Key successes a year on from the Jet Zero Strategy

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ICAO adopts net zero 2050 CO₂ emissions goal for international aviation

The UK played a leading role in the technical work and negotiations over the last four years leading to the International Civil Aviation Organization (ICAO) adopting a new global goal for international aviation of net zero CO₂ emissions by 2050, at its 41st Assembly in October 2022. This places the sector on a trajectory firmly aligned with the Paris Agreement's 1.5°C global temperature target. It provides clear and collective policy direction, will help draw investment in technology and infrastructure, and creates a platform for developing further specific international measures through ICAO.



ZeroAvia reaches key milestone for zero emission flight

In January, ZeroAvia conducted a successful test flight of a 19-seater Dornier 228 twin-engine aircraft using hydrogen fuel cell propulsion– a key milestone in the transition to zero emission commercial aviation. The flight was conducted as part of the HyFlyer II project, a research programme backed by the UK government to develop a zero-emission powertrain for 9–19 seat commuter aircraft. ZeroAvia is targeting bringing the aircraft into commercial service by 2025.



February

Launch of the 2040 Zero Emission Airport Target Call for Evidence

In February, we held the seventh Jet Zero Council meeting where we launched the 2040 Zero Emission Airport Target Call for Evidence. The Call for Evidence, covering airports in England, will enable us to address the challenges raised by industry, such as residual emissions which may result from specific equipment, as well as better understand any support needed to achieve this target. We also announced £113 million of co-investment in hydrogen and battery electric flight technologies through the ATI programme.

July 19, 2023

ZeroAvia Successfully Completes Initial Dornier 228 Flight Test Campaign

UK-based testing campaign sees ten successful flight tests of retrofitted aircraft

Installed prototype ZA600 hydrogen-electric engine meets highest anticipated performance threshold, paving way for successful certification work

Zeo Aria in relation to J2040

[Kemble, UK & Hollister, CA: 19th July, 2023] — ZeroAvia today announced the completion of its initial prototype ZA600 flight testing campaign at Cotswold Airport in the UK. The 10th flight in the initial series was completed last week, and saw a cruise test to establish projections for future ranges using the system, thus teeing up the first cross-country flights as the next stage of testing and demonstration.

Over the course of the last six months, ZeroAvia has sequentially tested different areas of performance following the breakthrough, world-first flight of the system in January. The campaign has seen the aircraft fly at 5,000 feet, perform an endurance test at 23 minutes, operate in the wide temperature range from just above freezing to almost 30C, and reach the maximum allowable speed under the Permit to Fly issued by the CAA.

Critically, throughout all phases of testing, the fuel cell power generation and electric propulsion system that are the core components of the novel zero-emission engine, performed at or above expectations. The hydrogen-electric engine has matched the power of the conventional, fossil fuel engine on the opposite wing, with the pilots able to fly with thrust generated only from the experimental clean propulsion system in certain tests.

engine

Gabriele Teofili,

Head of Aircraft Integration & Testing,

ZeroAvia, said:

"Plenty of people go through 40 year careers without marking their name in the history books of aerospace engineering. I'm so proud that so many of the team at ZeroAvia can say that they have done that already with this first phase of test flights. This Dornier 228 will now always have a place in our hearts, but we're excited to take it on its next adventure and head further afield."

Val Miftakhov,

Founder & CEO, ZeroAvia, said:

"Zero-emission flight technologies are moving from promise to delivery and our amazing team is leading the way with this testing programme. We do not have to push the unappealing choices on passengers of paying more or flying less to deliver climate conscious air travel. We instead can adopt this technology quickly to reduce climate impact and air pollution."

Minister for Industry & Economic Security Nusrat Ghani MP said:

"ZeroAvia is making fantastic progress in pioneering zero emission flight, and I want to congratulate them on another important step completed with their successful flight test campaign.

"I'm pleased that government support through the ATI Programme has helped ZeroAvia find innovative new ways to cut aviation emissions, which will help us deliver our Jet Zero Strategy and secure high-skilled green jobs in the UK."

February 3, 2025

ZeroAvia Receives FAA G-1 for 600kW Electric Propulsion System

Issue paper confirms basis of certification and provides clear pathway to certification of the company's first commercial product

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[Everett, WA: February 3rd, 2025] — ZeroAvia today announced that it has reached consensus on the Certification Basis relating to its 600kW electric propulsion system (EPS) with the Federal Aviation Administration (FAA), having received a G-1 Issue Paper (stage 2) and formally confirmed agreement with its contents.

The G-1 represents a key milestone on the journey towards final certification of the company's EPS with the U.S. regulator, and also on its path to certifying its first full hydrogen-electric powertrain (of which the EPS is a core system) with the UK Civil Aviation Authority. The issue paper designates the applicable airworthiness regulations specific for ZeroAvia's EPS, allowing the company to validate its design requirements.

ZeroAvia's 600kW EPS combines the company's proprietary inverter and electric motor technology to deliver a highly efficient electric engine with exceptional fault tolerance and specific power. The 600kW EPS system comprises four ZeroAvia 200kW continuous power bidirectional inverters converting DC power to AC to supply ZeroAvia's direct drive motor, capable of 2,200 rpm. Potential applications for the 600kW EPS include battery, hybrid and fuel cell electric fixed-wing aircraft, rotorcraft and Unmanned Aerial Vehicles.

The 600kW system was designed as part of ZeroAvia's wider ZA600 hydrogen-electric powertrain, designed for up to 20 seat commercial aircraft. By advancing the aerospace applicability and performance of power electronics and electric motors, the company is progressing discussions to supply the electric propulsion system separately to other clean aviation innovators. Last year ZeroAvia opened a 136k sq ft Propulsion Center of Excellence in Everett, WA to produce these electric propulsion systems.

The electric propulsion system is one part of the company's deep portfolio of fuel cell, power electronics and electric motor technology developed thanks to a strong commitment to vertical integration, and ZeroAvia launched a component offering to serve the market for novel electric air transport applications in May 2024.

Val Miftakhov, Founder & CEO, ZeroAvia said:

"While hydrogen-electric is the future for the majority of commercial routes in existence today, advances in electric propulsion technology and novel aircraft design are opening up an exciting range of new shorter range, electric air mobility applications. Certifying and selling our 600kW electric propulsion system helps ZeroAvia expand our addressable market and increase our impact in pursuit of a clean future of flight."

"With nearly 3000 orders for our full powertrains and components, achieving a first certification will be a monumental achievement for our team and for the aviation industry, unlocking clean, efficient and affordable air transport all over the world."

ZeroAvia has already extensively tested a prototype of the ZA600 hydrogen-electric engine aboard a Dornier 228 aircraft at its UK base. The company has an engineering partnership with Textron Aviation as it looks to secure a supplemental type certificate for the Cessna Grand Caravan as the launch airframe for the ZA600.

ZeroAvia has also performed advanced ground tests in the US and UK for the key building block technologies for the ZA2000 system, including cryogenic tanks or LH2 and proprietary high-temperature PEM fuel cell and electric propulsion systems. The ZA2000 will support up to 80 seat regional turboprop aircraft such as the ATR 72 and the Dash 8-400.

ZeroAvia is leading the transition to a clean future of flight by developing electric propulsion technologies for aviation to unlock lower costs and emissions, cleaner air, reduced noise, energy independence and increased connectivity. The company is developing hydrogen-electric (fuel cell-powered) engines for existing commercial aircraft segments and also supplying hydrogen and electric propulsion component technologies for novel electric air transport applications (including battery, hybrid and fuel cell powered electric fixed-wing aircraft, novel eVTOL designs, rotorcraft and Unmanned Aerial Vehicles). ZeroAvia has submitted its first full engine for up to 20-seat planes for certification and is working on a larger powertrain for 40–80-seat aircraft, with significant flight test and regulatory milestones achieved with the U.S. FAA and UK CAA.

For more, please visit ZeroAvia.com, follow @ZeroAvia on Facebook, Twitter/X, Instagram, LinkedIn, and YouTube.

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