



September 28, 2023

Liane Randolph  
Chair, California Air Resource Board  
1001 I Street Sacramento, CA 95814

*#Submitted electronically#*

**RE: Item # 23-8-1, California Air Resources Board's Public Meeting to Hear an Update on the Low Carbon Fuel Standard. September 28, 2023.**

Dear Chair Randolph,

For almost a decade, EDF has been working to reduce harmful pollution from aviation to mitigate climate change and deliver public health benefits by means of alternative fuels. This includes engagement in climate policy at the International Civil Aviation Organization (ICAO), leading and participating in expert working groups developing ICAO's Sustainability Framework for Sustainable Aviation Fuel (SAF) – an effort that builds heavily on California's Low Carbon Fuel Standard (LCFS). We were also deeply involved in the inclusion of SAF tax credits in the federal Inflation Reduction Act (IRA).

EDF welcomes the opportunity to provide comments on the Board's public meeting addressing LCFS reform updates, which includes important considerations to decarbonize aviation by the California Air Resources Board (CARB). EDF commends the agency for its continuing efforts to promote a cleaner, lower-carbon transportation sector. The comments below offer a number of recommendations for CARB to consider in its continued efforts to evaluate how to increase the use of alternative jet fuel in the State in a sustainable manner.

**California's Golden Opportunity to Clean Aviation and Protect Overburdened Communities**

Governor Newsom's [call for bolder action for the aviation sector a year ago](#) and the California Air Resources Board (CARB)'s related efforts for around two years have the potential to help decarbonize the aviation sector.

The structured deployment of sustainable aviation fuels (SAF) in California is important and consistent with civil aviation delivering on the imperative of a global net-zero climate impact by 2050. Expanding the scope of the Low Carbon Fuel Standard (LCFS) program to include aviation fuels beyond the existing voluntary opt-ins for alternative aviation fuels<sup>1</sup> is a necessary step towards achieving carbon neutrality in California by 2045 and will likewise support broader climate goals.

Including aviation fuels under the LCFS will ensure that the environmental attributes associated with the use of alternative aviation fuels are claimed to reduce the climate impacts of California's aviation emissions, rather than under other jurisdictions by means of indirect

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<sup>1</sup> Important to note, alternative aviation fuels are broader in nature than SAF, which is limited to fuels produced using renewable energy sources, wastes and residues and meet sustainability criteria.

accounting systems. Including aviation fuels under the LCFS will also ensure that the aviation sector shares responsibility for a portion of the cost of deploying SAF in California, rather than having the road transportation end-users subsidizing the aviation sector (a phenomenon that also happens at the federal level under the Renewable Fuel Standard). Even so, the impact on airfare prices of expanding the scope of the LCFS to aviation should be modest because (1) generous federal subsidies are available to offset increased expenses, and (2) air carriers can shield themselves against LCFS marginal price signal pass-throughs from jet fuel providers.

The inclusion of the aviation sector in California's LCFS represents a unique opportunity to set a future-proof program that delivers climate and public health benefits without unintended consequences on ecosystems, livelihoods, and communities. Recent developments such as the Inflation Reduction Act (IRA) at the federal level pave the road to success, representing a golden opportunity for California to clean up the aviation sector and deliver long-overdue environmental justice to communities exposed to toxic pollutants.

### **California's chance to deliver tangible climate benefits.**

We respectfully encourage CARB to extend a reformed LCFS to cover all fossil jet fuel uplifted in California to ensure the greatest degree of climate benefits. This coverage is consistent with the generally applicable language of Gov. Schwarzenegger's Executive Order S-01-07 establishing the LCFS applicable to all transportation fuels providers in California. It is also consistent with the authority CARB exercised in the 2018 LCFS reform when it included alternative jet fuel as an opt in-fuel entitled to generate credits, providing so the necessary steppingstone towards more comprehensive action now. Additionally, the environmental benefits from the use of alternative aviation fuels take place upstream of fuel combustion, i.e., within sectors under the scope of California's GHG inventory (or equivalent inventory for imports).

Ensuring the program applies in this manner would also constitute a meaningful contribution towards the Biden-Harris Administration's SAF Grand Challenge goal for 2030 - at a minimum the fair share corresponding to California. The combination of the IRA SAF tax credits and the IRA's enhanced SAF sustainability framework would most probably drive investment in high-integrity SAF in California, but the quantities remain uncertain. Expanding the LCFS coverage to all jet fuel provided in California would very likely ensure these investments are made and help deliver ambitious (and needed) levels of SAF. paving the road for a successful sectoral decarbonization.

From a policy design standpoint, this approach potentially consists of removing the current LCFS exemption for conventional jet fuel. To do so, CARB would potentially need to reassess the size of the increase in stringency of the LCFS carbon intensity goals, which are currently under consideration, to account for the larger demand from the broader aviation sector. This task should be relatively straightforward, though it is no less time sensitive than the other components of LCFS analysis.

### **A unique opportunity to advance on the imperative to protect communities adversely affected by aviation's toxic emissions.**

Fuel-related emissions from landing and take-off operations disproportionately affect local communities as well as workers within the airport envelope. Communities living in proximity to airports are exposed to elevated levels of ultrafine particles (UFP) and are at

risk of adverse health effects, a critical issue upon which CARB needs to act without further delay.<sup>2</sup>

While alternative aviation fuel blends have the potential to reduce harmful aviation emissions by reducing aromatic content, such an outcome won't happen unless additional regulations are enforced. Furthermore, the gradual scale-up of alternative aviation fuels means that a fuel swap will help only marginally in the near term - if at all - which is insufficient to protect overburdened communities already suffering decades' worth of accumulated adverse health effects.

To deliver tangible near-term public health benefits, CARB should consider action additional to the LCFS reform under consideration, with the goal of regulating jet fuel composition. Jet fuel aromatic content could be reduced by hydrotreating conventional jet fuel while tapping on IRA's generous clean hydrogen subsidies to cushion price impacts and GHG emissions penalties.<sup>3</sup> This is a near-term measure that could slash PM<sub>2.5</sub> emissions without adversely affecting safety, i.e., in a manner that would be fully compatible with existing federal airworthiness certifications.

### **Making a sound policy move to deliver on deep decarbonization and public health goals now.**

CARB's upcoming decision on LCFS reform offers a golden opportunity to lay down the foundation for the high-integrity SAF needed to make real progress in transforming the aviation sector's outlook for climate action in California. Including the aviation sector under the LCFS is urgent, and we can't afford to miss this opportunity to deliver on deep decarbonization and public health goals.

We are looking forward to supporting your administration as it charts a path for aviation to contribute to the state's goal of achieving net-zero greenhouse gas emissions by 2045 and significantly improve local air quality and public health.

We would be glad to clarify or elaborate on any points made in the above comments. If there are any questions, CARB staff can feel free to contact EDF's California State Director, Katelyn Roedner Sutter (kroedner@edf.org) or Dr. Pedro Piris-Cabezas (ppiris@edf.org).

Sincerely,

Dr. Pedro Piris-Cabezas  
Senior Director, Global Transportation  
Lead Senior Economist

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<sup>2</sup> For a more detailed description, a literature review, and an overview of options on how to tackle PM<sub>2.5</sub> emissions from aviation see EDF's letter to the U.S. Environmental Protection Agency from April 4, 2022: [https://downloads.regulations.gov/EPA-HQ-OAR-2019-0660-0207/attachment\\_1.pdf](https://downloads.regulations.gov/EPA-HQ-OAR-2019-0660-0207/attachment_1.pdf)

<sup>3</sup> In several recent filings, EDF has underscored the vital importance of reducing climate and health harming pollution from hydrogen production. See for instance: <https://www.edf.org/sites/default/files/2023-09/Petition%20for%20Rulemaking%20-%20Hydrogen%20Production%20Facilities%20-%20CAA%20111%20and%20112%20-%20EDF%20et%20al.pdf>