Boeing Conducts World's First Flight with 'Green Diesel' as Aviation Biofuel

ecoDemonstrator 787 flies on sustainable fuel made from vegetable oil, waste animal fat

Testing supports industry efforts to approve widely available biofuel for aviation

SEATTLE, Dec. 3, 2014 /PRNewswire/ -- Boeing [NYSE: BA] has completed the world's first flight using "green diesel," a sustainable biofuel that is widely available and used in ground transportation. The company powered its ecoDemonstrator 787 flight test airplane yesterday with a blend of 15 percent green diesel and 85 percent petroleum jet fuel in the left engine.

"Green diesel offers a tremendous opportunity to make sustainable aviation biofuel more available and more affordable for our customers," said Julie Felgar, managing director of Environmental Strategy and Integration, Boeing Commercial Airplanes. "We will provide data from several ecoDemonstrator flights to support efforts to approve this fuel for commercial aviation and help meet our industry's environmental goals."

Sustainable green diesel is made from vegetable oils, waste cooking oil and waste animal fats. Boeing previously found that this fuel is chemically similar to HEFA (hydro-processed esters and fatty acids) aviation biofuel approved in 2011. Green diesel is chemically distinct and a different fuel product than "biodiesel," which also is used in ground transportation.

With production capacity of 800 million gallons (3 billion liters) in the U.S.,Europe and Asia, green diesel could rapidly supply as much as 1 percent of global jet fuel demand. With a wholesale cost of about $3 per gallon, inclusive of U.S. government incentives, green diesel approaches price parity with petroleum jet fuel.

"The airplane performed as designed with the green diesel blend, just as it does with conventional jet fuel," said CaptMike Carriker, Chief Pilot for New Airplane Product Development, Boeing Test & Evaluation. "This is exactly what we want to see in flight tests with a new type of fuel."

Green diesel is among more than 25 new technologies being tested by Boeing's ecoDemonstrator Program aboard 787 Dreamliner ZA004. The program accelerates the testing, refinement, and use of new technologies and methods that can improve aviation's environmental performance.

On a lifecycle basis, sustainably produced green diesel reduces carbon emissions by 50 to 90 percent compared to fossil fuel, according to Finland-based Neste Oil, which supplied green diesel for the ecoDemonstrator 787. The flight test was coordinated with the U.S. Federal Aviation Administration, Rolls-Royce and Pratt & Whitney, and EPIC Aviation blended the fuel.

For more information about ecoDemonstrator 787 technologies and a complete list of supplier partners, visit www.newairplane.com/environment/#/ecoDemonstrator/

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