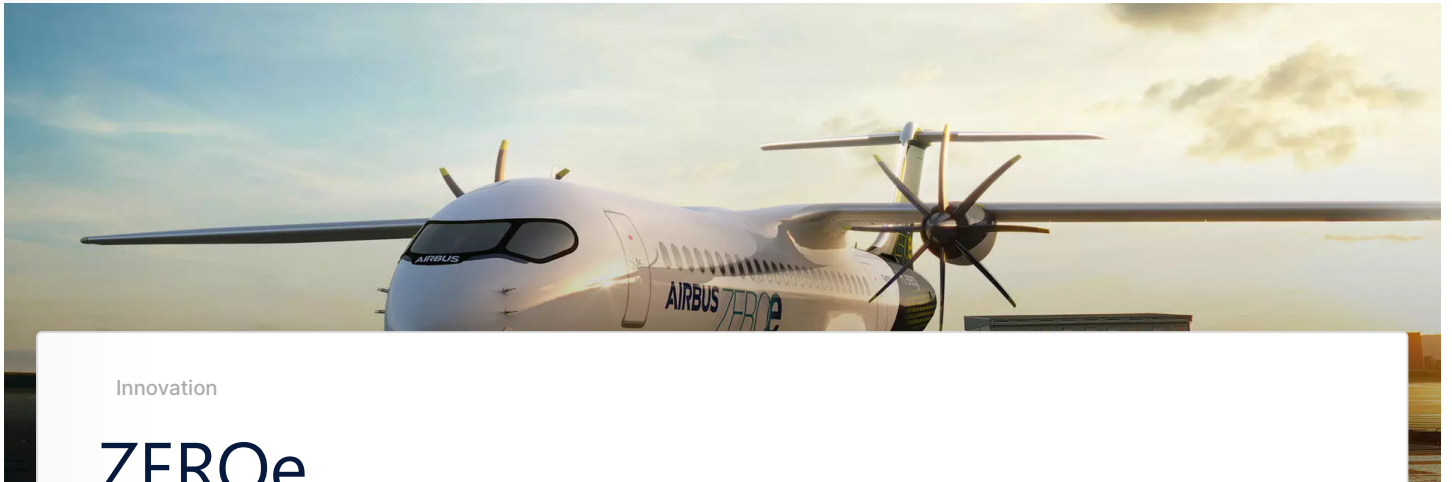




Innovation

ZEROe

Towards the world's first hydrogen-powered commercial aircraft

[Hydrogen-powered](#)

[Concepts](#)

[Technology & Tests](#)

[People](#)

[Ecosystem](#)

Menu

Airbus' ambition is to bring to market the world's first hydrogen-powered commercial aircraft by 2035. To get there, our ZEROe project is exploring a variety of configurations and technologies, as well as preparing the ecosystem that will produce and supply the hydrogen.

Hydrogen propulsion to power future aircraft

All four ZEROe concepts are powered by hydrogen.

In the case of **hydrogen combustion**, gas turbines with modified fuel injectors and fuel systems are powered with hydrogen in a similar manner to how aircraft are powered today.

A second method, **hydrogen fuel cells**, creates electrical energy which in turn powers electric motors that turn a propeller or fan. This is a fully electric propulsion system, quite different to the propulsion system on aircraft currently in service.

These technologies are complementary, and the benefits are additive.

ZEROe Concept Aircraft



Turbofan

Range: 2,000+ nm | Passengers: <200

Two hybrid-hydrogen turbofan engines provide thrust. The liquid hydrogen storage and distribution system is located behind the rear pressure bulkhead.



Turboprop

Range: 1,000+ nm | Passengers: <100

Two hybrid-hydrogen turboprop engines, which drive eight-bladed propellers, provide thrust. The liquid hydrogen storage and distribution system is located behind the rear pressure bulkhead.



Blended-Wing Body (BWB)

Range: 2,000+ nm | Passengers: <200

The Blended-Wing Body's exceptionally wide interior opens up multiple options for hydrogen



Fully electrical concept

Range: 1,000 nm | Passengers: <100

The fully electrical concept was revealed in December 2020. It is based on a fully electrical propulsion system powered by fuel cells.

Discover ZEROe concepts

Airbus introduces ZEROe

Technology and Testing

Airbus is meeting a number of technology and testing milestones as it moves towards its ambition of bringing to market a hydrogen-powered commercial aircraft by 2035.

Many of these milestones revolve around establishing the means of propulsion, either via **hybrid hydrogen-electric fuel cells** or **direct hydrogen combustion**. Airbus has even established a joint venture with automotive supplier ElringKlinger AG, [Airbus Aerostack](#), to develop hydrogen fuel cell stacks at the heart of an electric propulsion system.

Airbus is exploring both hydrogen-combustion and fuel-cell propulsion technologies, for which demonstrators have been launched. It has also set-up dedicated Development Centres in France, the UK, Germany and Spain to work on tanks and cryogenic fuel systems.

Airbus test aircraft [A380 MSN1](#) is taking the lead in testing these technologies that will be vital to bringing a hydrogen-powered commercial aircraft to market.



In our mission to bring a hydrogen powered aircraft

People

Meet some of the faces behind ZEROe, and read about the passions, dreams and ambitions that drive them. Want to join them? We're [hiring](#)! Airbus is looking for the brightest and best to design the future of aviation. Find out which specialist skills and profiles are in demand.



Meet Natalia

Fuel Cell System Engineer | Hamburg, Germany

As a Fuel Cell System Engineer in Hamburg, Natalia Medina Cabello brings her interest in renewable energy to life through her work on the ZEROe hydrogen-powered concept aircraft. Here she gives us an inside look at her responsibilities on the project and how she came to join the team.

[Read more](#) >



Meet Fabien

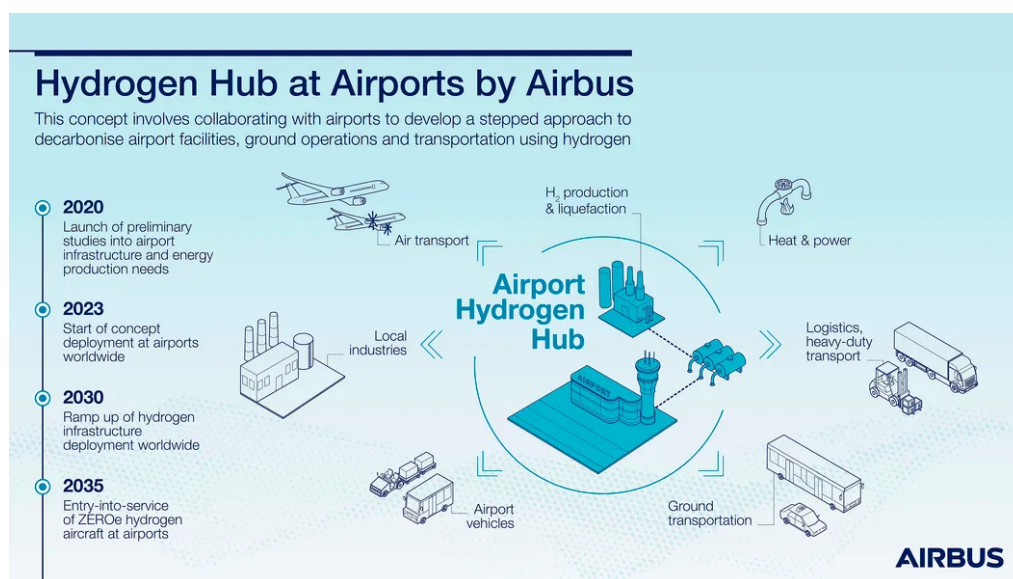
Value Assessment & A/C Economics | Blagnac, France

First inspired to join Airbus as a teen when he saw the A380 take flight for the first time, Sustainable Aviation Strategist Fabien Romero now assesses business models for another groundbreaking Airbus

Ecosystem

The race for hydrogen-powered commercial aviation starts on the ground. Hydrogen has to be produced, transported and stored in the right quantity, at the right time, place and cost. Its production and use must be regulated and certified.

Airbus believes the deployment of hydrogen infrastructure at airports is a prerequisite to support the widespread scale-up and adoption of hydrogen aircraft. We're partnering with hydrogen producers and distributors worldwide, airports and airlines to build the right ecosystem to operate a hydrogen-powered aircraft by 2035. We're already bringing together all the key players to the table.



This concept involves collaborating with airports to develop a stepped approach to decarbonise airport facilities, ground operations and transport using hydrogen.

Discover our Airbus' ZEROe Series

The Countdown to ZEROe: Episode 1: Tanks

How does an aircraft fly using hydrogen? Whether hydrogen is burned directly or converted into electricity in fuel cells, it first needs to be safely stored at -253°C ! Find out how our teams in Toulouse, Nantes and Bremen are collaborating to design and manufacture innovative cryogenic storage that will enable hydrogen-powered flight.

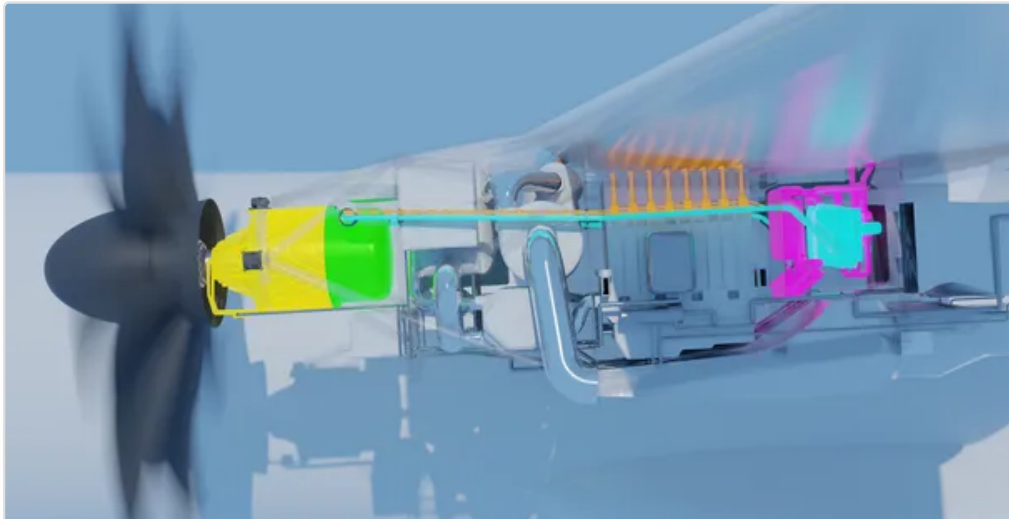
28 Nov 2022 • 04:23

The countdown to ZEROe: Episode 2: Fuel Cell Systems

14 Dec 2023 • 02:48

The countdown to ZEROe: Episode 3: Fuel Cell Systems Testing

Latest news



Innovation

23 May 2024

Airbus takes superconductivity research for hydrogen-powered aircraft a step further

Airbus UpNext, a wholly-owned subsidiary of Airbus, has launched a new technological demonstrator to accelerate the maturation of superconducting technologies for use in electric propulsion systems of a future hydrogen-powered aircraft.

[Read more](#) >



Innovation

21 May 2024

Airbus, Delta, Plug Power, Hartsfield-Jackson Atlanta International Airport study feasibility of hydrogen hub at world's...

Airbus, Hartsfield-Jackson Atlanta International Airport (ATL), Delta Air Lines and Plug Power have joined forces to study the feasibility of a hydrogen-based hub at the world's busiest airport in support of advancing a more sustainable future of travel.



Innovation

21 May 2024

Airbus, Houston Airports, Center for Houston's Future join forces to study feasibility of hydrogen hub at George Bus...

Airbus, Houston Airports and the Center for Houston's Future (CHF) have signed a Memorandum of Understanding to study the feasibility of a hydrogen hub at George Bush Intercontinental Airport (IAH).

[Read more >](#)

[Read more](#)



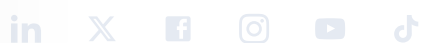
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