Committee on Transportation and Infrastructure
U.S. House of Representatives
Washington DC 20515

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SUMMARY OF SUBJECT MATTER

TO: Members, Subcommittee on Aviation
FROM: Staff, Subcommittee on Aviation
RE: Subcommittee Hearing on "The State of General Aviation"

PURPOSE

The Subcommittee on Aviation will meet on Wednesday, July 13, 2022, at 10 a.m. EDT in 2167 Rayburn House Office Building and virtually via Zoom for a hearing titled, "The State of General Aviation." The hearing will examine changes and current trends in the general aviation community, including airspace access and use, safety, sustainability efforts, and manufacturing. The subcommittee will hear testimony from witnesses representing the Aircraft Owners and Pilots Association (AOPA), the General Aviation Manufacturers Association (GAMA), the National Association of State Aviation Officials (NASAO), the National Business Aviation Association (NBAA), Helicopter Association International (HAI), the Association of American Airport Executives (AAAE), and the National Air Transportation Association (NATA).

BACKGROUND

I. Definition and Overview of General Aviation

According to the Federal Aviation Administration (FAA), "general aviation" describes a diverse range of aviation activities and includes all segments of the aviation industry except commercial air carriers and the military.[1] General aviation activities include training of new pilots and pilots interested in additional ratings or certification, aerial firefighting, air tourism, crop dusting, movement of large heavy loads by helicopter, flying for personal or business/corporate reasons, and emergency medical services.[2] General aviation aircraft range from one-seat single-engine piston aircraft to long-range corporate jets.[3] It also includes rotorcraft, gliders, and amateur-built aircraft.

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[1] FAA, *FAA Aerospace Forecasts FY 2003–2014*, at Ch. 5 (2014) *available at* https://www.faa.gov/data_research/aviation/aerospace_forecasts/2003-2014/.
[2] *Id.*
[3] *Id.*

A general aviation airport is a public-use airport that does not have scheduled service or has less than 2,500 annual passenger boardings.[4] According to the FAA, approximately 89 percent of airports included in the National Plan of Integrated Airport Systems (NPIAS) are classified as nonprimary airports and serve mainly general aviation activity.[5] For context, the latest edition of the NPIAS identified 3,304 existing public-use and six proposed airports, estimating approximately $43.6 billion in costs between 2021 and 2025 are eligible and justified under the Airport Improvement Program (AIP).[6]

The FAA analyzes general aviation activity on an annual basis through the "General Aviation Survey." According to the results of the 2020 survey, the latest available, the active general aviation fleet was estimated to be 204,140 aircraft in 2020 (a 3.2 percent decline from 2019), as increases in fixed wing turbine were more than offset by decreases in pistons, rotorcraft, lighter-than-air and light sport aircraft, and experimental aircraft.[7] Total hours flown were estimated to be 22.5 million in 2020, down 12 percent from 2019.[8] Decreases were across the board, with the highest decline in fixed wing piston hours (10.3 percent). The highest percentage decline occurred in lighter than air aircraft (44.6 percent) and glider activity (28.7 percent), followed by rotorcraft hours (19.6 percent).[9]

A. Future of the General Aviation Fleet and Operations

According to the "FAA Aerospace Forecast Fiscal Years 2022-2042," the overall general aviation sector was "not as severely affected by the [COVID-19] pandemic as the airlines."[10] For example, while business aviation experienced a steep decline in activity early in 2020, demand began to recover for this sector in the second half of the year, much faster than passenger airlines.[11] Specifically, domestic and international business jet operations in April 2020 were nearly 75 percent below 2019 levels, but by June 2020 had recovered to levels 24 percent below those in June 2019, and by December 2020 were only about 12 percent lower than the prior year's level of activity.[12] Such increases in business jet activity are reflected in the FAA's most recent general aviation aerospace forecast and are supported by statistics from GAMA showing that deliveries of U.S. manufactured "business jets increased by 14.7 percent and turboprop deliveries were up 18.6 percent [in 2021], amounting for a 16.6 percent increase in fixed wing turbine shipments."[13]

Against the findings of strong business jet and rotorcraft deliveries in 2021, the FAA expects the general aviation sector will recover "sooner to its 2019 levels by aircraft type than the other

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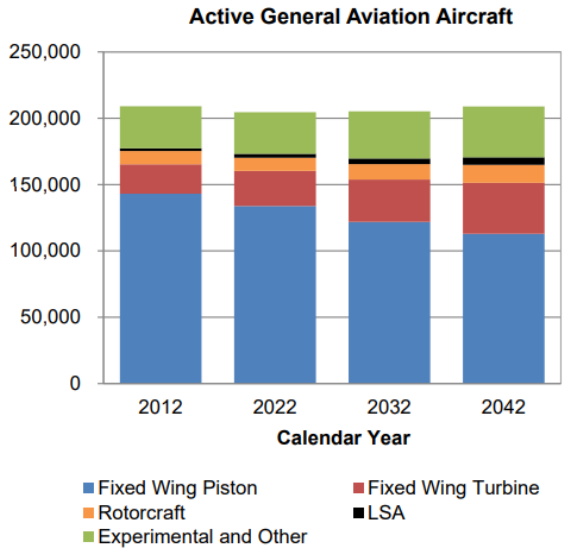
[4] 49 U.S.C. § 47102(8).
[5] FAA, *National Plan of Integrated Airport Systems (NPIAS) 2021–2025*, (Sep. 30, 2020), *available at* https://www.faa.gov/airports/planning_capacity/npias/current/media/NPIAS-2021-2025-Narrative.pdf.
[6] *Id.*
[7] FAA, *FAA Aerospace Forecast Fiscal Years 2022-2042* (June 28, 2022), *available at* https://www.faa.gov/sites/faa.gov/files/2022-06/FY2022_42_FAA_Aerospace_Forecast.pdf [hereinafter *Aerospace Forecast*].
[8] *Id.*
[9] *Id.*
[10] *Id.* at 27.
[11] General Accountability Office (GAO), *COVID-19 Pandemic – Observations on the Ongoing Recovery of the Aviation Industry*, GAO-22-104429 (Oct. 2021), *available at* https://www.gao.gov/assets/gao-22-104429.pdf.
[12] FAA, *Federal Aviation Administration, Business Jet Report*, (May. 2019, July 2019, May. 2020, July 2020, Jan. 2021), *available at* https://aspm.faa.gov/apmd/sys/bj-intro.asp.
[13] *Aerospace Forecast*, *supra* note 7.

sectors," and in turn, remain stable in the long-term.[14] The active general aviation fleet, which showed a decline of 3.2 percent between 2019 and 2020, is projected to increase from its 2021 level of 204,405 aircraft to 208,905 by 2042, as the declines in the fixed-wing piston fleet were offset by increases in turbine, rotorcraft, experimental, and light sport fleets.[15]

Of note, the FAA predicts the largest segment of the general aviation fleet, fixed-wing piston aircraft, will "shrink by 22,055 aircraft between 2021 and 2042, an average annual rate of -0.8 percent."[16] The FAA cites pilot demographics, overall increasing cost of aircraft ownership, availability of much lower cost alternatives for recreational usage, coupled with new aircraft deliveries not keeping pace with retirements of the aging fleet, as primary drivers of the decline.[17]



Source: *FAA Aerospace Forecast Fiscal Years 2022-2042*

In terms of operations, the FAA forecasts that general aviation operations will increase an average of 0.6 percent a year as increases in use of turbine powered aircraft offset declines in piston aircraft use.[18] Specifically, "general aviation operations accounted for 57 percent of operations in 2021…and has been increasing since the pandemic, from 51 percent in 2019 to 56 percent in 2020, and 57 percent in 2021."[19]

[14] *Id.* at 28.
[15] *Id.*
[16] *Id.*
[17] *Id.* at 29.
[18] *Id.* at 33.
[19] *Id.* at 35.

B. General Aviation Airport Funding

Unlike commercial airports, general aviation airports do not have access to the passenger facility charge (PFC), which helps fund airport terminal and other capital projects.[20] However, general aviation airports included in the NPIAS are eligible for Airport Improvement Program (AIP) funds.[21] General aviation airports are able to receive funds through entitlements, or formula funds, that are apportioned by formula to airports and can be used for eligible airport development projects.[22] Generally, general aviation, reliever, and nonprimary commercial service airports are allocated 20 percent of AIP funds subject to apportionment.[23] From that share, those airports receive the lesser of either $150,000 or one-fifth of the estimated five-year costs for airport development for each airport as listed in the most recent NPIAS.[24] Any remaining funds are then distributed to each airport according to a state-based population and area formula.[25] General aviation airports that receive entitlements can also apply for discretionary funds, which are awarded on a competitive basis.[26]

Regarding recent revenue trends, even though most U.S. airports saw a decline in revenue during the pandemic, the Government Accountability Office (GAO) found that "about 60 percent of general aviation and reliever airports and about 40 percent of non-primary commercial service airports did not see [any] change in their non-aeronautical revenues."[27]

C. General Aviation Manufacturing

The aviation manufacturing sector was eligible for various federal pandemic relief programs, including the United States. Small Business Administration Payroll Protection Program and the Aviation Manufacturing Jobs Protection Program, and has remained relatively stable over the course of the pandemic with a steady increase in the last year. In 2020, airplane and helicopter shipment billings of U.S. manufactured aircraft modestly decreased to $20 billion for airplanes and $3.4 billion for helicopters, when compared to $23.5 billion and $3.8 billion, respectively, in 2019.[28] In 2021, all aircraft segments saw increases in aircraft shipments and preliminary deliveries were valued at $25.2 billion, an increase of 10.3 percent.[29] Airplane shipments in 2021, when compared to 2020, saw preliminary piston airplane deliveries increase 5.5 percent, with 1,393 units; turboprop airplane deliveries increased by 19 percent, with 527 units; and business jet deliveries increased by 10.2 percent, with 710 units.[30]

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[20] 49 U.S.C. § 40117 (b).
[21] FAA, *Overview: What is AIP* (last updated: Nov. 2, 2021), *available at* https://www.faa.gov/airports/aip/overview/#eligible_airports.
[22] 49 U.S.C. §47114.
[23] Cong. Res. Serv. (CRS), *Financing Airport Improvements*, Rep. No. R43327 (2019), *available at* https://crsreports.congress.gov/product/pdf/R/R43327.
[24] *Id.*
[25] *Id.*
[26] *Id.*
[27] GAO, COVID-19 Pandemic - Observations, *supra* note 11.
[28] Gen. Aviation Mfr. Assoc. (GAMA), *2020 Year-End General Aviation Aircraft Shipment Report* (May 2021) *available at* https://gama.aero/facts-and-statistics/quarterly-shipments-and-billings/.
[29] GAMA, *2021 Year-End General Aviation Aircraft Shipment Report* (Feb. 2022), *available at* https://gama.aero/news-and-events/press-releases/gama-releases-2021-aircraft-shipment-and-billings-report/.
[30] *Id.*

In its first quarter 2022 Aircraft Shipment and Billing Report, GAMA reported that turboprop airplane deliveries saw the largest percentage year-over-year increase at 31 percent with 110 units during the first quarter.[31] When compared to the first quarter of 2021, piston airplane shipments increased 13.9 percent, business jet shipments increased 4.4 percent, turbine helicopter deliveries increased 6.5 percent, and piston engine aircraft increased 8.3 percent.[32]

II. General Aviation Safety

Over the past four decades, general aviation has become significantly safer over the years with the number of fatal and nonfatal accidents declining since 2000.[33] Experts have argued that this has been a result of numerous factors, including advancements in aircraft equipment and technologies, improved pilot training, improved education programs, and advocacy efforts across the general aviation community.[34] However, general aviation has the highest aviation accident rates within civil aviation—in 2012, the NSTB found in a side-by-side comparison that general aviation accident rates were about six times higher than small commuter and air taxi operations and over 40 times higher than larger transport category operations.[35]

As required by section 308 of the *FAA Reauthorization Act of 2018* (Pub. L. 115-254), the FAA, in coordination with the National Transportation Safety Board (NTSB) conducted a study of all general aviation accidents from 2000 through 2018.[36] The study showed there were 18,481 general aviation accidents that involved 18,613 aircraft over that period, resulting in 3,647 fatal accidents.[37] When taking all factors into consideration, the most common type of factors for general aviation accidents analyzed by the FAA and NTSB involved the pilot's control of the aircraft and actions or decisions—particularly those related to weather.[38] The NTSB's 2020 accident statistics report found that most aviation-related deaths in 2020 took place during general aviation operations, where 332 people were killed, compared to 414 people the year before.[39] The 2020 fatal accident rate in general aviation was 1.049 accidents per 100,000 flight hours, compared to the 2019 rate of 1.064.[40]

Subsequently, the FAA, the general aviation community, and Congress have made efforts to improve general aviation safety, including reforming the aircraft certification process. Efforts have included revising the third-class medical certificate process used by recreational and private pilots

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[31] *Id.*
[32] *Id.*
[33] Bureau of Transp. Stat., *U.S. General Aviation Safety Data* (last visited: July 12, 2022), *available at https://www.bts.gov/content/us-general-aviationa-safety-data*.
[34] *See* Safety and Gen. Aviation: Hearing Before the Subcomm. on Aviation & Operations of the Senate Comm. on Commerce, Sci. & Transp., 114th Cong. (Apr. 28, 2015) (statement of Margaret Gilligan, Assoc. Admin. For Aviation Safety, FAA); s*ee also* Zimmerman, *General Aviation Safety Trends: What Should We Worry About?*, Plane&Pilot Magazine (Dec. 13, 2021) *available at* https://www.planeandpilotmag.com/news/pilot-talk/2021/12/13/general-aviation-safety-trends-what-should-we-worry-about/; *see also General Aviation Safety Continues To Improve*, Plane&Pilot Magazine (Dec. 18, 2019) *available at* https://www.planeandpilotmag.com/article/general-aviation-safety-continue-improve/.
[35] NTSB, *NTSB Most Wanted List: Improve General Aviation* (2012)*, available at:* https://www.ntsb.gov/Advocacy/mwl/Documents/ga_safety.pdf.
[36] FAA Reauthorization of Act of 2018, Pub. L. 115-254, Sec. 308 (Oct. 5, 2018).
[37] FAA, *Report to Congress, Federal Aviation Administration and National Transportation Safety Board Review of General Aviation Safety* (Jan. 13, 2021), *available at* https://www.faa.gov/about/plansreports/ntsb-review-general-aviation-safety.
[38] *Id.*
[39] NTSB, *U.S. Civil Aviation Fatalities and Flight Activity Decreased in 2020* (last updated: Nov. 2021), *available at* https://www.ntsb.gov/news/press-releases/Pages/NR20211117.aspx.
[40] *Id.*

(not for hire), and initiatives such as the Non-Required Safety Enhancing Equipment (NORSEE) policy, a joint collaboration between industry and government designed to decrease the barriers for general aviation operators to voluntarily install non-required safety equipment on their aircraft.[41]

Since 2000, the NTSB has issued 294 safety recommendations addressing issues related to non-commercial general aviation operations.[42] Of the 296 recommendations, 231 have been closed, while 63 recommendations remain open.[43] Most recently, the NTSB issued a safety recommendation to the FAA to require all enclosed-cabin aircraft with reciprocating engines be equipped with a carbon monoxide (CO) detector.[44] The NTSB also recommended that pilot groups inform their members about potential CO poisoning in flight and encourage their members to install CO detectors with active aural or visual alerting systems.[45] This recommendation stemmed from previous investigations and reports of aircraft accidents in which undetected CO poisoning led to pilot impairment and subsequent fatal or serious injuries due to crashes.[46]

III. Fuels, Power, and New Technologies

A. Leaded Aviation Fuels

Overview and Subsequent Health Concerns

The U.S. general aviation fleet largely consists of piston-engine aircraft, and have one or more piston-powered engines connected to a propeller to provide thrust to move the aircraft on the ground and through the air.[47] According to the National Academies of Sciences, Engineering, and Medicine, "nearly all the country's approximately 170,000 active piston-engine aircraft burn a grade of aviation gasoline (avgas), designated as '100LL,' that contains lead."[48]

Avgas remains one of the only transportation fuels in the United States to contain lead, with more than 222,600 registered piston-engine aircraft that can operate on leaded avgas.[49] This leaded fuel contains tetra-ethyl-lead, which is an additive used to prevent engine damage at higher power settings. Because 100LL can be used by all kinds of piston-engine aircraft, this single grade is the only type of fuel consistently available for general aviation operations and is the only FAA-certified fuel for use by these aircraft..[50] Although the FAA does not have direct regulatory responsibility for

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[41] FAA, *General Aviation Safety* (last updated: July 30, 2018), *available at* https://www.faa.gov/newsroom/general-aviation-safety?newsId=21274.
[42] FAA Report to Congress, *supra* note 38.
[43] *Id.*
[44] NTSB, *Require Carbon Monoxide Detectors in Certain General Aviation Aircraft* (Dec. 2021), *available at* https://www.ntsb.gov/investigations/AccidentReports/Reports/AIR2201.pdf.
[45] *Id.*
[46] *Id.*
[47] Nat'l Acad. of Sci., *Options for Reducing Lead Emissions from Piston-Engine Aircraft,* Transp. Res. Board Spec. Rep. 336 (2021), *available at* https://nap.nationalacademies.org/read/26050/chapter/1#vii..
[48] *Id.*
[49] *Id; see also* FAA, *Aviation Gasoline*, (last visited: July 12, 2022) *available at* https://www.faa.gov/about/initiatives/avgas#:~:text=Avgas%20remains%20the%20only%20transportation,Lead%2C%20also%20known%20as%20100LL.
[50] *Id.*

aviation fuels, it provides the initial certification approval of the aircraft with the fuel it operates on, and it oversees aircraft operators to ensure use of the correct fuel.[51]

The use of leaded aviation fuel has raised public health concerns in communities across the country, particularly its effects on children.[52] According to the Centers for Disease Control and Prevention, exposure to lead in children can lead to decreased cognitive performance, damaging the brain and nervous system, and potentially leading to long-term learning and behavioral problems.[53]

Unleaded Aviation Fuel Alternatives

There are numerous ongoing efforts to research and develop unleaded aviation fuel alternatives. However, additional testing to validate whether these fuels will work properly and are compatible with a majority of piston-engine aircraft is still needed.[54] Last year, General Aviation Modifications, Inc. (GAMI) received two supplemental type certificates (STC) authorizing the use of its new G100UL high-octane unleaded avgas.[55] One STC covers a limited number of models of Lycoming engines and the second is for a limited number of Cessna airframes.[56] GAMI is working with Avfuel Corp. to distribute the fuel, but it will take time to scale up production and make the fuel available fleetwide.[57]

In February 2022, the FAA, the Environmental Protection Agency, fuel suppliers and distributors, airports, and engine and aircraft manufacturers joined together in announcing the Eliminate Aviation Gasoline Lead Emissions (EAGLE) Initiative—an initiative to permit both new and existing general aviation aircraft to operate lead-free, without compromising aviation safety and the economic and broader public benefits of general aviation.[58] Specifically, the initiative seeks to (1) establish the necessary infrastructure, efficient distribution channels, and widespread usage of unleaded fuels; (2) support research and testing of piston engine modifications and/or engine retrofits necessary for unleaded fuel operations; and (3) address fleet-wide authorization of unleaded aviation fuels of different octane levels.[59]

B. Sustainability in General Aviation

To further reduce aviation's carbon footprint and help achieve the FAA's goal of net zero greenhouse gas emissions by 2050, U.S. airports are collaborating with airlines and renewable fuel manufacturers to facilitate the storage and distribution of low and zero emission aviation

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[51] *Aviation Gasoline*, *supra* note 50.
[52] Katie Lauer, *East San Jose community takes to the skies, rallying behind Reid-Hillview Airport,* The Mercury News (Jun. 2022), *available at* https://www.mercurynews.com/2022/06/18/east-san-jose-community-takes-to-the-skies-rallying-behind-reid-hillview-airport/.
[53] CDC, *Health Effects of Lead Exposure* (last updated: Mar. 9, 2022), *available at* https://www.cdc.gov/nceh/lead/prevention/health-effects.htm.
[54] FAA briefing for Committee Staff (June 2, 2022).
[55] AOPA, *GAMI receives unleaded AvGas STC* (July 2021), *available at* https://www.aopa.org/news-and-media/all-news/2021/july/27/gami-receives-unleaded-avgas-stc
[56] *Id.*
[57] *Id.*
[58] *Aviation Gasoline, supra* note 50 at Path to a Lead-Free Aviation System – the EAGLE Initiative; *see also* FAA, *FAA, Industry Chart Path to Eliminate Lead Emissions from General Aviation by the end of 2030* (Feb. 23, 2022), *available at* https://www.faa.gov/newsroom/faa-industry-chart-path-eliminate-lead-emissions-general-aviation-end-2030.
[59] *Id.*

technologies.[60] Many private jet companies and manufacturers, general aviation airports, and other general aviation stakeholders plan to utilize many of these technologies to help reduce their carbon footprint.

Electrification

One of these technologies includes the development of full or hybrid electric aircraft, which operate using battery-powered electricity for power, rather than standard liquid fuels.[61] Several airlines and advanced air mobility companies are seeking to use this technology for smaller aircraft operating shorter flights.[62] Existing small airports and airport infrastructure, such as general aviation airports or heliports, are being considered to be utilized by these new, technologically advanced aircraft once deployed.[63]

However, because battery-powered technologies are not as energy dense as liquid fuels, and thus require additional bulk and weight to achieve a comparable amount of energy, battery-powered aircraft face significant aerodynamic challenges.[64] Such design and operational challenges are likely to affect the range and speed of battery-powered aircraft.[65] Therefore, further technological developments are needed before electrification can be safely and economically adopted for medium and long-haul flights.[66]

The FAA is working to develop the regulatory framework for the certification and operation of electric vertical takeoff and landing (eVTOL) aircraft.[67] In May 2022, the agency determined it will transition away from using the certification pathway for small airplanes (under 14 Code of Federal Regulations (CFR) Part 23). Instead, the FAA will pursue the pathway for "powered-lift" aircraft with special conditions (under 14 CFR Part 21.17(b)).[68] During the subcommittee's May 17, 2022, hearing titled, "Preparing for Take-Off: Examining Efforts to Address Climate Change at U.S. Airports," GAMA expressed concerns about the FAA's ability to establish this framework within eVTOL aircraft manufacturers' anticipated certification timelines.[69]

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[60] Airports Council Int'l (ACI), *Sustainability Strategy for Airports Worldwide,* (Nov. 2021), at 18, *available at* https://aci.aero/2021/11/16/aci-world-launches-inaugural-sustainability-strategy-report-for-airports-worldwide/#:~:text=In%20June%202021%2C%20ACI%20member,management%20certification%20standard%20for%20airports.

[61] Elissa Garay, *Electric Planes Are Coming Sooner Than You Think,* Afar Magazine (Mar. 2, 2022), *available at*: https://www.afar.com/magazine/electric-planes-are-coming-sooner-than-you-think.

[62] *Id.*

[63] Cmty. Air Mobility Initiative, *Airports and Advanced Air Mobility: Integrating the Third Dimension into Metropolitan Transportation Systems,* (September 3, 2020), *available at:* https://www.nctcog.org/nctcg/media/Transportation/Committees/ATAC/2020/Website-Presentations_9-3-20.pdf?ext=.pdf.

[64] Garay, *supra* note 60.

[65] *Id.*

[66] *Id.*

[67] Jon Ostrower and Elan Head, *FAA Changes Course on EVTOL Certification*, The Air Current (May 9, 2022), *available at:* https://theaircurrent.com/aircraft-development/faa-changes-course-on-evtol-certification/

[68] *Id.*

[69] Treena Hein, *How the FAA is proceeding with rules for eVTOL type certification and operation*, evtol.com (July 6, 2022), *available at* https://evtol.com/features/how-faa-proceeding-rules-evtol-type-certification-operation/.

Sustainable Aviation Fuels (SAF)

For turbojet aircraft, SAF, a type of jet fuel refined from biomass, waste streams, or gaseous carbon oxides, has emerged as a leading contender to reduce aviation emissions.[70] Depending on the type of feedstock, SAF offers a carbon lifecycle reduction of up to 80 percent when compared to conventional jet fuel.[71] Unlike other proposals to lower emissions, SAF is a drop-in fuel that works in existing aircraft and can utilize most of the fueling infrastructure already in place.[72]

While SAF holds tremendous potential to help reduce carbon emissions in the aviation industry, significant barriers to widespread adoption remain. For instance, SAF is significantly more expensive to produce and purchase than conventional jet fuel.[73] These high costs lead to SAF being produced in smaller quantities, resulting in limited availability.[74] Today, SAF is estimated to account for just .05 percent of jet fuel use.[75] Additionally, SAF must currently be blended with conventional jet fuel, although the low availability of SAF mitigates this issue in the short term.

[70] Nate Brown & Anna Oldani, *Sustainable Aviation Fuels (SAF),* FAA (March 10, 2021), *available at*: https://www.faa.gov/about/office_org/headquarters_offices/ang/redac/media/environment/2021/march/envandenergy_mar2021_SAFUpdate.pdf.
[71] Int'l Air Transport Assoc. (IATA), *Developing Sustainable Aviation Fuel (SAF)* (last visited: July 7, 2022)*, available at*: https://www.iata.org/en/programs/environment/sustainable-aviation-fuels/.
[72] IATA, *What is SAF* (last visited: July 7, 2022) at 1, *available at*: https://www.iata.org/contentassets/d13875e9ed784f75bac90f000760e998/saf-what-is-saf.pdf.
[73] Christina Brooks, *Sustainable Aviation Fuel Still in Short Supply Due to Cost,* HIS Markit (July 7, 2021), *available at:* https://cleanenergynews.ihsmarkit.com/research-analysis/sustainable-aviation-fuel-market-still-in-infancy-due-to-cost-.html#:~:text=SAF%20prices%20are%20currently%20about,issues%20even%20more%20prominent%20today.
[74] *Id.*
[75] Elan Head, *Understanding the Path to 100% SAF,* The Air Current (April 13, 2022), *available at*: https://theaircurrent.com/technology/path-to-100-saf-sustainable-aviation-fuel/.

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