

To further insulate the aviation provisions from potential legal challenge, we recommend that CARB designate jet fuel suppliers as the reporting entity—as currently proposed. Designating fuel suppliers as the reporting entity aligns with existing LCFS precedent for other fuel types and merely ensures that upstream aviation fuel suppliers are treated in the same fashion as all other transportation fuel suppliers in the California economy. This is significant, as case law around aviation preemption distinguishes between regulations targeted specifically at aviation and regulations that merely apply to upstream “inputs” to many sectors of the economy, including aviation.

d) Dormant Commerce Clause

In addition to preemption challenges, another potential challenge to the LCFS that could arise is the “dormant Commerce Clause” of the U.S. Constitution, which limits the state's authority to enact or enforce laws that burden interstate commerce. However, the LCFS has already been upheld against dormant Commerce Clause challenges.⁵⁵ Because the burden on jet fuel providers would not seem appreciably different from the burden imposed by the LCFS on other fuel providers, a court may be hard pressed to reach a different result if a dormant Commerce Clause challenge to the Proposal were brought.

Finally, we emphasize that CARBs attempt to avoid conflict with federal laws by isolating intrastate jet fuel is unnecessary. When Congress determines that a uniform national standard is needed, federal law preempts state regulation everywhere—including regulations internal to a state, such as obligating intrastate jet fuel under the LCFS. The proposal's limitation to intrastate jet fuel use offers only marginal protection from challenges, while dramatically weakening the impact of the obligation and threatening the achievement of the state's aviation decarbonization goals. Accordingly, we strongly suggest that CARB eliminate the distinction between intrastate and interstate jet fuel and obligate all jet fuel uplifted in California under the LCFS.

⁵² 17 See *Nat'l Federation of the Blind v. United Airlines, Inc.*, 813 F.3d 718, 727-28 (9th Cir. 2016) (noting that the Ninth Circuit has narrowly interpreted “service” to mean an air carrier's transportation service).

⁵³ *Supra*, Note 15

⁵⁴ *Supra*, Note 43 (noting that the rule is not preempted because it applies to all warehouses and not only air carrier warehouses, that potential increased costs for air carriers are not sufficient as increased costs do not interfere with the air carrier/customer relationship, and that the rule does not require specific prices or fundamentally differ from other generally applicable regulation that affects an air carrier's cost of compliance.)

⁵⁵ *Rocky Mountain Farmers Union v. Corey*, 730 F.3d 1070, 1107 (9th Cir. 2013); *Rocky Mountain Farmers Union v. Corey*, 913 F.3d 940, 948-54 (9th Cir. 2019).

Thank you for the opportunity to comment on this LCFS Rulemaking. Please don't hesitate to reach out if you have any questions.

Sincerely,

