

From wood to wings.

Alaska Airlines is using environmentally friendly fuel on a select flight from Seattle to Washington D.C. Your aircraft will be powered by a mixture of traditional petroleum jet fuel and 20 percent sustainable biofuel made from material left over after a timber harvest or forest thinning, such as limbs, tops, stumps, and small diameter logs. This is the first commercial flight to use a fuel blend made from woody plant materials. In June, Alaska conducted a similar biofuel flight but with sustainable corn as the feedstock.

Are these biofuels safe?

Yes. Biofuels are just as safe as the regular fuel we use to power our aircraft. The fuel on your flight meets the same stringent international fuel certification as conventional jet fuel and the Federal Aviation Administration has approved it for use.

Why is Alaska Airlines doing this?

Caring for the environment is important to us. We also have a proud tradition of innovating to make flying safer, more reliable and easier for our customers. Biofuels are the best alternative energy source currently available for aviation. We want to do everything we can to achieve a market for sustainable biofuels as soon as possible.

Why are biofuels so important for aviation?

Biofuels decrease our reliance on petroleum-based fuel, enabling airlines to sustainably reduce our largest impact on the environment and meet the industry's goal of cutting carbon dioxide emissions in half by 2050 compared with 2005 levels. Biofuels also represent a significant, complementary effort to our other green practices, including onboard recycling.

How does it work?

While traditional forest practices leave some of the harvest materials behind to replenish soil nutrients and provide cover, the excess woody biomass usually is piled and burned. To make the fuel used in this flight, excess woody biomass was collected from sustainably managed forests owned by Weyerhaeuser (OR), the Muckleshoot Indian Tribe (WA), and the Confederated Salish Kootenai Tribes (MT), and combined with reject fibers provided by Cosmo Specialty Fibers (WA) to make biofuel.

Woody biomass contains lignocellulose, which is rich in carbohydrates. The carbohydrates are extracted from the wood and converted to biofuel and other biochemical products. The biofuel production is sustainable because the forest residual feedstock does not compete with food production; air pollution is cut by reducing slash pile burning; removal of residuals prepares the forest floor for replanting; and the new industry of woody biomass collection and conversion helps create jobs in rural economies. Also, forest residuals are abundant and can be sustainably supplied from private lands.

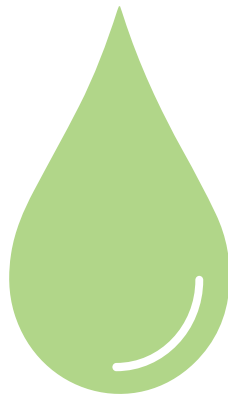


How does Alaska Airlines see the future market for biofuels?

Sustainable biofuels cost substantially more than regular jet fuel. The cost of biofuels has to be consistently lowered to a price level that is competitive with fossil fuel. This can be achieved through innovation, cooperation and legislation that stimulates the use of biofuels in aviation. Producing biofuel from woody materials is currently more complex and expensive than similar fuel production from oils, starch, or raw sugar, but technology is narrowing that gap.

Who made the biofuels?

The biofuel on your flight was made by the Northwest Advanced Renewables Alliance (NARA) and its partners. NARA, led by Washington State University, is an affiliation of universities, government laboratories and companies working together to build a supply chain that uses forest residuals to make aviation biofuels and other co-products. NARA is supported by the Agriculture and Food Research Initiative Competitive Grant no. 2011-68005-30416 from the USDA National Institute of Food and Agriculture. For more information, visit www.nararenewables.com.



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