

# United, Tallgrass, and Green Plains Form Joint Venture to Develop New Sustainable Aviation Fuel Technology Using Ethanol

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United, Tallgrass, and Green Plains will invest up to a combined \$50 million in the joint venture – Blue Blade Energy – to develop the technology

United has entered into an offtake agreement with Blue Blade Energy for up to 135 million gallons of ethanol based SAF annually and up to 2.7 billion gallons in total

United has invested in more SAF production than any other airline

CHICAGO and DENVER and OMAHA, Neb., Jan. 31, 2023 /PRNewswire/ -- United Airlines, Tallgrass, and Green Plains Inc. today announced a new joint venture – Blue Blade Energy – to develop and then commercialize a novel Sustainable Aviation Fuel (SAF) technology that uses ethanol as its feedstock. If the technology is successful, Blue Blade is expected to proceed with the construction of a pilot facility in 2024, followed by a full-scale facility that could begin commercial operations by 2028. The offtake agreement could provide for enough SAF to fly more than 50,000 flights annually between United's hub airports in Chicago and Denver.\*

Blue Blade's new SAF technology was developed by researchers at the U.S. Department of Energy's **Pacific Northwest National Laboratory** (PNNL), a leading center for technological innovation in sustainable energy. SAF, which uses non-petroleum feedstock, is a low-carbon alternative to traditional jet fuel that offers up to 85%\*\* lower lifecycle greenhouse gas emissions.

"The production and use of SAF is the most effective and scalable tool the airline industry has to reduce carbon

emissions and United continues to lead the way," said United Airlines Ventures President Michael Leskinen. "This new joint venture includes two expert collaborators that have the experience to construct and operate large-scale infrastructure, as well as the feedstock supply necessary for success. Once operational, Blue Blade Energy has the potential to create United's largest source of SAF providing up to 135 million gallons of fuel annually."

United, Tallgrass, and Green Plains will each provide their unique industry expertise to help develop the joint venture. Under this collaborative approach:

- Tallgrass will manage research and development of the technology, including pilot plant development, and will manage the construction of the production facility.
- Green Plains will supply the low-carbon ethanol feedstock, and use its ethanol industry expertise to manage operations once the pilot facility is constructed.
- United Airlines will assist with SAF development, fuel certification and into-wing logistics, and has also agreed to purchase up to 2.7 billion gallons of SAF produced from the joint venture.

"At Tallgrass, we are striving to innovate how we deliver the energy that powers our nation and enables our quality of life," said Alison Nelson, Vice President, Business Development at Tallgrass. "Air travel uniquely connects people and improves lives, and the advancement of this novel SAF technology presents a meaningful opportunity to reduce emissions from aviation. We are excited to partner with industry leaders United Airlines and Green Plains on this initiative."

If the technology is commercialized, the location of Blue Blade's initial plant would allow easy access to low-carbon feedstock from Green Plains' Midwest ethanol production facilities. While the initial SAF facility intends to use ethanol, the technology has the capability to work with any alcohol-based feedstock as its fuel source.

"Our transformation to a true decarbonized biorefinery model has positioned Green Plains to help our customers and partners reduce the carbon intensity of their products by producing low-carbon proteins, oils, sugars and now decarbonized ethanol to be used in SAF," said Todd Becker, President and CEO of Green Plains. "This partnership with world class organizations like United Airlines and Tallgrass, shows the value creation that is possible with our low-carbon platform. The potential impact of this project is a gamechanger for US agriculture, aligning a strong farm economy and a robust aviation transport industry focused on decarbonizing our skies."

Blue Blade Energy marks one of the largest direct investments from United Airlines Ventures (UAV), United's corporate venture arm, into SAF. Launched in 2021, UAV targets startups, upcoming technologies, and sustainability concepts that will complement United's goal of net zero emissions by 2050 without relying on traditional carbon offsets. United has aggressively pursued strategic investments in SAF producers and revolutionary technologies including carbon capture, hydrogen-electric engines, electric regional aircraft and air taxis.

\*Assuming current regulations requiring SAF to be blended with conventional jet fuel are removed to allow for the use of unblended SAF.

\*\*Based on United's current SAF supply

## About United

United's shared purpose is "Connecting People. Uniting the World." From our U.S. hubs in Chicago, Denver, Houston, Los Angeles, New York/Newark, San Francisco and Washington, D.C., United operates the most comprehensive global route network among North American carriers. United is bringing back our customers' favorite destinations and adding new ones on its way to becoming the world's best airline. For more about how to join the United team, please visit [www.united.com/careers](http://www.united.com/careers) and more information about the company is at [www.united.com](http://www.united.com). United Airlines Holdings, Inc., the parent company of United Airlines, Inc., is traded on the Nasdaq under the symbol "UAL". For further information about our environmental impact, review United's Corporate Responsibility Report and Annual Report on Form 10-K, available at [crreport.united.com](http://crreport.united.com) and [ir.united.com](http://ir.united.com).

## About Tallgrass

Tallgrass is a leading energy infrastructure company focused on safely, reliably and sustainably delivering the energy and services that fuel homes and businesses and enable quality of life. We are committed to being at the forefront of efforts to decarbonize our world. An investor group led by Blackstone Infrastructure Partners, which includes Enagás SA, GIC, NPS and USS, owns the outstanding equity interests in Tallgrass. Learn more at [Tallgrass.com](http://Tallgrass.com).

## About Green Plains Inc.

Green Plains Inc. (NASDAQ:GPPE) is a leading biorefining company focused on the development and utilization of fermentation, agricultural and biological technologies in the processing of annually renewable crops into sustainable value-added ingredients. This includes the production of cleaner low-carbon biofuels, renewable feedstocks for advanced biofuels and high-purity alcohols for use in cleaners and disinfectants. Green Plains is an innovative producer of Ultra-High Protein and novel ingredients for animal and aquaculture diets to help satisfy a growing global appetite for sustainable protein. The Company also owns a 48.8% limited partner interest and a 2.0% general partner interest in Green Plains Partners LP. For more information, visit [www.gpreinc.com](http://www.gpreinc.com).

## United Cautionary Note Concerning Forward-Looking Statements

This press release contains certain "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 relating to, among other things, plans and projections regarding the company's

financial position, results of operations, market position, capacity, fleet, product development and business strategy as well as the company's ESG goals, targets, commitments, strategies and initiatives and related business and stakeholder impacts. All statements that are not statements of historical facts are, or may be deemed to be, forward-looking statements. Such forward-looking statements are based on historical performance and current expectations, estimates, forecasts and projections about our future financial results, plans, objectives, goals, targets, commitments, strategies and initiatives and involve inherent risks, assumptions and uncertainties, known or unknown, including internal or external factors that could delay, divert or change any of them, that are difficult to predict, may be beyond our control and could cause our future financial results, plans, objectives, goals, targets, commitments, strategies and initiatives to differ materially from those expressed in, or implied by, the statements. These risks, assumptions, uncertainties and other factors include, among others, any failure to meet stated ESG goals, targets, commitments, strategies and initiatives in the time frame expected or at all as a result of many factors, including changing societal, market, competitive, regulatory or stakeholder expectations, a delay or failure of any project to be fully developed or become operational or to produce sustainable aviation fuel or other ESG-related product in the amounts contemplated or at all, a delay or failure of any technology to be fully developed or become functional or marketable or to serve the purpose for which it was designed, and any delay or inability of United Airlines to realize the expected benefits of the joint venture. No forward-looking statement can be guaranteed. Forward-looking statements in this press release should be evaluated together with the many risks and uncertainties that affect United's business and market, particularly those identified in the "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Risk Factors" sections in United's Annual Report on Form 10-K for the year ended December 31, 2021, as updated by our subsequent Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and other filings with the Securities and Exchange Commission. Risks and uncertainties related to United's environmental compliance, climate commitments and climate strategy are further described in Part I, Item 1A. Risk Factors of United's Annual Report on Form 10-K for the fiscal year ended December 31, 2021—"We are subject to many forms of environmental regulation and liability and risks associated with climate change and may incur substantial costs as a result. In addition, failure to achieve or demonstrate progress towards our climate goals may expose us to liability and reputational harm."

The statements included in this document are made only as of the date of this document and except as otherwise required by applicable law or regulation, United Airlines undertakes no obligation to publicly update or revise any statement, whether as a result of new information, future events, changed circumstances or otherwise. In particular, United Airlines reserves the right to change, amend, supplement or abandon some or all of the statements regarding goals, targets, commitments, strategies, initiatives, intentions and other statements from time to time without notice. In addition, some of our disclosures in this press release are estimates or based on assumptions due to inherent measurement uncertainties. For example, United has entered into purchase agreements to buy more SAF production than any other airline based on publicly available future purchase agreements for SAF of certain airlines as of the date hereof.

## Tallgrass Cautionary Note Concerning Forward-Looking Statements

Disclosures in this news release contain forward-looking statements. All statements, other than statements of historical fact, included in this press release that address activities, events or developments that management expects, believes or anticipates will or may occur in the future are forward-looking statements. Without limiting the generality of the foregoing, forward-looking statements contained in this press release specifically include the combined potential investment amount in the Blue Blade Energy joint venture, the potential amount of SAF to be acquired by United under the offtake agreement, the development and commercialization of the SAF technology, expectations regarding construction of a pilot facility and full-scale facility, including the dates of completion and commercial operation for such facilities, the expected usage of SAF by United under the offtake agreement, the industry expertise of the joint venture members that is expected to be used to help develop the joint venture, the benefits of the location of Blue Blade's initial plant, and the other potential benefits and capabilities of the SAF technology. Such statements are subject to a number of assumptions, risks and uncertainties, many of which are beyond the control of Tallgrass, which may cause actual results to differ materially from those implied or expressed by the forward-looking statements, and other important factors that could cause actual results to differ materially from those projected, including those set forth in reports and financial statements made available by Tallgrass. Any forward-looking statement applies only as of the date on which such statement is made, and Tallgrass does not intend to correct or update any forward-looking statement, whether as a result of new information, future events or otherwise, except as required by law.

## Green Plains Inc. Cautionary Note Concerning Forward-Looking Statements

All statements, other than statements of historical fact, included in this press release that address activities, events or developments that management expects, believes or anticipates will or may occur in the future are forward-looking statements. Without limiting the generality of the foregoing, forward-looking statements contained in this press release specifically the investment in the joint venture and the expected size and benefits of the sustainable aviation fuel production project under development. Such statements are subject to a number of assumptions, risks and uncertainties, many of which are beyond the control of Green Plains, which may cause actual results to differ materially from those implied or expressed by the forward-looking statements, and other important factors that could cause actual results to differ materially from those projected, including those set forth in reports and financial statements made available by Green Plains. Any forward-looking statement applies only as of the date on which such statement is made. Green Plains does not intend to correct or update any forward-looking statement, whether as a result of new information, future events or otherwise, except as required by law.

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