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Sustainable Aviation Fuel (SAF): An Overview of Current Laws and Legislation Introduced in the 118th Congress

Sustainable aviation fuel (SAF) is fuel derived from “sustainable” sources that meets aviation technical standards. The most touted potential benefits of SAF include assisting with decarbonizing the aviation sector and assisting with rural economic development. Challenges could include high SAF production costs and differing tax, environmental, and transportation policy goals.

Following years of legislative attention to renewable fuels for road transportation (e.g., renewable fuel standard and biofuel tax incentives), Congress now also appears focused on sustainable fuels for air transportation. Congress has supported SAF (e.g., through P.L. 117-169, known as the Inflation Reduction Act of 2022 or IRA), and some Members have introduced measures that would further support SAF (e.g., H.R. 6271, the Farm to Fly Act of 2023). Another measure would reduce some existing support for SAF (H.R. 2902). This CRS product briefly covers the most recent legislative action for SAF and efforts in the 118th Congress that pertain to SAF.

SAF and Sustainability

One of the requirements for SAF is that it be derived from a *sustainable* feedstock. The International Air Transport Association (IATA) defines as *sustainable* “something that can be continually and repeatedly resourced in a manner consistent with economic, social and environmental aims, and conserves an ecological balance by avoiding depletion of natural resources.” IATA also reports that SAF can be made from either biological resources (e.g., biofuel) or alternative resources (e.g., power-to-liquid fuel). One way to measure sustainability is with a lifecycle assessment (LCA). SAF is a global commodity. As such, national and international organizations and agencies have varying definitions for both *SAF* and *sustainable*.

SAF Certification

The Federal Aviation Administration (FAA) certifies aircraft to operate on a fuel approved by ASTM International (ASTM). The National Renewable Energy Laboratory (NREL) reports that, as of November 2023, ASTM had approved nine SAF pathways, all of which fall under either technical standard ASTM D7566 or ASTM D1655. Each SAF pathway includes a specific feedstock or feedstocks, conversion process, and blending ratio limitation. For example, some SAF can be blended at a maximum 50% ratio with a petroleum counterpart. Some alternative fuels can be deemed complete substitutes for petroleum fuel and are interchangeable with petroleum fueling infrastructure (i.e., a drop-in fuel). A small number of flights have been carried out with 100% SAF. However,

ASTM standards currently dictate that SAF be blended at a certain ratio with a petroleum counterpart.

SAF Data

Limited SAF production and consumption data are available. One source for SAF data is the U.S. Environmental Protection Agency (EPA), which reports public data for the Renewable Fuel Standard (RFS), including the registration of renewable jet fuel (RJF) for the program. EPA reports that approximately 14 million gallons of domestic RJF and 12 million gallons of foreign generation RJF were registered for the RFS in 2023.

It is not clear how many commercial SAF production facilities are in operation in the United States. According to various resources from the federal government, the news media, and others, there appear to be three commercial-scale facilities in operation with a combined production capacity of 90 million gallons/year. The U.S. Energy Information Administration (EIA) reported in July 2024 that SAF production “could increase from around 2,000 barrels per day (b/d) to nearly 30,000 b/d in 2024 if all announced capacity additions come on line.” In addition, the Neste company supplies Neste MY Sustainable Aviation Fuel to selected airports across the United States, including SFO, LAX, and ORD.

SAF makes up a fraction of the aviation fuel used in the United States. The Federal Aviation Administration (FAA) reports approximately 22.5 billion gallons of jet fuel and aviation gasoline were consumed in U.S. civil aviation aircraft in 2022. The FAA forecasts that approximately 27 billion gallons will be consumed in 2030. In 2021, the Biden Administration launched a Sustainable Aviation Fuel Grand Challenge, which calls for at least 3 billion gallons of SAF production per year by 2030.

SAF Current Laws

In August 2024, CRS searched enacted legislation for the term “sustainable aviation fuel.” The search yielded five laws that contain the term. The first law is the IRA. Section 40007 of the IRA establishes a grant program for eligible entities in the United States that produce, transport, blend, or store SAF, among other activities. Section 40007 is administered by the Federal Aviation Administration (FAA) via the Fueling Aviation’s Sustainable Transition (FAST) grants program. FAA announced in August 2024 that it awarded \$291 million in FAST grants.

IRA Section 13203 establishes a SAF tax credit (26 U.S.C. §40B) worth a minimum of \$1.25/gallon and a maximum of

\$1.75/gallon for SAF produced in the United States. The amount of the blender credit depends on the lifecycle greenhouse gas (GHG) emission reduction percentage of the fuel. In order to qualify for the credit, the fuel must have a lifecycle GHG emission reduction percentage of at least 50% as compared with petroleum-based jet fuel; this reduction percentage qualifies the fuel for a \$1.25/gallon tax credit. An extra \$0.01/gallon may be added for every percentage point by which the lifecycle GHG emission reduction percentage exceeds 50%. Because GHG emissions may not be reduced more than 100%, this supplementary amount implicitly cannot exceed \$0.50/gallon (i.e., a maximum tax credit of \$1.75/gallon). The credit expires December 31, 2024.

IRA Section 13704 establishes a clean fuel production credit (26 U.S.C. §45Z), which has a carve-out for SAF. The value of the credit can vary from \$0.35/gallon to \$1.75/gallon for SAF depending in part on the type of facility the fuel is produced at. An emissions factor determines in part the eligibility of SAF for the credit; an eligible fuel shall emit no more than 50 kilograms of CO₂ (or CO₂ equivalent) per 1 million British Thermal Units (mmBTU). The SAF tax credit is effectively replaced by the clean fuel production credit starting in 2025. The credit expires December 31, 2027.

The Consolidated Appropriations Act for 2023 (P.L. 117-328) was the second law to use the term *sustainable aviation fuel*, granting the Secretary of Transportation the authority to “make discretionary grants to primary airports for airport-owned infrastructure required for the on-airport distribution, blending, or storage of sustainable aviation fuels that achieve at least a 50 percent reduction in lifecycle greenhouse gas emissions.” The FAA administers this effort under its Airport Improvement Program (AIP).

The third law to contain the term is the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 (FY2023 NDAA; P.L. 117-263). Section 324 of this act grants the Secretary of Defense the authority to “conduct a pilot program on the use of sustainable aviation fuel by the Department of Defense [DOD].” The law gives DOD until the end of FY2028 to implement a plan to use SAF, and it gives the DOD Secretary the authority to waive the use of SAF at a facility under the pilot program given certain conditions (e.g., the use of SAF is not feasible due to a lack of domestic availability of SAF or a national security contingency). The FY2023 NDAA requires the DOD to give notice to Congress about certain aspects of the pilot program. In August 2024, DOD reported to CRS that it had not yet fulfilled this requirement.

The fourth law to use the term *sustainable aviation fuel* is the FAA Reauthorization Act of 2024 (P.L. 118-63). Section 791 of the act requires the FAA Administrator to enter an agreement with the National Academies of Sciences, Engineering, and Medicine to “carry out a study examining airborne ultrafine particles [UFPs] and the effect of such particles on airport-adjacent communities.” The scope of the study is to “consider the concentration of UFPs resulting from various aviation fuel sources including

aviation gasoline, sustainable aviation fuel, and hydrogen, to the extent practicable,” among other things.

The fifth law to use the term *sustainable aviation fuel* is the Consolidated Appropriations Act, 2024 (P.L. 118-42). Similar to the Consolidated Appropriations Act, 2023, this act grants the Secretary of Transportation the authority to “make discretionary grants to primary airports for airport-owned infrastructure required for the on-airport distribution or storage of sustainable aviation fuels that achieve at least a 50 percent reduction in lifecycle greenhouse gas emissions.” The 2024 Appropriations Act also gives the Secretary the authority to “make discretionary grants ... to primary or nonprimary airports for the acquisition or construction costs related to airport-owned, revenue-producing aeronautical fuel farms and fueling systems, including mobile systems, that the Secretary determines will promote the use of unleaded or sustainable aviation fuels on a non-exclusive basis.” These authorities are provided under the “Grants-in-Aid for Airports” account.

Proposed SAF Legislation (118th Congress)

Several bills introduced in the 118th Congress would further support SAF. For example, the Biojet Fuel Research Act (H.R. 909) would require FAA to establish an SAF working group that would report to Congress on the “research and development needs ... across Federal agencies necessary for cost-competitive and equivalent safety compared to petroleum-based jet fuel, while offering improved sustainability and energy supply security for aviation.” The Sustainable Aviation Fuel Act (H.R. 2747) would establish a low carbon aviation fuel standard, would require DOD to make a bulk purchase of SAF for an amount not less than 10% of what would be procured for operational purposes given certain conditions, would extend the clean fuel production credit (26 U.S.C. §45Z) through 2032, and would add SAF to the energy credit, among other things. The Farm to Fuselage Act (H.R. 5235) would modify some farm bill energy title programs for the purpose of including SAF. The Farm to Fly Act (H.R. 6271) would specify that SAF is eligible for farm bill energy title programs, would require the Department of Agriculture (USDA) to take a comprehensive and integrated approach for SAF advancement, and would add an SAF definition to the farm bill energy title, among other things. The Sustainable Aviation Fuel Information Act (H.R. 9327) would require EIA to include SAF data in its weekly and monthly reports. Lastly, the Sustainable Aviation Fuels Accuracy Act (S. 1958) would require FAA to adopt the SAF definition provided in the bill and apply it to all aircraft flown, to, from, or within the United States, and apply the definition to all FAA programs.

At least one bill introduced in the 118th Congress would diminish support for SAF. The Restoring Fuel Market Freedom Act (H.R. 2902) would repeal the SAF credit (26 U.S.C. §40B) and the clean fuel production credit (26 U.S.C. §45Z).

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