Honeywell UOP to Convert Alcohol into Aviation Biofuel

DES PLAINES, Ill., Dec. 1, 2011 /PRNewswire/ -- UOP LLC, a Honeywell (NYSE: HON) company, announced today that it has been awarded a $1.1 million contract from the Federal Aviation Administration (FAA) via the U.S. Department of Transportation's Volpe Center to develop and demonstrate technology that will produce renewable jet fuel from alcohols found in natural feedstocks.

Under the contract, Honeywell's UOP will produce renewable jet fuel from a type of alcohol called isobutanol. Isobutanol, to be supplied for this project by advanced biofuel company Gevo, can be produced from a variety of starch and sugar feedstocks, including corn. In the future, inedible sources, such as corn stover, bagasse and wood residues, could also be used as feedstocks.

The contract supports U.S. government efforts to identify and accelerate the commercial availability of next-generation, non-fossil jet fuel. Isobutanol-derived biofuels will offer new renewable sources for jet fuel production beyond the natural oils and biomass materials that have been introduced for commercial and military flight in the last several years.

"The development of new second-generation biofeedstock conversion technology is critical to support growing energy needs and speed commercial availability," said Jim Rekoske, vice president and general manager for Renewable Energy & Chemicals at Honeywell's UOP. "Since our entry into the biofuels arena, Honeywell's UOP has become a recognized leader in the development of new innovative, sustainable and safe approaches for green fuels production. We are committed to partnerships with the FAA and other government entities and private companies to realize the potential of biofuels."

UOP will deliver 100 gallons of renewable jet fuel derived from isobutanol to the government in 2012. This fuel will be evaluated to ensure it is compatible with aircraft engines and that it meets specification for flight.

"We are pleased to work with UOP to enable the development of alcohol to jet fuel technology for the refining industry," said Christopher Ryan, PhD, president and COO of Gevo. "We believe that projects like this one will help accelerate the adoption of this new technology by refiners, the military and airlines to the nation's benefit and open a new market for isobutanol."

Honeywell's UOP is a recognized leader in refining process technologies to convert natural oils, animal fats and biomass to sustainable green fuels. It currently offers process technology to produce Honeywell Green Jet FuelT from natural oils and wastes that meets all specifications for flight and, when used up to a 50 percent

blend with petroleum-derived jet fuel, is a drop-in replacement that requires no changes to the aircraft or engine.

To date, Honeywell Green Jet Fuel has been used in more than 20 test and commercial flights on military and commercial platforms. In each flight, the biofuel performed as well, if not better, than traditional petroleum-based fuels. The fuel received ASTM approval for commercial flight in July 2011.

Honeywell's UOP has also commercialized the UOP/Eni EcofiningT process to produce Honeywell Green DieselT fuel from natural oils and wastes. In 2008, Honeywell's UOP formed the joint venture Envergent Technologies LLC with Ensyn Corp. to offer technology that converts solid waste biomass, such as forest and agricultural residues, to renewable heat, power and transportation fuels.

UOP LLC, headquartered in Des Plaines, Illinois, USA, is a leading international supplier and licensor of process technology, catalysts, adsorbents, process plants, and consulting services to the petroleum refining, petrochemical, and gas processing industries. UOP is a wholly-owned subsidiary of Honeywell International, Inc. and is part of Honeywell's Specialty Materials strategic business group. For more information, please visit www.uop.com *[1].*

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