



November 16, 2023

New Business Domains

JAL has signed agreements with three hydrogen-electric aircraft/engine manufacturers on joint studies for introducing sustainable hydrogen-powered flight to Japan

~To create safe, comfortable, and sustainable future aviation~

Japan Airlines Co., Ltd. (hereinafter “JAL”) has separately signed basic agreements with three of hydrogen-electric aircraft/engine (*) manufacturers, H2FLY GmbH, Universal Hydrogen Co., and ZeroAvia Inc., in order to study the safety, economic feasibility and maintainability etc., for bringing hydrogen-fueled next generation aircrafts, which can reduce CO2 emissions to zero during flight and expected to be a sustainable aviation solution for the future. JAL Engineering Co., Ltd. (hereinafter “JALEC”), which is in charge of aircraft maintenance for the JAL Group, will continue coordination and cooperation on certifications and maintenance systems.

(*) An aircraft that uses fuel cells to generate electricity through a chemical reaction between hydrogen and atmospheric oxygen and electric motors to generate thrust for flight, rather than through direct hydrogen combustion.



H2FLY



Universal Hydrogen



ZERO AVIA

In our pursuit of achieving Net Zero CO2 Emissions by 2050, JAL Group is conducting extensive studies for the future introduction of aircraft using new technologies such as hydrogen aircraft and electric aircraft. These collaborating companies have already achieved hydrogen-fueled test flights and plan to enter into service hydrogen-electric aircrafts in the middle of the 2020s to 2030s, making them world leaders in the development of hydrogen-electric flights.

Building on these basic agreements, JAL will engage in extensive collaboration with the three companies, each of which has different characteristics, and contribute to the realization of hydrogen-electric, zero-emission commercial flights by sharing JAL’s knowledge of flight operations as a Japanese airline company. Therefore, we will accelerate the movement toward social implementation of hydrogen aviation in Japan, leading to the creation of safe, comfortable, and sustainable future aviation.

Overview of partnerships:

- Study on hydrogen-electric aircrafts latest technology from the viewpoints of safety, economic feasibility, and maintainability, etc., for future operations in Japan
- Reflect JAL’s knowledge as an airline in the design and specifications of hydrogen-electric aircraft
- Increase public awareness of the future application of hydrogen-electric aircraft in Japan





About H2FLY GmbH

H2FLY was founded by five engineers from the German Aerospace Center in Stuttgart and the University of Ulm, and is working to deliver to market the first qualified, fully hydrogen-electric aircraft powertrain. By bringing hydrogen fuel cell technology to the next level, H2FLY will unlock the era of emission-free, sustainable air travel. The company develops hydrogen-electric propulsion systems for aircraft and is a global leader in the development and testing of such systems. The HY4, the world's first hydrogen-electric passenger aircraft, first took off in 2016, demonstrating both the feasibility and potential of this technology for the aviation of the future. H2FLY has a powerful network of partners in industry and research, and is currently working to accelerate its technology development and commercialization with the support of German and European partnerships. In just a few years, hydrogen-electric aircraft are expected to be able to transport 40 passengers over distances of up to 2,000 kilometers (1,240 miles).

For more information, please visit www.h2fly.de/.

About Universal Hydrogen Co.

Universal Hydrogen is making hydrogen-powered commercial flight a near-term reality. The company takes a flexible, scalable, and capital-light approach to hydrogen logistics by transporting it in modular capsules over the existing freight network from green production sites directly to the airplane anywhere in the world. The company is targeting regional and narrowbody/single aisle airplanes as the near-term and most impactful decarbonization opportunities. Universal Hydrogen is also working to certify a powertrain conversion kit to retrofit existing regional aircraft to fly on hydrogen.

For details and to learn more, please visit <https://hydrogen.aero/>.

About ZeroAvia Inc.

ZeroAvia is a leader in zero-emission aviation, focused on hydrogen-electric aviation as the optimal solution for addressing the industry's climate impact. Initially developing engines to support a 300-mile range in 9–19 seat aircraft by the end of 2025, and up to 700-mile range in 40–80 seat aircraft by 2027, ZeroAvia has already secured experimental certificates for its three prototype aircraft from the CAA and FAA and passed significant flight test milestones. The company has secured a number of key partnerships with major aircraft OEMs and secured nearly 2,000 pre-orders for engines from a number of the major global airlines, with future revenue potential over \$10bn. ZeroAvia is part of the UK Government's Jet Zero Council. For more, please visit ZeroAvia.com, follow @ZeroAvia on Facebook, Twitter, Instagram, LinkedIn, and YouTube.