

Research project on LH2 refuelling at airports

The recently launched EU project ALRIGH2T ("Airport-level demonstration of ground refueling of liquid hydrogen for aviation") aims to develop innovative refuelling technologies and processes for liquid hydrogen for use in aviation – and to demonstrate them at two major airports.

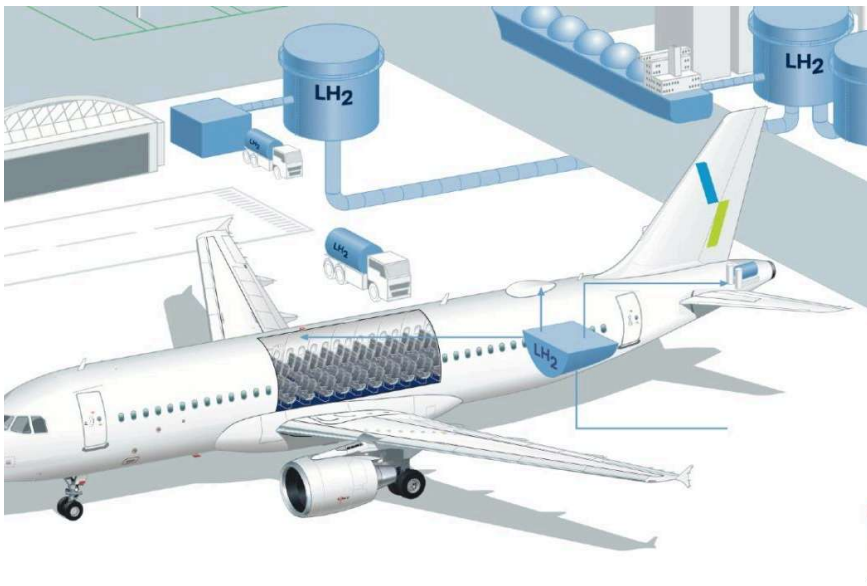


Image: Hamburg Aviation

By Sebastian Schaal

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E-Aircraft

Fuel cell

ALRIGH2T

With a funding amount of almost ten million euros, the ALRIGH2T project brings together an international consortium of 21 partners from seven EU countries and Israel for a period of 48 months. With their developments, the partners aim to contribute to reducing the environmental impact of the aviation sector. According to the press release, this is responsible for 2.5 to 3 percent of total greenhouse gas emissions.

The project is purely concerned with the airport-side infrastructure for LH2-based aircraft engines – whether the liquid hydrogen is then burned in an adapted aircraft engine or converted by a fuel cell into electricity for an electric motor is of secondary importance. In addition to direct refuelling, the research teams also want to investigate solutions such as replacing entire hydrogen tanks. Hydrogen becomes liquid at temperatures below -253 degrees Celsius, in which case it is referred to as liquid hydrogen or LH2 for short.

By the way, this is not the first LH2 project for airports in Europe. In Hamburg, too, the [effects of LH2 propulsion systems on the ground handling of airports have already been investigated](https://www.electrive.net/2021/07/08/hamburger-projekt-zum-h2-einsatz-in-der-luftfahrt-gestartet/) – for example, during aircraft maintenance.

"However, the development of innovative LH2-based solutions brings with it many new challenges in terms of hydrogen management and handling at airports, ensuring delivery deadlines and maintaining a high level of safety and operational protection. The use of ALRIGH2T refuelling systems aims to address these significant challenges arising from the use of LH2 in aviation," reads the statement from the Salzburg-based Aluminium Group, which is involved in the project.

In addition to the development of such systems, real-world tests are also planned. These will be carried out at Milan Malpensa International Airport and a "reference airport" in Paris. The exact airport in the French capital is not specified. However, they are said to be "different types of airports".

This is not just a matter of technical feasibility, because the processes for refuelling with liquid hydrogen must also fit into the well-timed and highly complex processes and safety concepts of an international airport if they are to prove themselves in practice. "Compromise solutions must be found to ensure the proper supply of hydrogen to aircraft, correct ground movements at the airport, and the establishment of new clauses and standardization guidelines for the implementation and replication of these solutions at other airports," writes the Salzburger Aluminium Group.

In addition to the Salzburger Aluminium Group, the AIT Austrian Institute of Technology, LKR Leichtmetallkompetenzzentrum Ranshofen and Test-Fuchs are also involved from Austria. The German project partners are Linde and the Technical University of Munich, while Linde Kryotechnik is also involved from Switzerland. ENEA, the Italian National Agency for New Technologies, Energy and Sustainable Economic Development, is leading this collaborative project, which is funded by the European Union as part of the Horizon Europe programme.

Quelle: Info per E-MaAnzeige



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