

The Future of Aviation Sustainability

Aviation poses a significant risk to our society, causing climate change and adding to the problem of fossil fuels possibly running out by 2050. Aviation accounts for 2-3% of the world's carbon emissions. In 2021, the United States Environmental Protection Agency (EPA) reported that 28% of the nation's carbon emissions are transportation-based, and aviation causes 21% of it. With aviation fuel demands skyrocketing after the pandemic and air travel expected to double in the next 15 years, the future of aviation sustainability should be improved. Still, recent jet fuel developments show signs of hope for this giant industry.

Sustainable Aviation Fuel, or SAF, is a renewable biofuel product that lowers aviation's carbon emissions. SAF can be made using renewable sources, including cooking oil, animal fat, and refined alcohol. SAF is a *drop-in fuel*, meaning it is added to regular jet fuel. It requires no additional pilot training or aircraft modifications when added to aircraft, making the switch to SAF straightforward. It has also been proven effective in dealing with contrails, trails of clouds formed behind an aircraft as water condenses and freezes around particles from airplane exhaust, by 50% to 70%. Contrails often contain harmful chemicals detrimental to air quality, especially around airports. SAF, in total, can reduce an aircraft's carbon emissions by 80%. Moreover, if the aviation industry switched to SAF, it would lower its carbon footprint by up to 94%!

While SAF is an outstanding development, it is still relatively new and is 2-3 times as expensive as conventional jet fuel. Currently, only 46 airports support the use of SAF. However, we can help by raising environmental awareness; we could get more airlines to notice the need for change, as the more airlines that use SAF, the more the cost will decrease.