

Sustainable Aviation Fuel (SAF)

The aviation industry is committed to achieving net-zero carbon emissions. SAF offers the largest potential to reduce those emissions over the next 20 to 30 years. Boeing has been a pioneer in making SAF a reality and believes aviation should be a priority user of sustainable fuel.

ENVIRONMENTAL BENEFITS

SAF lowers carbon emissions over the fuel's life cycle by up to 80%, depending on the feedstock. SAF can be made from a wide variety of sources: non-edible plants, agricultural and forestry waste, nonrecyclable municipal waste, industrial plant off-gassing and other feedstocks.



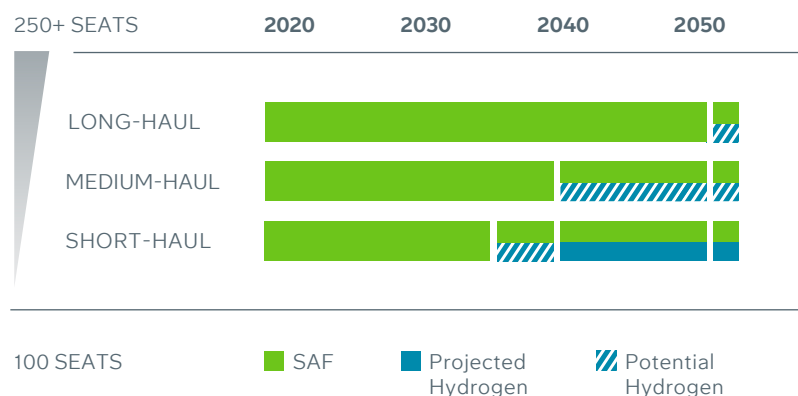
SAF: Plants and forestry trimmings absorb CO₂ through photosynthesis while they're growing, as shown in the graphic to the left. Other feedstocks transform CO₂ from a pollutant (e.g., household waste from landfills, off-gassing from industrial plants) into SAF.



FOSSIL: Fossil fuel production pulls carbon out of the earth and releases it into the air, further increasing atmospheric carbon emissions.

ADDITIONAL BENEFITS

- **Compatible with existing infrastructure.** SAF can be blended with regular jet fuel up to 50% that works with today's airplanes and does not require any changes to fueling infrastructure.
- **Economic impact.** SAF development and production deliver economic growth and create jobs across multiple industries.
- **Near-, mid- and long-term solution.** Decarbonizing commercial aviation will require a multifaceted approach. SAF is the most immediate solution and the largest contributor to meeting net-zero goals. Other technologies such as electric aircraft and green hydrogen require further development, certification and infrastructure.



Source: ATAG Waypoint 2050 Report

An indicative overview of where low- and zero-carbon energy could be deployed in commercial aviation.

365

DAYS / YEAR

SAF is
in regular
use today

enviro.aero/saf

Boeing is committed to delivering commercial airplanes capable to fly on

100% SAF

BY 2030

BOOK & CLAIM

Fuel users purchase or "book" SAF from a provider. The purchased SAF enters into a fuel system and is made available to other users. Only the purchasing fuel user receives or "claims" the SAF credit for the avoided emissions.

FOSSIL
JET FUEL

SAF Purchasers

SAF

Many Users

Credits

Sustainable Aviation Fuel (SAF)

The aviation industry is committed to developing and using sustainable fuel. The key challenges to greater use of SAF are the limited supply and high cost. Given the lack of available energy alternatives, Boeing and the industry believe aviation should be a priority user of sustainable fuels.

WHAT IS BOEING DOING TO ACCELERATE SAF?

Boeing continues to partner and invest in SAF development. Collaboration among all stakeholders across the SAF value chain is critical to scale up SAF.



KEY

- Policy engagement
- Multistakeholder collaboration
- Research & development
- Boeing SAF procurement/use
- NGO collaboration

KEYS TO ACCELERATING SAF SUPPLY GROWTH



Supportive government policies



Market-based incentives to make SAF price competitive



R&D to enable cost competitiveness & supply growth



Feedstock diversity & robust sustainability criteria



Access to capital for new production



Offtake agreements to reduce perceived risks for investors

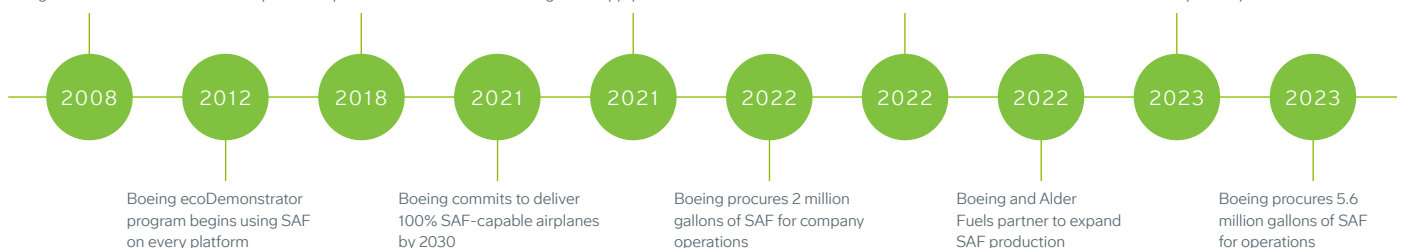
Boeing, Virgin Atlantic and GE Aviation conduct world's first SAF flight using a commercial aircraft

First 100% SAF flight on the Boeing ecoDemonstrator in partnership with FedEx

Boeing and SkyNRG partner to scale up the global supply of SAF

Partnered with NASA to test the emissions of SAF

Boeing develops jet reference fluid to test for 100% SAF compatibility



GLOSSARY

Pathways

Technical processes to produce different types of SAF

Feedstock

Inputs like wastes and energy crops that are used to make SAF (i.e., what "feeds" the process)

Offtake

When a company promises to purchase future fuel from a producer

Fossil fuel

Fuel formed in the Earth's crust (e.g., coal, oil, natural gas)