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What is Sustainable Aviation Fuel?

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Sustainable aviation fuel (SAF) is a new type of low-carbon jet fuel made from renewable bio-materials, including agricultural byproducts and bio-oils. Although SAF currently accounts for less than 0.1% of global commercial jet fuel consumption, production is growing rapidly. There are now 15 SAF production facilities operating worldwide, with many more proposed, including a planned facility in Moorhead, Minnesota.

Different Potential SAF Production Technologies

	HEFA	FT-SPK	ATJ-SPK	CHJ
Process Name	Hydroprocessed Esters and Fatty Acids	Fischer-Tropsch Synthetic Paraffinic Kerosene	Alcohol-to-Jet Synthetic Paraffinic Kerosene	Catalytic Hydrothermolysis Jet
Common Feedstocks Used	<ul style="list-style-type: none"> Used cooking oil (UCO) Animal fats (tallow) Camelina, jatropha, soybean oil 	<ul style="list-style-type: none"> Agricultural residues Energy crops (switchgrass, miscanthus) Municipal waste 	<ul style="list-style-type: none"> Corn Sugarcane 	<ul style="list-style-type: none"> Used cooking oil (UCO) Animal fats (tallow) Camelina, jatropha, soybean oil
Current Status	Makes up >90% of current global SAF production	Limited availability currently	Commercial pilot facilities in operation	Limited availability currently

Who's looking to buy SAF?

The demand for SAF comes from a few different sources:

- Airlines — Major carriers are buying SAF to cut emissions and meet net-zero targets and obligations.
- Governments — The EU and California have begun requiring SAF blending in commercial aviation. In the U.S., the 45Z tax credit is also available to SAF producers.
- Corporate and freight buyers — Companies like Amazon, Microsoft and DHL are purchasing SAF to reduce emissions from shipping, supply chains and business travel.

What might SAF mean for North Dakota?

Corn, soybeans and canola are all crops that are grown in North Dakota and have potential as SAF feedstocks. If the market for SAF expands, the following is possible:

- More demand for North Dakota crops
- New markets beyond food and feed
- Extra value for low-carbon practices like no-till and cover cropping



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