

Airbus launches ICEFlight to accelerate maturation of cryogenic technologies for hydrogen-powered flight

Leiden, The Netherlands, May 19, 2025 – Airbus, through its Tech Hub in the Netherlands and together with its innovation arm Airbus UpNext and local partners, has launched ICEFlight (Innovative Cryogenic Electric Flight), a project aiming to contribute to the development of hydrogen-powered flight. The initiative, under administration of Dutch public-private programme “Luchtvaart in Transitie” (LiT) will focus on accelerating the maturation of critical cryogenic technologies.

ICEFlight is an Airbus-led consortium within the Dutch ‘Luchtvaart in Transitie’ (LiT) programme, and is co-funded by the National Growth Fund. To achieve the project’s ambitious goals, Airbus is partnering with key players in the Dutch aerospace ecosystem, including GKN Aerospace, Cryoworld B.V., Stirling Cryogenics B.V., Futura Composites B.V., the Royal NLR, Delft University of Technology and the University of Twente.

The consortium will collectively explore the use of liquid hydrogen as a fuel source as well as a cold source for the electrical system cooling. This approach aims to enhance the performance of next-generation aircraft powertrains through the integration of advanced electrical technologies, superconductivity and hyperconductivity. Together with GKN Aerospace, knowledge from past projects will be applied to mature these technologies in preparation of a flight demonstration. The collaboration will concentrate on the development and rigorous testing of specialised cryogenic cooling and electrical distribution systems.

Marloes van Put, Head of the Airbus Tech Hub in the Netherlands: “ICEFlight is a prime example of the innovations we focus on with the Airbus Tech Hub. By bringing together the brightest minds and cutting-edge technologies within our local ecosystem, we aim to accelerate the maturation of critical cryogenic solutions that will not only benefit our future aircraft but also strengthen the Dutch ecosystem.”

In addition to the technological innovations to be explored, ICEFlight aims to establish testing facilities in the Netherlands, led by the Royal NLR, to ensure the reliability and validate the performance of the new cryogenic systems. These facilities will help to position the Netherlands as a leader in cryogenic technology, particularly in the development and testing of cooling systems that enable superconductivity and hyperconductivity in aviation, with opportunities to spin-off to other sectors.

At the end of the project, the Dutch research framework and supply chain will be positioned to provide two critical innovations, namely a cryogenic cooling system and cryogenic electrical network. These advancements will enhance the Netherlands' global competitiveness in aerospace technologies, paving the way for future developments in aviation.

Press Release

Russ Dunn, CTO of GKN Aerospace: "GKN Aerospace is proud to be a core partner in the ICEFlight project. By leveraging our expertise in both hydrogen systems and electrification, this project marks a significant step towards enabling the scalability of these innovative solutions into larger aircraft applications. Together with Airbus and our Dutch partners, we bring world-leading capabilities in both power network design and cryogenic applications."

Rob Postma, CEO of Airbus Netherlands: "The Airbus Tech Hub aims to catalyse breakthroughs in aerospace technology. ICEFlight is a major Tech Hub project we're launching in The Netherlands. After a very successful start of the Tech Hub last year, we have now five projects up and running. In the years to come, we are planning for even more in collaboration with our partners, so we can shape the future of aviation."

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About Luchtvaart in Transitie (LiT)

'Luchtvaart in Transitie' (LiT) is an eight-year public-private programme in which the Dutch government and the (Dutch) aviation sector join forces.

About the National Growth Fund

The National Growth Fund (NGF) is a programme of the Dutch Government, allocating funds to projects with the highest potential of contributing to durable economic growth in the Netherlands.

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For more information about ICEFlight, please visit <https://luchtvaartintransitie.nl/en/project-item/iceflight/>