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Sustainable Aviation Fuel: Climate Promise, Legal Structure, and the Community Gap

Sustainable aviation fuel (SAF) is increasingly positioned as aviation's most plausible near- and mid-term pathway to meaningful greenhouse-gas (GHG) reductions. Federal policy largely reflects that framing: it prioritizes scaling production and lowering costs, with an emphasis on life-cycle emissions accounting and market incentives rather than mandates. The legal tension is straightforward: SAF can materially change aviation's climate profile, but it does not, by itself, address the localized burdens that drive community opposition.

I. SAF in the Federal Legal Framework

At the federal level, SAF policy is driven primarily through tax incentives and interagency supply-chain initiatives aimed at expanding domestic production. The DOE/DOT/USDA "Sustainable Aviation Fuel Grand Challenge Roadmap" sets the federal ambition: 3 billion gallons per year of domestic SAF by 2030 and "100%" of projected U.S. aviation jet fuel use by 2050, with a minimum 50% life-cycle GHG reduction compared to conventional jet fuel as a baseline criterion. *See U.S. Dep't of Energy, SAF Grand Challenge Roadmap (Sept. 2022) (Executive Summary).*

The principal federal tax lever has evolved. The Inflation Reduction Act created a stand-alone SAF blending credit under 26 U.S.C. § 40B that applied in calendar years 2023–2024. Beginning in 2025, SAF incentives largely flow through the clean fuel production credit in 26 U.S.C. § 45Z, which ties the credit to lifecycle GHG emissions and applies to SAF and other qualifying transportation fuels. *See IRS, Clean Fuel Production Credit (updated May 29, 2025).*

The Federal Aviation Administration (FAA) plays a supporting—important but secondary—role by (1) certifying aircraft and engines (including fuel compatibility and safety determinations), (2) supporting research and demonstration programs, and (3) ensuring that operational or infrastructure changes proceed through the FAA's safety and environmental review processes. FAA's current NEPA implementing procedures are set out in FAA Order 1050.1G (effective June 30, 2025).

II. Voluntariness and Its Consequences

What is notable, legally, is what is not present: a federal requirement that airlines substitute SAF for conventional jet fuel in any specific quantity. Instead, adoption is market-driven and incentive-based. That voluntariness has practical consequences. Airlines can choose where and when to use SAF based on price, availability, and logistics—decisions that are not necessarily aligned with where communities bear the greatest noise and local air-quality burdens.

Other federal programs sometimes discussed alongside SAF do not operate as direct "airline mandates." For example, the Renewable Fuel Standard (RFS) is a renewable-fuel volume program administered by EPA under Clean Air Act § 211(o), and compliance obligations generally fall on refiners or importers of gasoline or diesel fuel ("obligated parties"), not airlines as end-users. *See EPA, Overview of the Renewable Fuel Standard Program (updated May 7, 2025).*

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III. SAF and NEPA: Global Benefits, Local Blind Spots

SAF's climate value is primarily life-cycle and global. DOE's Roadmap emphasizes that emissions outcomes depend on the full life-cycle profile—production, transportation, combustion, and indirect effects—rather than a simple "tailpipe" substitution story. See *DOE Roadmap, supra (Executive Summary).*

By contrast, many community burdens associated with aviation are local and operational. Aircraft noise is regulated through FAA noise certification standards and related land-use compatibility frameworks, not through fuel policy. Changing the carbon intensity of fuel does not, by itself, change the noise significance methodologies and thresholds used in FAA environmental reviews. *See 14 C.F.R. pt. 36 (Noise Standards); FAA, Aircraft Noise Levels & Stages.*

This is not a critique of SAF as a technology. It is a reminder about legal framing: if NEPA documents or policy communications imply that SAF "mitigates" aviation impacts broadly, challengers will focus on whether the analysis separates climate benefits from distinct local effects (noise and criteria pollutants) and whether mitigation claims are supported by enforceable commitments rather than aspirational goals.

IV. International Context and the Limits of Alignment

International aviation policy increasingly treats SAF as a compliance pathway within broader climate frameworks. ICAO's Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) recognizes SAF among eligible measures for reducing net emissions growth from international aviation, subject to sustainability and life-cycle criteria. ICAO's Assembly Resolution A41-22 expressly supersedes prior CORSIA-related resolutions, including A40-19. *See ICAO, CORSIA FAQs (Apr. 2024); ICAO, Resolution A41-22 (CORSIA).*

That international emphasis can create an "alignment" narrative—i.e., domestic initiatives are harmonized with ICAO programs and airline net-zero commitments. Legally, however, alignment is not obligation. U.S. domestic environmental review and permitting still depend on federal statutes and agency procedures, and the enforceability of SAF-based mitigation claims depends on whether commitments are incorporated into permits, approvals, or binding agreements.

V. Environmental Justice and the Uneven Distribution of Burdens

SAF policy is frequently justified as climate policy; environmental justice (EJ) concerns, by contrast, tend to arise from local burdens—noise and local air quality—near airports and under flight corridors. Over the past year, key federal EJ policy anchors have shifted. Executive Order 14148 (Jan. 20, 2025) revoked Executive Order 14008 (which had established Justice40), among other actions. *See Exec. Order 14148, Initial Rescissions of Harmful Executive Orders and Actions, 90 Fed. Reg. 8237 (Jan. 28, 2025).*

In addition, a separate Trump executive order revoked Executive Order 12898 (the foundational EJ executive order). See Ending Illegal Discrimination and Restoring Merit-Based Opportunity (Presidential Actions, Jan. 21, 2025) (revoking E.O. 12898).

In parallel, the Council on Environmental Quality (CEQ) issued an interim final rule removing CEQ's NEPA implementing regulations (40 C.F.R. pts. 1500–1508), with the rescission effective April 11, 2025. Agencies were directed to rely on their own NEPA procedures, and FAA Order 1050.1G expressly reflects CEQ's removal of the CEQ regulations. See Removal of National Environmental Policy Act Implementing Regulations (Interim Final Rule), 90 Fed. Reg. (Feb. 25, 2025); FAA Order 1050.1G, supra.

These changes do not repeal NEPA or other statutory civil-rights obligations. But they may affect the degree to which EJ topics are analyzed as a matter of policy expectation in NEPA documents, especially where prior practice relied heavily on revoked executive orders or on now-removed CEQ regulatory text. Practically, this increases the importance of grounding EJ and local-impact arguments in statutes, FAA orders and guidance that remain in effect, and record evidence, rather than in revocable executive-policy statements.

VI. Infrastructure, Lock-In, and Path Dependency

SAF infrastructure investments (feedstock logistics, refining conversions, blending and storage, and airport fuel-farm integration) are capital-intensive and long-lived. For affected communities and project sponsors, this raises a "lock-in" question: as infrastructure decisions are made, will agencies treat SAF scale-up as a reason to defer or discount other mitigation measures (operational noise reduction, land-use compatibility efforts, or targeted local air-quality controls)? NEPA review remains the primary procedural setting for testing whether climate benefits are being used to gloss over distinct local impacts.

VII. SAF as One Tool—Not a Substitute

The most significant legal risk surrounding SAF is not that it fails to reduce emissions, but that it becomes a substitute narrative for addressing other distinct impacts. The safer framing—legally and substantively—is to treat SAF as a climate tool that may deliver life-cycle GHG reductions, while separately analyzing (and, where appropriate, mitigating) operational noise and local air-quality effects using the metrics and thresholds that govern those impacts.

VIII. Process as the Decisive Battleground

As with other aviation environmental disputes, the decisive battleground is often procedural: what the agency commits to, what it discloses, what it treats as reasonably foreseeable, and what it leaves as aspirational. Communities that engage early—requesting clear commitments, enforceable mitigation where available, and a transparent separation of global climate benefits from local impacts—are best positioned to shape the record and preserve issues for later review.

Conclusion

SAF represents genuine progress in aviation climate policy, and federal law is now structured to accelerate its production through tax incentives and interagency coordination. But SAF's legal "fit" is narrow: it is principally a climate measure, not a community-impact remedy. The durable path is to treat SAF as one component of a broader mitigation and compliance strategy—one that does not overclaim, and that does not crowd out the distinct tools used to address noise, local air quality, and community impacts.

Contact Steve Taber

For more information about sustainable aviation fuel, or other aviation and environmental law concerns, contact Steven M. Taber.

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