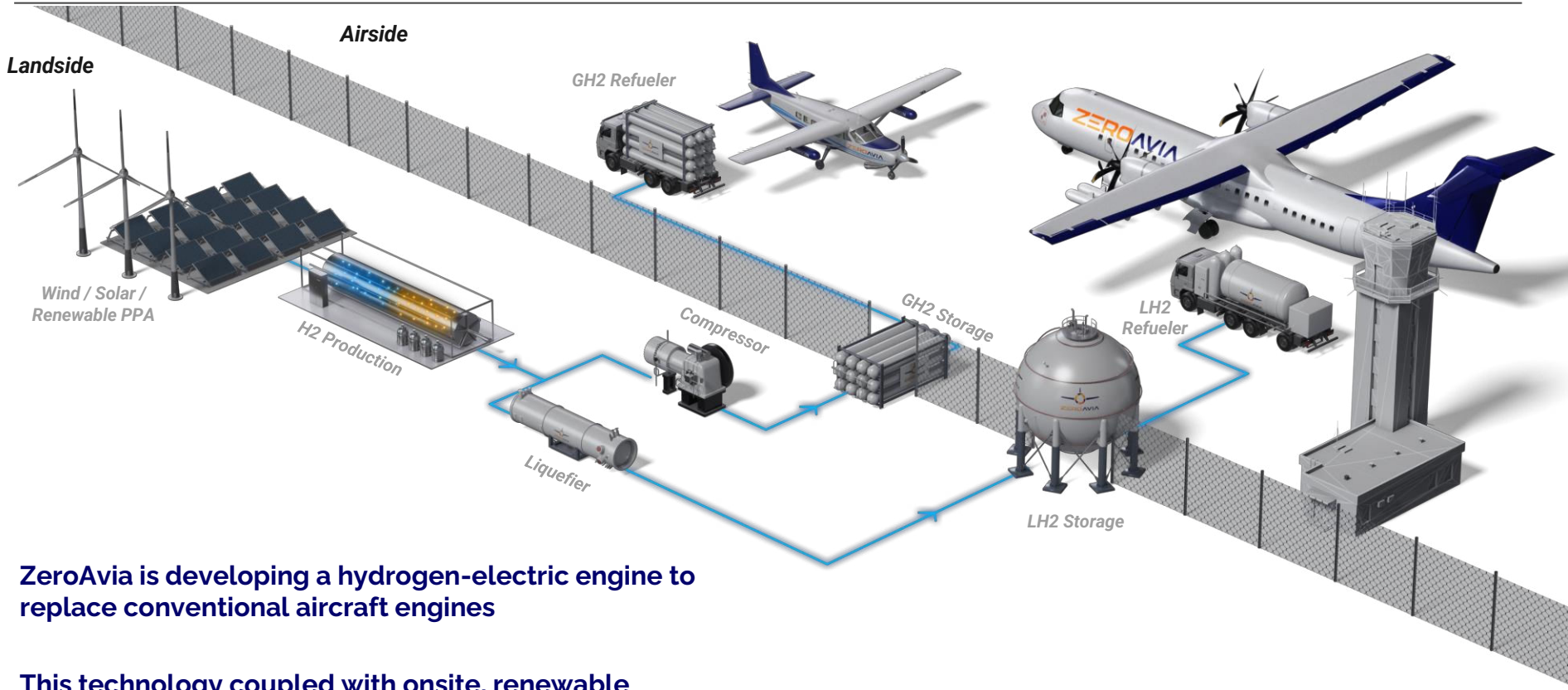
Hydrogen-Electric Propulsion for Zero Emission Flight

Who are we? - Our vision for a sustainable world



ZeroAvia is developing a hydrogen-electric engine to replace conventional aircraft engines

This technology coupled with onsite, renewable hydrogen production can decarbonize airport ecosystems

Why H2-electric? - The greatest climate impact reduction

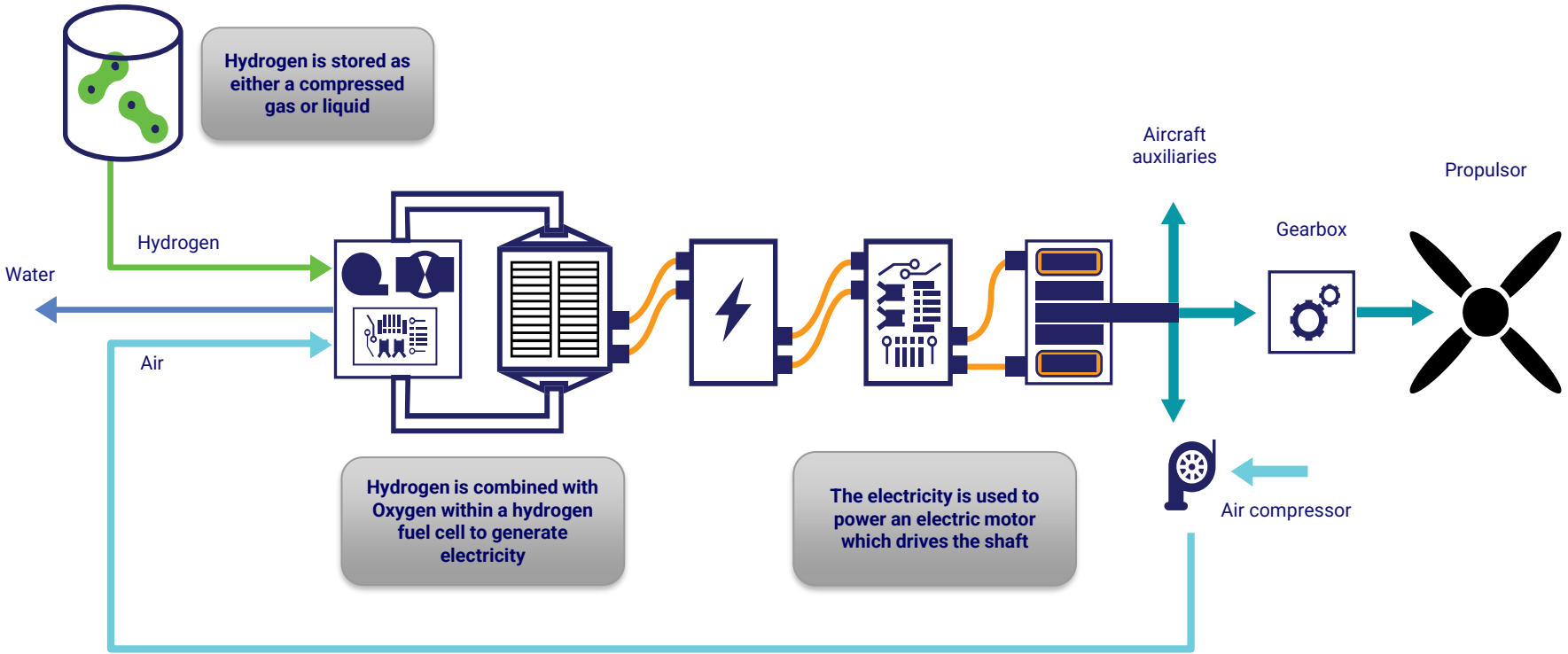
Reduction of in-flight emissions and related effects

	Direct CO_2	Non-CO_2 (No_x)	Water Vapour	Contrails, cirrus	Net climate impact reduction potential
H_2-electric	-100%	-100%	+150%[1]	-60-80%[3]	Up to 90%
H_2 Combustion	-100%	-50-80%	+150%	-30-50%	Up to 75%
Synthetic Fuels (SAF)	-0%[2] (-100% if CO_2 is removed during production)	-0%	-0%	-10-40%	Up to 60%

Hydrogen-electric has the potential to reduce climate impact up to **90%** and is the **only scalable solution**

Source: Hydrogen-powered aviation | A fact-based study of hydrogen technology, economics, and climate impact by 2050, Source: FZO-STY-REP-0005

What is a hydrogen-electric engine?



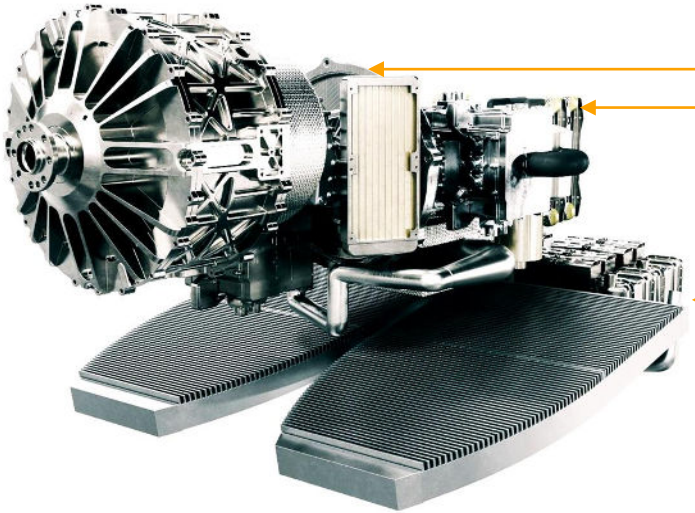
Our first hydrogen-electric engine – the ZA600

ZeroAvia is developing the core technology in-house to offer a vertically integrated engine solution.

Fuel cell based power generation using green hydrogen and oxygen to produce electricity through a chemical reaction (no combustion).

Electric motors for propulsion.

Water and heat are the only in-flight emissions.



ADVANCED MOTOR TECHNOLOGY

High torque, aerospace grade motor designed in house with 660 kW peak power.

ENGINE HEALTH MONITORING

In house developed EHM software for real time performance monitoring, increasing reliability.

COMPRESSOR

ZeroAvia designed, shaft driven compressor to provide air to the fuel cell system

REMOTE IVERTERS

State of the art, aerospace grade Silicon Carbide inverters developed in house.

FUEL CELL STACKS

High power-density, multi-stack LTPEM fuel cell modules developed, with partner PowerCell.

Our Strategy - Scalable Hydrogen-electric technology

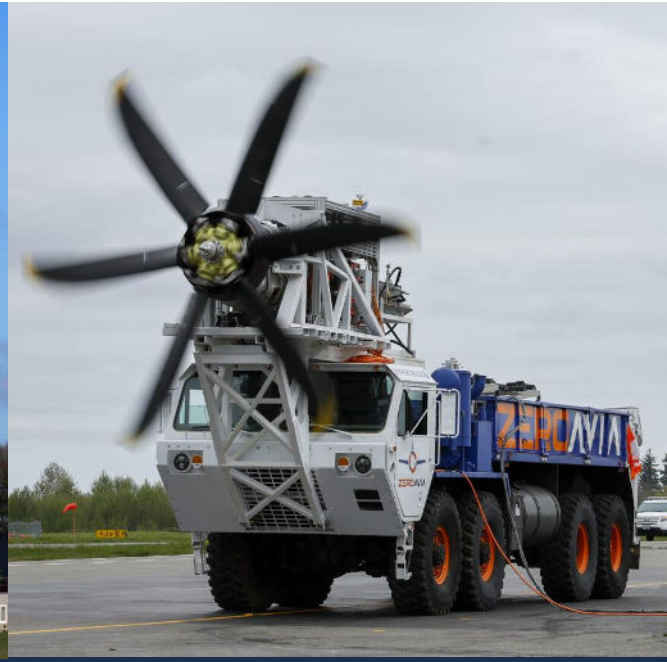
Scaling to large turboprop, regional jet and beyond is enabled through ZeroAvia's in house **HTPEM fuel cell technology** and our **HyperCore motor.**

ZeroAvia is working with world leading **liquid hydrogen tank** manufacturers to improve volume density of the fuel storage.

PATH TO NET ZERO

	2025	2027	2029	2032+
POWERTRAIN	ZA600	ZA2000	ZA2000RJ	ZA10000
SHAFT POWER	500 – 750 kW	2 – 4 MW	5+ MW	10+ MW
H_2 STORAGE	Gas	Liquid	Liquid	Liquid
FUEL CELL TECHNOLOGY	LTPEM	Next Gen LTPEM / HTPEM	HTPEM	HTPEM
MOTOR TECHNOLOGY	Direct drive 660 kW	HyperCore 900 kW	HyperCore 900 kW	HyperCore 900 kW

Where are we now? - Rigorous flight and ground testing



PIPER MALIBU

First flown in 2020 with over 35 flights of 250 kW system. Gained invaluable experience for 600 kW program.

DORNIER-228

First flown in 2023. 10 flight test campaign completing conditions of permit to fly. Further flight tests to continue.

HYPERTRUCK

Testing of 1.8 MW Electric Propulsion System in California. Demonstrating scalability of ZeroAvia's technology to large turboprop applications.

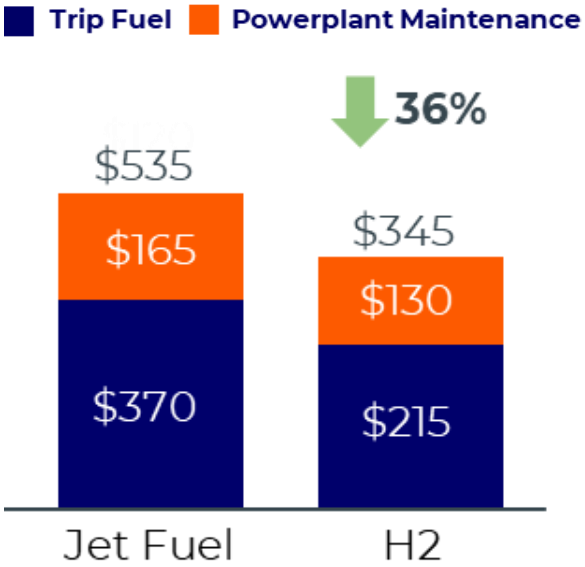
Commercially Viable - Operating Economics

Significant cost reductions

A hydrogen-electric powertrain is low temperature and low pressure compared with a turbine engine

This drives lower maintenance costs through longer time between overhauls and less onerous maintenance events

Jet fuel price expected to double in next 25 years through SAF and with on-going risk of market shocks on feedstocks and fossil fuels



Cost reduction for 250 nautical mile route.
Assuming annual utilization of 1000 FH & 1500 FC at maximum payload, in 2025 economics. H2 price = $4.50 per kg. Blended jet fuel price = $1.35 per kg. No inflation assumed.

Supported by Top Partners ($200m+ raised)

ZEROAVIA

ESG Investors

APVentures
ADVANCE & PIONEER

Breakthrough Energy

THE ECOSYSTEM INTEGRITY FUND

HorizonsVentures 维港投资

SUMMAEQUITY

SYSTEMIQ

BARCLAYS

Strategic Investors

AIRBUS

amazon

Alaska AIRLINES

BRITISH AIRWAYS

American Airlines

UNITED

Government

Department for Business, Energy & Industrial Strategy

Department for Transport

AEROSPACE TECHNOLOGY INSTITUTE

UKRI Innovate UK

Washington State Department of Commerce

INFRASTRUCTURE BANK