Sustainable Aviation Fuel

What Sustainable Aviation Fuel is and what it means for decarbonisation

Aviation plays a critical role in our global economy and is a key facilitator and enabler of business, trade, travel, and tourism. However, the sector has a significant impact on the environment, as it accounts for c.2.5% of global CO₂ emisssions. To minimise the environmental impact of aviation, the International Civil Aviation Organisation committed to the long-term goal of achieving Net Zero emissions for international aviation by 2050. Achieving this goal will require the aviation sector to undergo a significant, sustainable transformation.

Whilst there is no

single answer to decarbonising the aviation sector, the successful acceleration and scale deployment of Sustainable Aviation Fuel is a necessary element of the solution. SAF is the largest single contributor to delivering ICAO's 2050 decarbonisation goal.

What is Sustainable Aviation Fuel?





Feedstock is converted to sustainable aviation fuel

Feedstock (used cooking oils, plant oils, municipal waste, waste gases, agricultural residues, alcohols, and ultimately green hydrogen)

Jet fuel is currently blended with SAF to make air travel more sustainable; however, in the future flights will be powered by SAF alone

Why is Sustainable Aviation Fuel important?

Sustainable Aviation Fuel (SAF) is the only scalable option to decarbonise the aviation industry by 2050. However, each SAF production pathway faces distinct challenges related to technological readiness, cost, and the availability of feedstock. Efficiency improvement in aircraft, engines, and operations will continue to reduce fuel consumption, but cannot solve the challenge alone.

Hydrogen and electric propulsion technology may represent a paradigm shift but Technology Readiness Level (TRL) is low, and there remain significant challenges related to their applicability for longer-haul travel.





SAF is a drop-in fuel consistent with usage on existing airframes and engines that can be accelerated today to deliver material impact on sectoral carbon levels.



What does Sustainable Aviation Fuel mean for the environment?

In the future, Sustainable Aviation Fuel will lessen the environmental impact of air travel and plays a large part in helping to meet the goals of the Paris Agreement to limit global warming to below 2 degrees Celsius above pre-industrial levels.



Why is Sustainable Aviation Fuel needed now?

Were the aviation industry to take no action, and continue to grow without constraint and without action to abate its carbon emissions it would create a 2.3 Gt carbon emissions excess relative to the levels required to achieve the 1.5 degrees target.



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"Sustainable Aviation Fuel's central role in decarbonising aviation is unequivocal, and cannot be underestimated. For the sector to meet its environmental goals, it is critical that stakeholders across both industry and government collaborate to accelerate the acceptance and adoption of SAF. Time is of the essence: without action now, the decarbonisation goal will not be achieved."

> John Goddard, Senior Partner and Vice Chair, Sustainability at L.E.K. Consulting

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