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Sustainable Aviation Fuel

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Disclaimer

About RMI

RMI is an independent nonprofit, founded in 1982 as Rocky Mountain Institute, that transforms global energy systems through market-driven solutions to align with a 1.5°C future and secure a clean, prosperous, zero-carbon future for all. We work in the world's most critical geographies and engage businesses, policymakers, communities, and NGOs to identify and scale energy system interventions that will cut greenhouse gas emissions at least 50 percent by 2030. RMI has offices in Basalt and Boulder, Colorado; New York City; Oakland, California; Washington, D.C.; Abuja, Nigeria; and Beijing.

About RMI's work in the Aviation Sector

SABA

Spearheaded by RMI and Environmental Defense Fund (EDF), the Sustainable Aviation Buyers Alliance (SABA) is working to accelerate the path to net-zero air transport by driving investment in sustainable aviation fuel (SAF), catalyzing SAF production and technological innovation, and supporting member engagement in policymaking efforts.

SAFc Registry

Working with EDF, SABA and Energy Web, we've launched a rigorous, transparent SAF certificate system to aggregate demand for SAF and help eliminate barriers to adoption. The system will expand SAF investment opportunities to all businesses, organizations, and even individuals interested in reducing the climate impacts of air transport. It will accelerate the use and bring down the costs of SAF, to help drive aviation emissions reductions at the scale and pace that the science demands.

SAF Supply

RMI's multifaceted support for SAF project developers includes technoeconomic analyses, policy insights, and assessments of SAF feedstock, technology, and economic viability through our work on Mission Possible Partnership's clean industrial hubs.

Additionally, we have conducted research on specific geographic regions that have access to SAF feedstock, can host feedstock processing facilities, have robust transport networks, and are near demand centers, such as airports or have export capabilities to domestic and international markets.

Contrail Impact Task Force

The RMI-led Contrail Impact Task Force (CITF) convenes stakeholders from across the aviation value chain including academic researchers, technology providers, airlines, OEMs, industry groups, and regulators with the goals of expanding upon the latest science on the climate impact of contrails, exploring and testing potentially actionable strategies to safely avoid warming contrails, identifying the operational and financial challenges of implementing potential solutions, and establishing a roadmap for implementation and validation of contrail mitigation tools.

Financing Aviation Decarbonization

The financial sector will play a crucial role in funding the technologies and projects needed to transition the aviation sector to net zero. To support this role, RMI's Center for Climate-Aligned Finance worked with top lenders to the aviation sector to develop the Pegasus Guidelines. The Guidelines include an emissions intensity metric, a reference 1.5°C scenario-based benchmark, and technical resources to enable the sourcing of high-quality data that empowers financial institutions to understand their aviation lending portfolio and engage with their clients to help fund their decarbonization projects.

Foreword

The decarbonization of the aviation sector stands as one of the most complex and crucial challenges of our time. In an era defined by growing climate urgency, the aviation industry's dependence on fossil fuels and its contribution to global emissions require innovative, scalable, and sustainable solutions. Sustainable Aviation Fuel is a cornerstone in this transformation, offering the potential to significantly reduce the carbon footprint of air travel while maintaining the efficiency and safety the world has come to rely on.

Our SAF Market Outlook provides a comprehensive analysis of the evolving landscape of sustainable aviation fuels, offering key insights into its current state, future potential, the pathways needed for it to play a pivotal role in aviation's net-zero ambitions and is a natural extension of our work in the sector. We at RMI are deeply committed to fostering innovation and collaboration across industries to drive impactful climate solutions.

This outlook reflects our ongoing efforts to not only understand the opportunities and challenges inherent in the SAF market but also to highlight the policy, investment, and technological developments that are critical for its advancement.

We hope that this report serves as a valuable resource for policymakers, industry leaders, investors, and innovators who are committed to accelerating the transition to sustainable aviation. Together, we can reshape the future of flight.

Sincerely,

Andrew L. Chen

Principal, Aviation – Climate Aligned Industries, RMI

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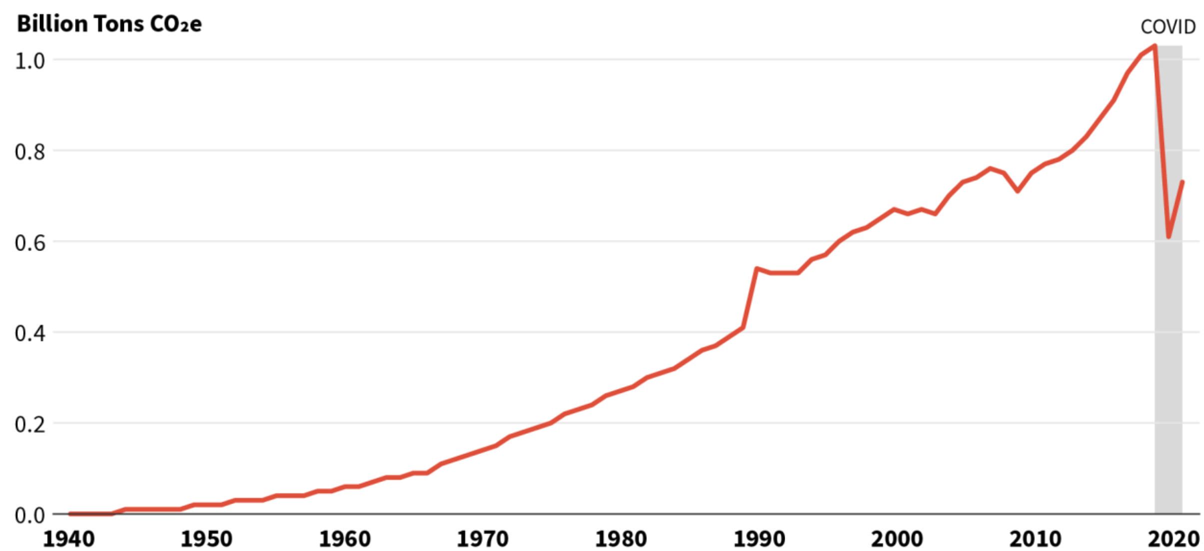
Reducing Aviation Emissions

In 2024, global aviation is expected to consume approximately 107 billion gallons of jet fuel and emit 1.24 billion tons CO_2e into the atmosphere. Aviation emissions have shown a consistent upward trend over the past few decades, driven primarily by significant passenger growth. As global incomes have risen, air travel has become more accessible to a broader population, leading to an increase in the number of flights and, consequently, higher emissions. Historically, the aviation sector's CO_2 emissions have been growing faster than those of many other sectors, reflecting the expanding demand for air travel. Currently, aviation accounts for about 2%-3% of global CO_2 emissions, with commercial passenger flights being the largest contributor. Additionally, studies have shown that non-CO_2 aviation effects such as contrails have a significant climate impact, potentially ranging from half to over three times that of CO_2 emissions.

Rising CO_2 emissions from aviation

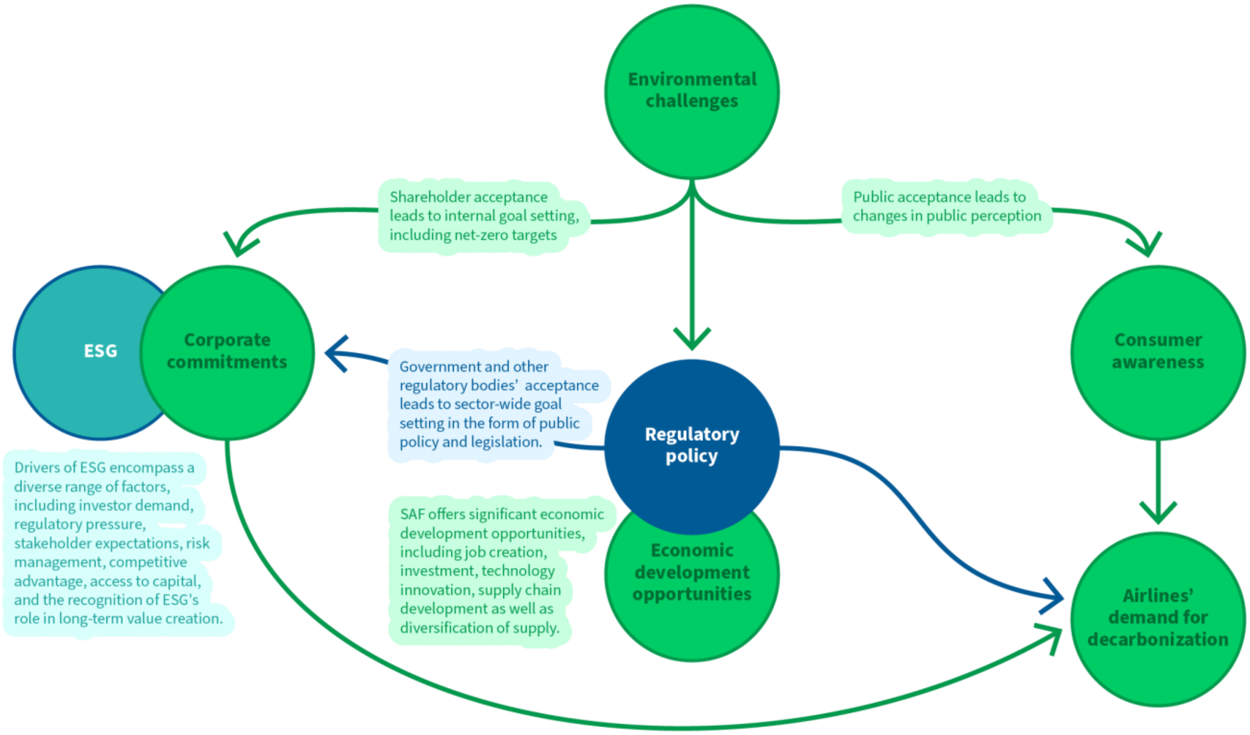


Source: Bergero et al. (2023). Pathways to net-zero emissions from aviation. Nature Sustainability, 6(4), 404-414.

In response to these challenges, policy makers, airlines — which report emissions as a part of Scope 1 disclosures — and other actors across the aviation value chain including airlines' corporate customers — who report business travel emissions as a part of their Scope 3 disclosure — and renewable fuel producers have been exploring alternative solutions to mitigate the aviation sector's environmental footprint.

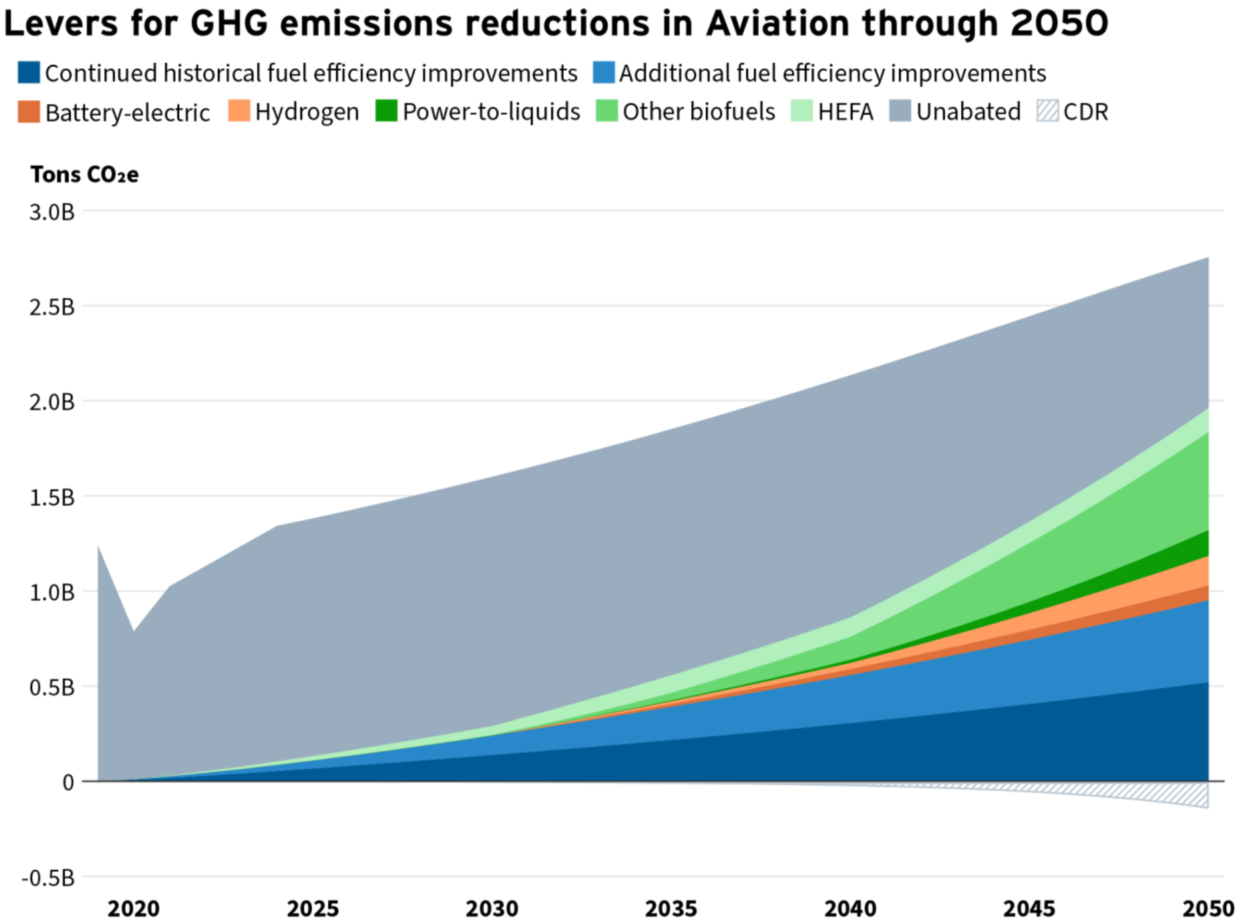
What are the drivers of aviation decarbonization?

A perspective from RMI's Climate Aligned Industries' Aviation Initiative.



There are several pathways to reducing emissions associated with aviation. RMI has conducted a global "reality forward" analysis and projection that incorporates real project milestones reported from industry. In the scenario outlined in the RMI graphic, in 2050, approximately 25% of global emission reductions in aviation will come from continuation of historical trends in fuel efficiency improvements relating to the design of aircraft and engines and optimization of flight procedures, while an additional 20% comes from enhanced efficiency beyond these historical trends. Battery-electric and hydrogen-powered aircraft, although still in the early stages of development, are expected to contribute around 3.5% and 7% of global reductions in 2050, respectively, with uptake starting in the late 2030s and early 2040s. In this scenario, unabated aviation emissions in 2050 would still reach 700 million metric tons of CO_2e and beyond.

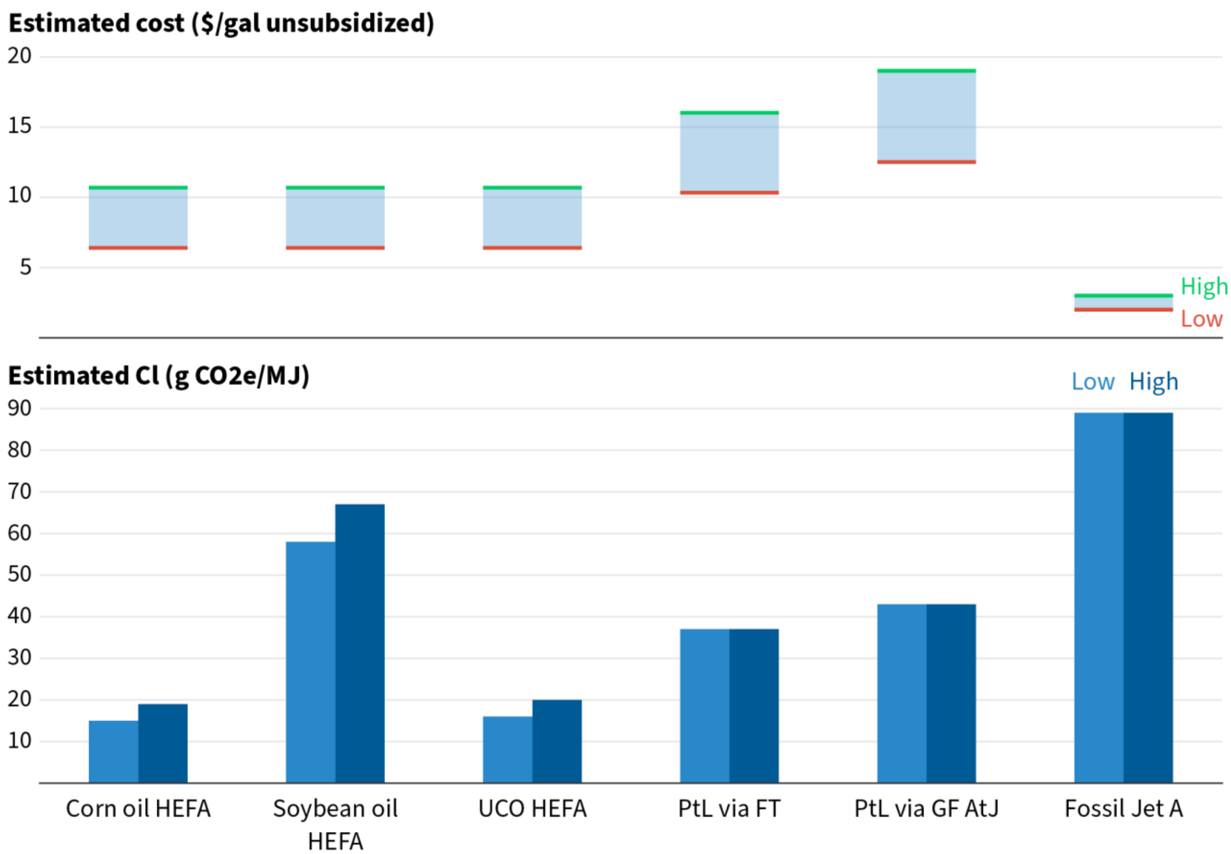
Most notably, approximately 38% of global projected aviation sector emissions reductions in 2050 will be attributable to the deployment of SAF and its displacement of fossil jet fuel.



Source: RMI Analysis, Adapted from the Prudent Scenario from Mission Possible Partnership's Aviation Transition Strategy, July 2022

Sustainable Aviation Fuel, or SAF, is a cleaner alternative to traditional jet fuel that can reduce lifecycle greenhouse gas (GHG) emissions by as much as 90% or more. SAF is produced from a variety of low-carbon feedstocks that must have a combined GHG savings of 50% from conventional fossil jet fuel. SAF, once blended with conventional jet fuel, is a drop-in solution that does not require modifications to existing aircraft or infrastructure.

Initially, SAF was primarily used in small-scale trials and demonstration flights. However, since the mid-2010s, the SAF market has evolved significantly, driven by commitments from airlines and corporate customers and supported by advances in production technology and favorable regulations. Since the first SAF pathway was approved by ASTM in 2009, 11 pathways have been approved, each using different technologies and/or feedstocks. The Hydrotreated Esters and Fatty Acids (HEFA) process is currently the commercially dominant pathway for SAF production. Despite its tremendous growth in recent years, overall SAF production remains limited compared to conventional jet fuel, with high production costs being the primary challenge.



Source: RMI Analysis

Because SAF is a critical element on the path to aviation emissions reductions, it becomes vital to understand how the market, inclusive of supply, demand, and policy, of this nascent commodity is progressing. A global, forward-looking market analysis helps stakeholders make investment decisions, understand the impact of policy, develop national and sub-national strategies, optimize supply chains, and more.

Global SAF Policy

A complex web of policy and regulations shapes the global aviation sector and its trajectory towards a safer, more sustainable future. In line with the global consensus on climate action, ICAO has set forth its Long-term Aspirational Goal (LTAG). This objective seeks to mitigate the environmental impact of aviation, aiming for carbon-neutral growth from 2020 onwards and net-zero carbon emissions by 2050. Alongside, the International Air Transport Association (IATA), representing airlines worldwide, set its own aspirational goal, striving for a future where aviation is carbon neutral by 2050.

Apart from international regulators' aspirational targets, national policies play a pivotal role in shaping the aviation landscape. From tax incentives for SAF to stringent emissions regulations, governments wield considerable influence over the industry's direction. Mandates for SAF's use have been passed in large aviation markets, most notably in the EU, but also in the UK, Singapore, and Norway. Additional countries have signaled that they are considering their own SAF mandates, such as India and Japan.

The ReFuelEU policy aims to significantly reduce aviation emissions within the European Union by mandating a progressive increase in the use of SAF. Starting with a 2% SAF blend in 2025, the policy ramps up to a 70% blend by 2050, including a sub-mandate for synthetic "e-fuels" at lower levels. Similarly, the UK's JetZero strategy also focuses on achieving net zero aviation by 2050 through the mandated development and adoption of SAF along with an "e-fuels" sub-mandate. Other active or proposed mandates in Norway, Singapore, and Japan follow a similar structure.

US Policy

In September 2021, the US Department of Energy announced the SAF Grand Challenge, which aims to scale US SAF production to at least 3 billion gallons annually by 2030. Although the United States has no blending mandates, as in the European Union, multiple federal and state-level incentives have been introduced to encourage the growth of SAF as a key component in reducing the carbon footprint of aviation. The federal Renewable Fuel Standard (RFS) has been instrumental in supporting these efforts by promoting the integration of renewable fuels including SAF into the transportation supply. The Inflation Reduction Act (IRA) of 2022 introduced further incentives, including Section 40B, and Section 45Z, which ties credits to the lifecycle GHG emissions of fuels. These policies have led to significant momentum in the US SAF market but are scheduled to go offline after 2027.

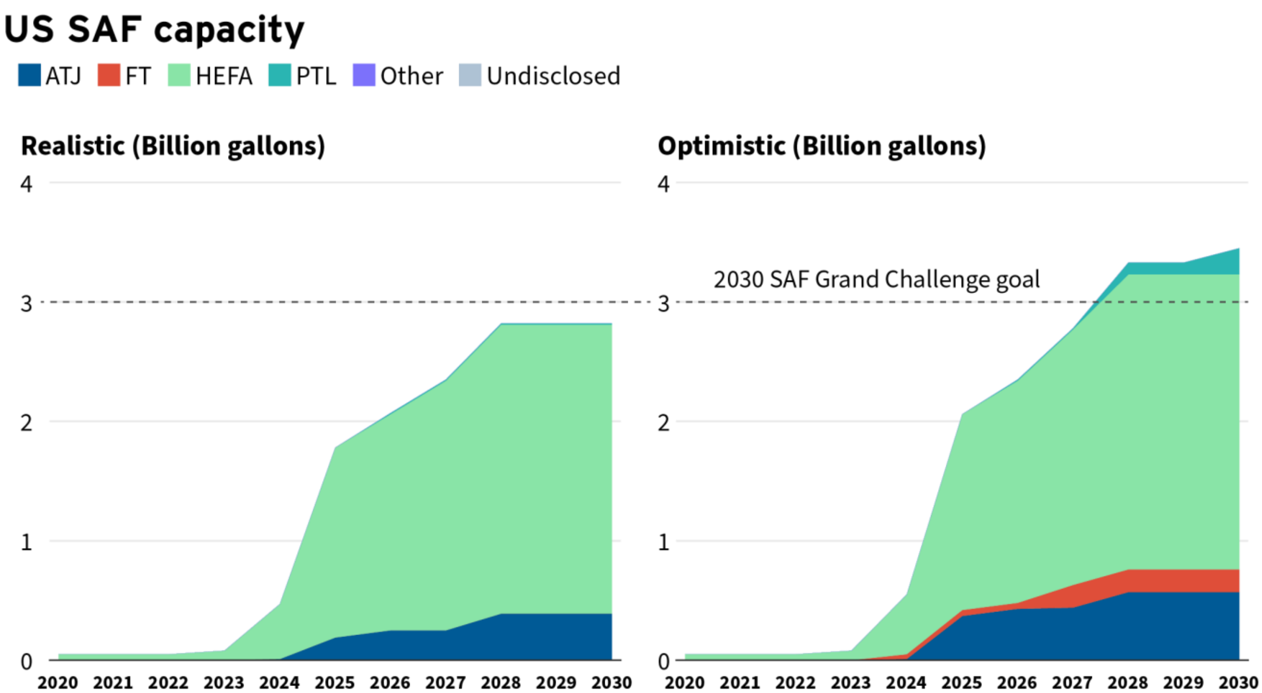
The success seen with the IRA highlights the need for continued policy support and expanded incentives to ensure the United States remains at the forefront of global leadership in renewable fuels while achieving its net-zero goals for aviation. The US SAF market is significantly buoyed but not entirely dependent on tax benefits and policy incentives to drive production, commercialization, and adoption. However, these incentives are robust mechanisms to deploy SAF and are essential in bridging the economic gap between SAF and conventional jet fuel, which remains significantly cheaper to produce due to established supply chains and economies of scale.

At the state level, California's Low Carbon Fuel Standard (LCFS) is a pioneering policy aimed at reducing the carbon intensity of transportation fuels. Introduced in 2011, the LCFS operates on a cap-and-trade-like system where fuel producers and importers must meet declining carbon intensity targets each year. SAF is eligible under the LCFS and can generate credits when it is used in California. The credits are based on the fuel's carbon intensity relative to the LCFS benchmark, with lower carbon fuels generating more credits. These credits can then be sold or traded, providing a direct financial incentive for SAF producers and users. Beyond California, Oregon has adopted a Clean Fuels Program similar to the LCFS, Washington State has recently implemented its own Clean Fuel Standard, and New Mexico adopted a Clean Transportation Fuel Standard. These programs, while smaller in scale compared to California's LCFS, contribute to the growing market for SAF by creating additional demand and financial incentives. More states are considering implementing LCFS and incorporating SAF into their Emissions Trading Systems (ETS), including Michigan and Illinois.

In addition to the above, direct incentives at the state level are increasingly being targeted specifically at SAF. These include Washington State's SB 5447 SAF production tax credit, Illinois's SAF Purchase Credit (SAFPC), Minnesota's SAF refundable SAF production and sales tax credit SF 2753, and Colorado's HB23-1281 Hydrogen Production Tax Credit.

Regional Insights

Americas



Source: RMI Analysis

In the Americas region, which encompasses both North and South America, the United States and Canada are at the forefront of Sustainable Aviation Fuel (SAF)-friendly policies. Brazil and Argentina also possess a diverse array of bio-feedstocks that support SAF production.

- The United States has a robust agricultural foundation, with ample land available for dedicated biomass cultivation, provided its use is prioritized for SAF production. Coupled with incentives from the Renewable Fuel Standards and the Inflation Reduction Act—specifically provisions 40B and 45Z—along with state-level incentives (both direct production incentives and through carbon markets), this creates a conducive environment for scaling SAF production.
- In addition to the three operational facilities in the United States today, there are 37 SAF projects currently under development in the United States – 15 of these projects are HEFA, making it the leading SAF pathway from a project deployment perspective, followed by ATJ and FT.

- The SAF Grand Challenge initiated by the US Department of Energy, Department of Transportation, and the Department of Agriculture, to sustainably scale SAF production, has set the domestic goal for 3 billion gallons per year of SAF capacity by 2030 and 35 billion gallons per year by 2050. The graphics here show that the US is roughly on-track to achieving its 2030 goals, assuming 70% or more of announced projects succeed and reach commercial operations.
- Canada supports SAF initiatives through a national Clean Fuel Standard, while British Columbia has implemented a provincial Low Carbon Fuel Standard (LCFS).

Asia-Pacific

The Asia-Pacific region, encompassing South Asia, Southeast Asia, Australia, New Zealand, China, and Russia, represents a significant market for aviation fuels, with countries such as China, Russia, Japan, Hong Kong, India, and Singapore leading in consumption.

- Currently, China accounts for 11% of global jet fuel usage and is the world's second-largest aviation market. A policy mandating a 2-5% SAF fuel mix is anticipated to be launched later this year, with 31 Chinese airlines, as members of IATA, committed to achieving net-zero emissions from their operations. China's 14th Five-Year Plan for Green Civil Aviation Development promotes SAF use, targeting over 20,000 tons of consumption by 2025 and a cumulative 50,000 tons throughout the plan period. The country has significant feedstock availability, including being the world's largest used cooking oil (UCO) producer, which is expected to be a major feedstock for the HEFA pathway.
- Currently, Russia lacks a formal mandate for SAF, with its approach to SAF development and adoption remaining relatively limited compared to other regions.
- In Japan, the Ministry of Economy, Trade and Industry (METI) and the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) are collaborating to promote SAF. As a result of their efforts, a draft interim report was presented in May 2023, targeting a 10% replacement of fuel consumption with SAF by 2030. The 2024 Tax Reform Act also features SAF, providing tax credits of ¥30 per liter (approximately US$0.79/gallon) to stimulate domestic investment. Japan aims to focus primarily on boosting domestic SAF production, including alcohol-to-jet SAF.
- India has set a 1% indicative blending target for 2027 and a 2% SAF blending target for 2028, initially for international flights. During the 2023 G20 Summit, India, the

United States, and Brazil launched the Global Biofuel Alliance to enhance the production and use of sustainable biofuels, including SAF.

- In Singapore, the Singapore Sustainable Air Hub Blueprint aims for a 20% reduction in domestic aviation emissions compared to 2019 levels by 2030, with a goal of achieving net-zero emissions by 2050. Starting in 2026, all departing flights will be required to incorporate SAF, beginning with a 1% target and escalating to 3-5% by 2030.
- In June 2023, Australia announced the establishment of the Jet Zero Council, aimed at reducing carbon emissions and fostering a local SAF industry, with Queensland identified as a key location for developing an Australasian SAF supply chain.

Europe

The geographical scope of Europe includes both the European Union (EU) and non-EU countries.

- For the 27 EU member states, the "Fit for 55" package is pivotal in their climate strategy. This initiative revises EU legislation to meet emissions reduction targets, specifically aiming for a 55% reduction by 2030. A critical component of this package is the reform of the EU Emissions Trading System (EU ETS), which seeks to expand its ambit to include additional industries. Within the Fit for 55 framework, the RefuelEU Aviation initiative focuses on lowering emissions from the aviation sector while ensuring that economic growth remains unhindered. This initiative mandates a gradual increase in SAF usage, requiring aviation fuel suppliers to include 2% SAF by 2025, escalating to 70% by 2050. Additionally, synthetic fuels, such as Power-to-Liquids (PtL), will be mandated starting in 2030, beginning with a minimum of 1.2% of the total aviation fuel supply and increasing to 35% by 2050.
- In the UK, the JetZero policy serves as the cornerstone of emissions reduction efforts within the aviation industry, targeting net-zero emissions by 2050. This policy outlines a reduction in emissions from 38.2 $MtCO_2e$ in 2019 to 19.3 $MtCO_2e$ by 2050, while mandating that SAF constitutes at least 10% of the fuel mix by 2030, estimated at approximately 1.2 million tons of SAF. Furthermore, the JetZero policy sets a goal for domestic flights and airport operations to achieve zero emissions by 2040.
- Norway has been a pioneer in implementing SAF blending mandates, having established a requirement for 0.5% of all aviation fuel sold to be SAF in 2020, with plans to increase this to 30% by 2030, aligning with RefuelEU standards.

Middle East and Africa

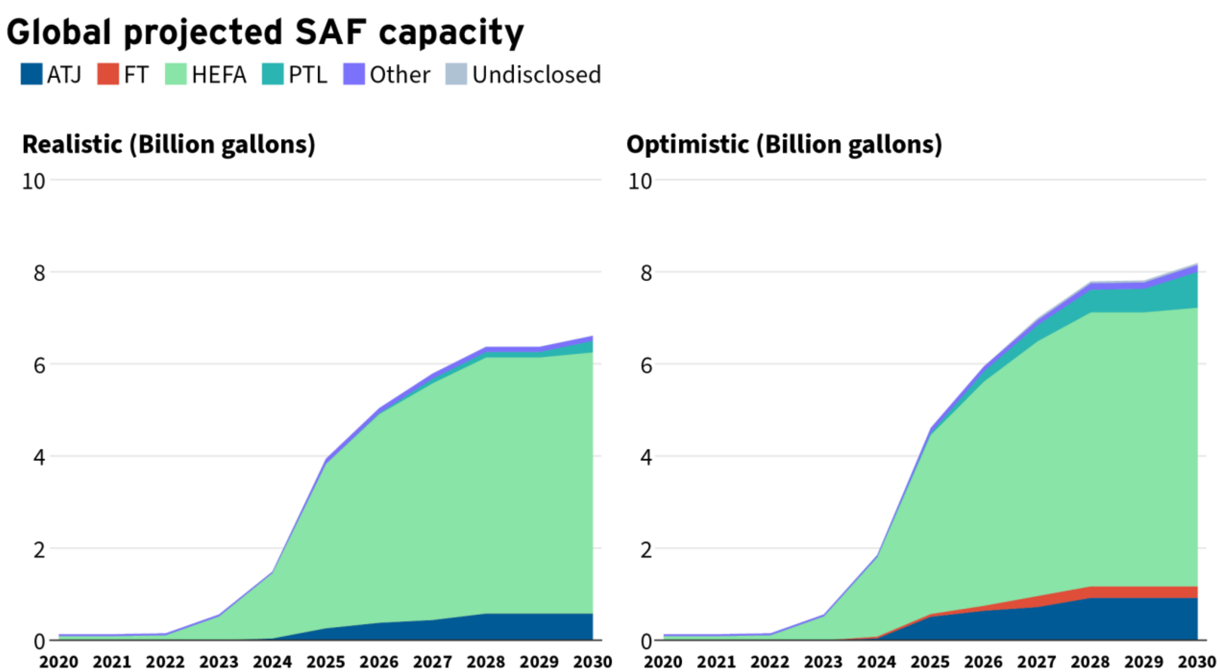
The Middle East and Africa are emerging as key players in the global push for SAF. In the Middle East, the UAE, Qatar, and Saudi Arabia are significant consumers of aviation fuels and are strategically located between Europe and Asia, serving as major aviation hubs. The UAE is spearheading efforts to incorporate SAF into its aviation sector, aligning with broader sustainability goals, and is investing in local SAF production to secure long-term supply. Saudi Arabia, as part of its Vision 2030 initiative, is actively exploring green hydrogen possibilities for the aviation sector, aiming to diversify its economy and reduce reliance on oil, though it currently lacks blending mandates.

In Africa, South Africa is the largest consumer of aviation fuels and plays a crucial role in SAF development. The country has a well-established aviation industry and has historically been a leader in alternative jet fuels, specifically synthetic kerosene derived from coal-to-liquid and gas-to-liquid processes utilizing the Fischer-Tropsch pathway. South Africa is now exploring local biomass and waste materials for SAF production to reduce emissions and fossil fuel dependence. Additionally, Nigeria, Kenya, and Ethiopia possess significant agricultural resources that can be leveraged for biofuel production, driven by rising aviation demand. In North Africa, Morocco and Egypt are focusing on enhancing renewable electricity generation, which could support PtL SAF production in the aviation sector.

Global SAF Supply

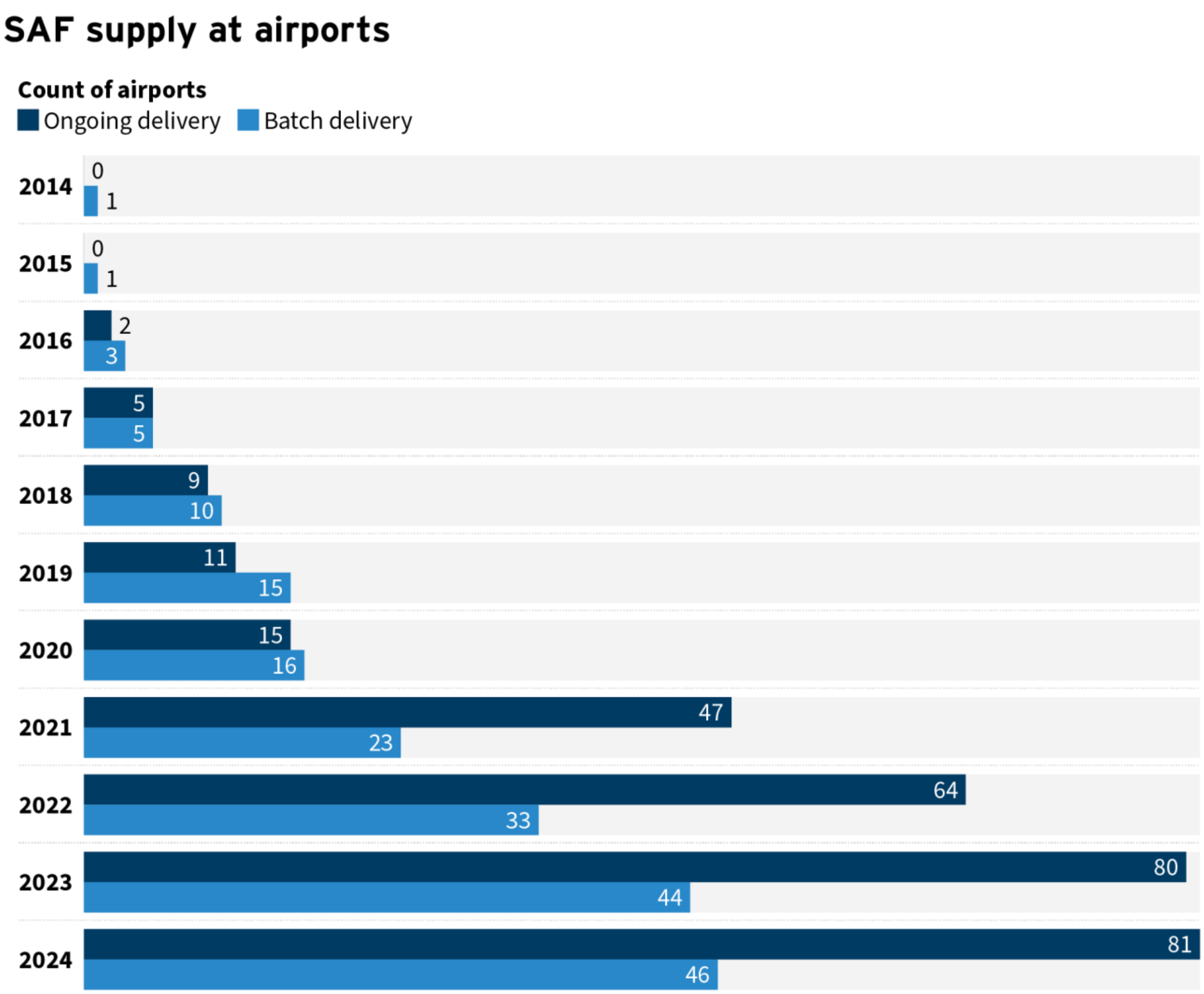
The Hydrotreated Esters and Fatty Acids (HEFA) process, with its established commercial viability, and successful history of deployment at large scale remains the most widely used SAF technology. The Gasification-Fischer-Tropsch (FT) and Alcohol-to-Jet (ATJ) processes offer scalable alternatives that utilize a broader range of feedstocks, but the scale of production capacity compared to HEFA projects in current announced project has tended to be smaller. Deployment issues with FT processes, especially when paired with non-homogenous feedstock, such as municipal solid waste and agricultural residues have proven to be difficult and caused delays and even several project abandonment & bankruptcies. Power-to-Liquids (PtL) represents the future of SAF, offering the potential for near-zero carbon fuels, but will require further technological and infrastructure development before it becomes a mainstream solution. As demand for SAF grows, driven by regulatory frameworks and corporate commitments, the continued evolution and commercialization of these technologies will be critical in supporting the aviation sector's sustainability goals.

Global SAF production surpassed 158 million gallons in 2023 and is on track to reach 500 million gallons per year in 2024. Neste's refinery in Singapore, by far the world's largest SAF production unit, started operations in 2023.



Source: RMI Analysis

SAF production globally is set to rise to approximately 6.1-8.2 billion gallons per year by 2030, considering operational, announced and development stage projects – about 16 times the current capacity of 500 million gallons per year. HEFA feedstock supply is forecast to continue rising and dominating the SAF market well into the 2030s, and is expected to plateau around 2035, largely due to plateauing collection efficiency improvements for Used Cooking Oils (UCO), and competition with other sectors such as on-road transport Fats, Oils and Geases (FOGs), which are the primary feedstock for the HEFA process.



Source: ICAO

The growing number of airports worldwide that accept SAF through continuous delivery, instead of in batches, shows that airports understand the importance of being ready for

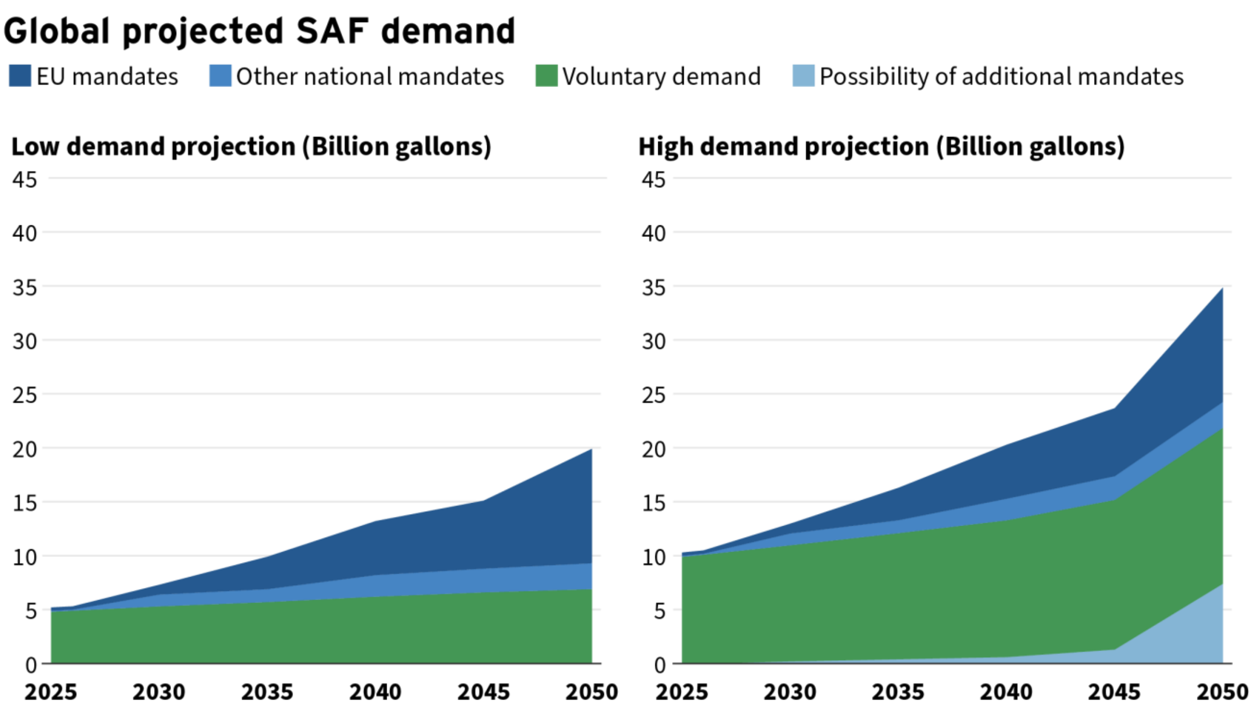
SAF in the future. This trend also highlights SAF’s evolution from a niche, emerging product to a marketable and monitored commodity.

Airports in the United States which are currently receiving regular continuous SAF deliveries include Los Angeles International (LAX), San Francisco International (SFO), and Chicago–O’Hare International (ORD).

Global SAF Demand

Assuming current SAF policies remain unchanged, global mandated demand for SAF is projected to reach around 2 billion gallons per year in 2030. The most significant of these mandates in terms of induced demand is the ReFuelEU mandate, while the UK, Norway, Singapore, and others have also established SAF mandates that will take effect in 2025 or later. Additionally, countries like India and Brazil have indicated interest in implementing SAF mandates.

Beyond mandated demand, voluntary purchasers, either corporate customers or airlines themselves, are expected to demand another ~5 billion gallons by 2030 assuming a subset of companies responsible for corporate air travel emissions continue to pursue emissions reductions in line with their stated climate goals.

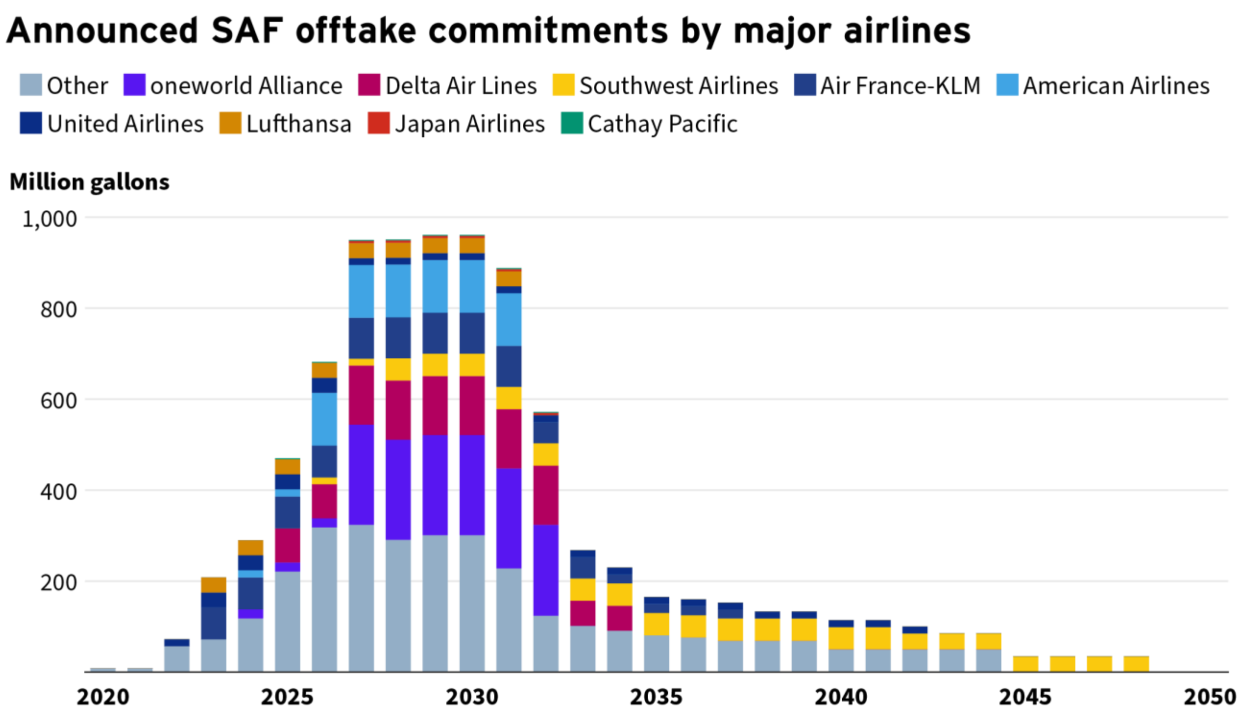


Source: RMI Analysis

The SAF market is currently experiencing a supply shortage with unrealized demand left on the table. Globally, roughly 500 million gallons of SAF are expected to be consumed in 2024, despite total demand projections significantly exceeding this figure. The United States recorded 24.5 million gallons of SAF consumed in 2023, a nearly fivefold increase since 2021, demonstrating the market's eagerness for new SAF production to come online.

Major airlines and corporate customers have signed long-term offtake agreements with SAF producers in order to provide a strong demand signal to the industry.

As of 2024, more than 40 airlines globally have committed to SAF targets, either as individual commitments or through their respective airline alliances, with the majority of targets aspiring to achieve 5%-10% of their overall jet fuel requirements through SAF by 2030. RMI analysis has found that while airlines and logistics service providers showed an average willingness to pay (WTP) almost three times the current price of fossil jet fuel, because airlines usually operate on thin margins, this "green premium" is almost always passed on to corporate customers to maintain financial viability. Non-airline corporate purchasers with a high willingness to pay often also have in-value chain emissions reductions goals and can contribute to the SAF market via SAF certificates (SAFc), see more on this below. This will play a crucial role in the market, particularly in the near term, as suppliers benefit from the ability to sell to highly motivated and credit-worthy corporate buyers.

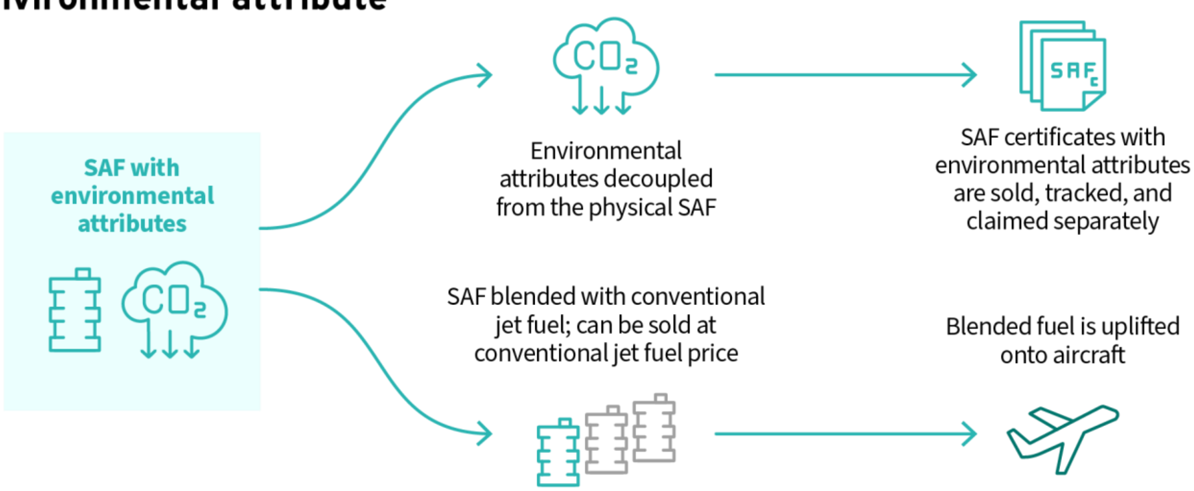


Source: ICAO

Book & Claim

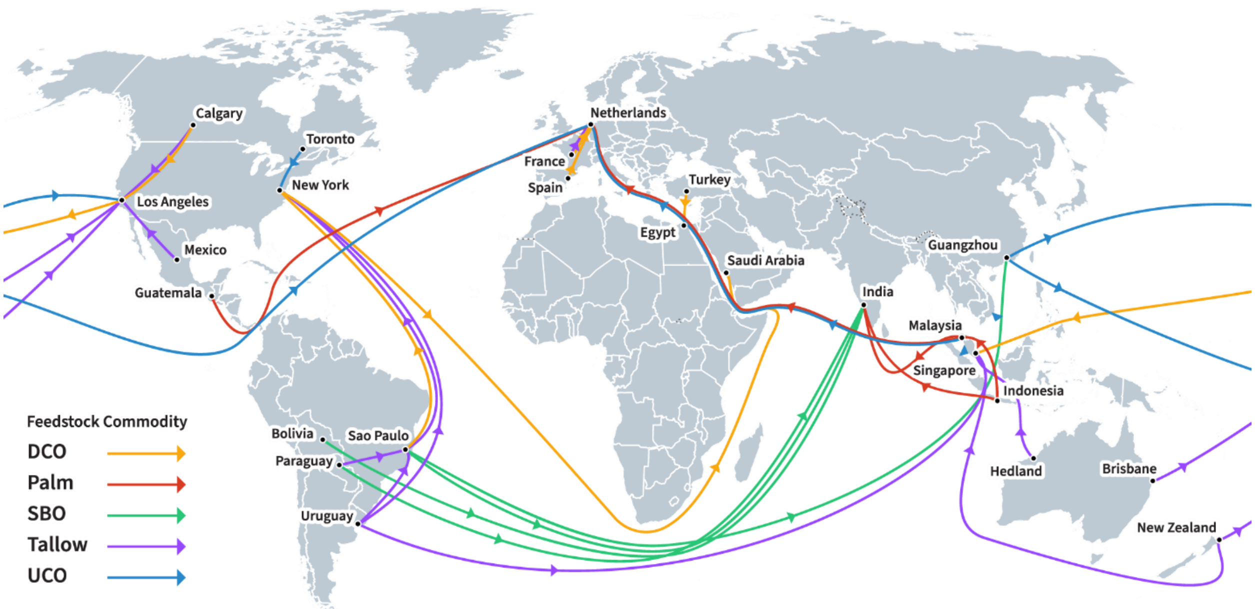
In many cases, corporate customers of cargo and commercial airlines who want to reduce their carbon footprint look at SAF as a tool for reducing emissions in their value chain via a book and claim system. Book and claim is a flexible model (often referred to as a chain of custody model) for verified information to flow throughout a supply chain — this allows clean fuel or materials producers to "book" the emissions savings of a good they have produced in one place, and customers to "claim" the emissions benefit from these goods for climate disclosures in a different place. Because corporate customers do not ordinarily purchase jet fuel or SAF, they cannot invest directly in SAF purchase or ensure that the flights their employees and goods travel on are actually using SAF. To overcome this barrier, they can use a book and claim system which tracks the environmental attributes of a volume of SAF through a certificate (SAFc). The book and claim system allows corporate customers to buy SAFc that represent the certified lifecycle emissions reductions from SAF-fueled trips and then report them in their corporate emissions disclosure, with an auditable and credible trail of ownership. Ideally, these SAFc purchases not only help close the "green premium" gap, but when coupled with long-term offtake agreements and aggregated demand, they can help boost supply by making a project significantly more bankable once guaranteed demand from a credit-worthy partner has been secured.

Environmental attribute



Global Trade Flows

The global trade of Sustainable Aviation Fuel (SAF) and its feedstocks is a complex network. Similar to traditional fossil fuels, SAFs must aggregate and upgrade feedstocks to refine. Many SAF feedstocks are derived from wastes, making their supply chains less mature and robust than the networks of fossil fuels.



Source: RMI Analysis

Unlocking fatty acids is key to fuels produced with the HEFA technology. Used cooking oil (UCO) and other waste fats, oils, and greases (FOGs) are primarily transported from Asia to Europe and North America. Additionally, South America plays a crucial role by supplying feedstocks like animal tallow and ethanol to North America. However, certain flows of feedstocks are susceptible to disruptions due to policy changes and supply chain insecurity. While the fatty acid landscape may seem nebulous at times, the reality is that the market has only just begun to tap into the potential volumes of these feedstocks.

There's currently no abundance of SAF – even HEFA is just starting to scale at volume. Given current projections for local production, the European Union may need to import fuels, especially Power-to-Liquid (PtL) fuels to meet the sub-mandate within the ReFuelEU legislation. Despite the optics of our current SAF supply outlook, alternative production pathways will continue to be approved along with a wider range of potential feedstocks. Early phases of work are even exploring 3rd generation feedstocks, like algae.

There are still large parts of the aviation market where physical SAF molecules are not available at all. This is often due to a lack of refining infrastructure rather than feedstock shortage. As more nations are becoming receptive to domestically produced biofuels and e-fuels, closing this infrastructure gap will necessitate even more strategies for securing feedstock supply chains.

One only has to look at the corn ethanol industry to understand the level of efficiency on the horizon for many of these feedstocks. Increased yields, better aggregation points, improved refining techniques – all lessons that can be applied to improve the market potential of SAF feedstocks. Undoubtedly, the immediate future lies in SAF, the only question is what it will be made from.

Aamir Shams, Corey Stewart, Hartej Singh, and Jason Humphrey, *Market Outlook October 2024 – Sustainable Aviation Fuel*, RMI, 2024, https://saf.rmi.org/.

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