

GAO Highlights

Highlights of [GAO-23-105300](#), a report to congressional committees

Why GAO Did This Study

To reduce greenhouse gas emissions from the aviation sector, the White House announced a SAF Grand Challenge in September 2021. The Grand Challenge goal is to supply 3 billion gallons of SAF per year by 2030 and 100 percent of expected domestic commercial jet fuel use by 2050.

GAO was asked to review the federal role in SAF. This report (1) discusses the state of SAF production and use for the U.S. commercial aviation industry and factors shaping this market, and (2) identifies how federal agencies have supported SAF and assesses how they will monitor progress toward Grand Challenge goals.

GAO reviewed data on SAF production and conventional jet fuel use from 2016 to 2022. GAO reviewed Grand Challenge documents and interviewed officials from four agencies selected based on their roles in SAF and interagency efforts. GAO interviewed 43 stakeholders on a range of SAF issues. Selected stakeholders included airlines, SAF producers, airports, industry associations, environmental organizations, and other groups.

What GAO Recommends

GAO recommends that the Departments of Transportation, Energy, and Agriculture develop and incorporate performance measures into the Grand Challenge roadmap. Transportation and Agriculture concurred. Energy indicated the recommendation is completed and that planned roadmap activities will enable progress to be measured. As discussed in the report, GAO disagrees that the recommendation is completed.

View [GAO-23-105300](#). For more information, contact Heather Krause at (202) 512-2834 or KrauseH@gao.gov.

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SUSTAINABLE AVIATION FUEL

Agencies Should Track Progress toward Ambitious Federal Goals

What GAO Found

Sustainable aviation fuel (SAF) is alternative jet fuel made from renewable and waste feedstocks that can reduce greenhouse gas emissions on a lifecycle basis. SAF production and use in the U.S. has increased in recent years; this fuel is now used by airlines at two major commercial airports in California. While U.S. production reached 15.8 million gallons in 2022, it accounted for less than 0.1 percent of the total jet fuel used by major U.S. airlines (see table). This also falls well below the previous Federal Aviation Administration goal for U.S. airlines to use 1 billion gallons of SAF per year by 2018.

Comparison of Sustainable Aviation Fuel (SAF) Produced and Jet Fuel Consumed by Major U.S. Airlines by year

Millions of gallons		
Year	SAF produced	Jet fuel consumed by major U.S. airlines
2016	1.9	17,138
2017	1.7	17,662
2018	1.8	18,325
2019	2.4	18,746
2020	4.6	11,067
2021	5.1	14,617
2022	15.8	17,510

Source: Environmental Protection Agency and Bureau of Transportation Statistics. | GAO-23-105300

Factors driving the SAF market include airlines' interest in reducing their greenhouse gas emissions and federal and California state policy incentives. Airlines have identified SAF as the most promising near-term technology to reduce greenhouse gas emissions and have signaled their interest by entering into agreements for future SAF deliveries. In addition, federal and California policy incentives have helped offset the high cost of SAF according to stakeholders. The high price of SAF compared to conventional jet fuel is a key factor inhibiting increased production and use. Other factors inhibiting market growth include the long time frames and high costs of developing new SAF production facilities. It remains to be seen how the Inflation Reduction Act of 2022, which includes new SAF tax credits, will affect the market.

Since 2007, federal agencies including the U.S. Departments of Transportation, Energy, and Agriculture have sponsored research and provided direct financial support for SAF production. In September 2022, these agencies published a roadmap outlining actions to support the recent White House Grand Challenge goals of producing 3 billion gallons of SAF by 2030 and 35 billion gallons by 2050. However, the roadmap does not establish performance measures to monitor, evaluate, and report the results of these actions. Without performance measures, the agencies are not well positioned to evaluate the effectiveness of federal government actions to meet the Grand Challenge goals. In contrast, establishing and using such measures can identify progress on the extent to which SAF is contributing to emission reductions.