



The Piper M-Class airframe, in which ZeroAvia has been flight testing its prototype powertrain | Photo source ZeroAvia

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WORLD'S FIRST HYDROGEN-POWERED AIRCRAFT POWERTRAIN



MOBILITY & TRANSPORT

An aviation startup has developed an aircraft powertrain that uses hydrogen for fuel, eliminating harmful emissions

Spotted: Aviation accounts for 12 per cent of global transportation carbon emissions, but it is also one of the fastest-growing sectors in transportation. Aeroplane emissions are released at high altitudes and have up to four times the impact of ground-based emissions. Yet the elimination of flying, which would bring an end to industries such as tourism which employ hundreds of millions of people, is out of the question at this time.

California-based company, ZeroAvia, is working on a solution. They have developed what they claim is the world's first practical, emission-free, hydrogen-fueled aviation powertrain. The company was founded by cleantech entrepreneur, Val Miftakhov, and received £5.3 million in UK government funding to develop the technology through the test flight stage.

Initially, ZeroAvia plans to replace the piston engines in propeller aircraft with its new hydrogen powertrain, which includes hydrogen fuel cells, electric motors and gas storage. The goal is to enable smaller aircraft to fly for between 300 and 500 miles on hydrogen alone. This would also allow the economical use of smaller local airports for regional travel.

[According to Miftakhov](#), hydrogen-based aircraft is also more economical than turbine engines, with greater efficacy, lower maintenance and cheaper engines to operate.

ZeroAvia is not the only company seeking to reduce the environmental impact of flying. At Springwise we have also seen innovations such as an electric [flying motorcycle](#) and an [electric seaplane](#).

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Takeaway:

In addition to air travel, ZeroAvia hopes its powertrain could also be used in other industries, such as agriculture and cargo. The company also plans to develop powertrains for different types of aircraft. As Mitakhov points out, “[With governments around the world calling for a shift towards clean transportation, ... it is imperative for us as an industry to ensure sustainable aviation is cleared for take-off.](#)”