

Sustainable Aviation Fuel – What Airlines’ Carbon-Neutrality Pledge Could Mean for Farmland

Given major US airlines’ recent pledge to achieve net-zero carbon emissions by 2050¹, we believe sustainable aviation fuel is a potential tailwind for US farmland investors. The fuel allows airlines to reduce emissions by offering a cleaner-burning fuel option than conventional jet fuel. Importantly, there are minimal switching costs for airlines to adopt this cleaner fuel option – airplane engines require no retrofitting and can run on a blend of the fuel today.²

After highway transportation, the aviation industry is the second-largest user of fuel in the transportation sector, consuming approximately 14 billion gallons of fuel annually.³ Last year, the US Department of Energy, Department of Transportation, and Department of Agriculture launched an effort to help the aviation sector reduce its greenhouse gas emissions by 50% and transition its fuel use to 100% sustainable aviation fuel (SAF) by 2050.⁴ By 2030, the goal is to produce 3 billion gallons of SAF annually to blend with conventional jet fuel, which would equate to approximately 20% of the domestic aviation jet fuel market today.⁵ Our research suggests it would take approximately 28 million acres of farmland to produce the feedstocks necessary to supply 3 billion gallons of SAF.

The aviation sector’s use of biofuels is low, and as production scales and adoption increases, we expect SAF will become a cost-competitive fuel source. Outside the US, the International Air Transport Association’s (ITA) 2050 target of carbon neutrality relies heavily on the use of SAF. To meet that target, the ITA estimates that 450 billion liters of SAF will be needed annually by 2050 – a large increase relative to the 100 million liters of SAF currently produced annually.⁶

Today, conventional jet fuel is predominantly fossil fuel based. A transition to SAF would progressively use more biomass feedstocks, such as soybean oil, canola oil, and corn. SAF technology is not a far-off, pie-in-the-sky technology; United Airlines has already completed a commercial flight that used 100% SAF made from corn, beets, and sugarcane in one of its engines.⁷ We believe the potential for airlines to reach carbon neutrality provides a tailwind for farmland investors. Although the scale and adoption of SAF is in the very early stages, as farmland investors, we believe SAF is a positive development, and we are excited by its potential. For additional information, please visit www.us-agriculture.com, or contact Evan Newton, CFA (evan.newton@us-agriculture.com).

¹ <https://www.reuters.com/business/cop/us-sets-goal-net-zero-aviation-emissions-by-2050-2021-11-09/>

² <https://www.scientificamerican.com/article/sustainable-aviation-fuel-aces-helicopter-and-plane-flight-tests/>

³ https://www.eia.gov/totalenergy/data/monthly/pdf/flow/petroleum_spaghetti_2020.pdf

⁴ https://www.energy.gov/sites/default/files/2021-09/S1-Signed-SAF-MOU-9-08-21_0.pdf

⁵ <https://www.whitehouse.gov/briefing-room/statements-releases/2021/09/09/fact-sheet-biden-administration-advances-the-future-of-sustainable-fuels-in-american-aviation/>

⁶ <https://www.ft.com/content/c41864fc-2b78-4220-91d8-5a4f43fb12b0>

⁷ <https://www.spglobal.com/platts/en/market-insights/latest-news/agriculture/120121-united-airlines-launches-first-commercial-flight-with-100-saf>