

# United Airlines is Flying on Biofuels. Here's Why That's A Really Big Deal.

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*A United Airlines passenger airplane passes over Whittier, Calif., on its way to Los Angeles International Airport, Sunday, July 26, 2015. (AP Photo/Nick Ut)*

By [Chelsea Harvey](#)

On Friday, United Airlines will launch a new initiative that uses biofuel to help power flights running between Los Angeles and San Francisco, with eventual plans to expand to all flights operating out of LAX. It's the first time an American airline will begin using renewable fuel for regular commercial operations, and the occasion is part of a bigger movement when it comes to clean transportation in the U.S.

The renewable fuel used to power United's planes will be coming from a Los Angeles refinery operated by [AltAir Fuels](#), which is using the facility to produce both renewable jet fuel and diesel fuel using a technology developed by [Honeywell UOP](#), a major supplier and technology licensor in the petroleum industry. Back in 2013, AltAir and United announced their partnership, in which United will purchase up to 15 million gallons of biofuel over a three-year period.

Friday's launch will be the first application of that agreement. The flights will use a mixture of 30 percent biofuel and 70 percent traditional fuel, and United says that the biofuel will help reduce greenhouse gas emissions by about 60 percent compared with regular fuel.

In general, the idea behind renewable fuels is to use a biological source — for example, plant or animal matter — rather than a geological one, like oil. The Honeywell UOP technology that's being applied at the AltAir refinery can utilize a range of difference sources, from used cooking oil to algae.

The technology has been in the works since 2007, when the company was awarded a grant from [DARPA](#) to develop green jet fuel, according to Veronica May, vice president and general manager of renewable energy and chemicals at Honeywell UOP. Currently, its technology allows for the production of diesel fuel that can be used in any proportion with existing diesel engines — up to 100 percent. Its jet fuel can replace up to 50 percent of petroleum fuel in existing aircraft. Altogether, both fuels can offer up to about an 80 percent reduction in greenhouse gas emissions compared with traditional fuel, the company says.

“This is a long-term investment toward the future of sustainability for our company and for our communities,” said Angela Foster-Rice, United’s managing director of environmental affairs and sustainability, adding that “it’s also very business-smart and helps our community with clean energy jobs as well.”

The announcement comes at a time when interest in using biofuel to cut down on carbon emissions in the transportation sector is climbing — but also when it has been beset with controversy. The Environmental Protection Agency already requires refiners to mix a certain amount of renewable fuel, mainly corn-based ethanol, into their gasoline — and just last November, the agency chose to increase those standards in a move that inspired has [considerable criticism](#) from the petroleum industry, which has been sparring with the nation’s ethanol producers for the past several years.

So when it comes to biofuels for motor vehicles, the issue remains fraught with controversy.

Renewable jet fuel, on the other hand, constitutes a relatively untapped opportunity. But while United may be first U.S.-based airline to launch regular biofuel-powered commercial flights, it will likely not be the last. Both Southwest Airlines and FedEx have reportedly contracted with a company called Red Rock Biofuels to start buying renewable jet fuel.

And marine transportation may be just starting to jump on board as well. At the end of January, the U.S. Navy formally launched its “Great Green Fleet,” a deployment of warships also powered by renewable fuel supplied by AltAir. AltAir is reportedly contracted to supply 77 million gallons of the fuel overall by September of this year.

When it comes to both marine and aircraft transportation, there’s been a great deal of discussion recently about how to slash emissions, both through renewable fuels and through other forms of technology, said [Dan Rutherford](#), marine and aviation program director at the International Council on Clean Transportation. Aircraft currently contribute to a little over 1 percent of all the world’s carbon emissions and climbing, and Rutherford said shipping accounts for a slightly higher proportion — about 3 percent.

Aviation, in particular, has received considerable attention recently because of the expected rapid growth in its global emissions over the next several years if action is not taken. And planes are especially difficult to decarbonize because they are so difficult to power by alternative means. A few manufacturers have experimented with electric aircraft, but the technology is in no condition to be used for commercial means any time soon.

In an attempt to start addressing the problem, just last month the UN's International Civil Aviation Organization (ICAO) [proposed](#) the world's first carbon dioxide emissions standards for aircraft. And back in 2011, according to Rutherford, the International Maritime Organization (IMO) passed a set of fuel efficiency standards for new ships, which went into effect last year.

However, while each move was an important step forward, both the marine and aviation standards applied only to new crafts, meaning existing planes and ships have not been required to upgrade. ICAO was roundly criticized by environmentalists over this issue when it released its proposal in February, and Rutherford noted that there is also "a big discussion within IMO about whether there should be efficiency standards for existing ships."

But the use of biofuels is one possibility for existing machines to cut down on their emissions without having to upgrade their engines or other aspects of their design or engineering. "Drop-in" fuels are renewable fuels that are designed to work safely with existing engines, although as in the case of the United flights, they sometimes require mixing with traditional fuels.

Of course, Honeywell UOP's technology isn't the only one out there — and AltAir's refinery isn't the only plant, either. United, for instance, also recently made a \$30 million investment in [Fulcrum Bioenergy](#), which has developed a way to convert household garbage into fuel. That partnership comes with the opportunity for the airline to purchase at least 90 million gallons of renewable jet fuel per year, and also to co-develop biorefineries in at least five locations around the U.S., according to Foster-Rice.

So the interest in expanding biofuels throughout the transportation sector is slowly starting to pick up. However, it's unclear for the time being whether other airlines — or other marine fleets, for that matter — will follow suit with similar investments any time soon. And according to Rutherford, there are still many questions to be answered about the relative role of biofuels versus other technologies when it comes to cutting carbon emissions, particularly in aviation.

How much airlines will be willing to pay for renewable fuel is one important point to consider in the future, he noted, as well as questions about the sustainability and efficiency of the fuels, themselves. "People are always analyzing how good these fuels can be and how they can get better," he said.

But May, of Honeywell UOP, is optimistic about continued interest in the industry. The EPA's recent action to increase standards on biofuels and gasoline has sparked an interest from refiners in green diesel, she said, adding that other parties have also expressed an interest in the green jet fuel, although United remains the only U.S. airline to make a commercial commitment to the use of biofuels in aircraft.

“We’ve made really significant strides over the last 10 years in developing new technologies, and we intend to continue to be in the industry for the foreseeable future innovating new technologies,” she said.

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