



Hydrogen Europe: European Hydrogen & Fuel cell Project Database

Project HYCARUS

HYdrogen cells for AiRborne Usage

In order to meet the increasing pressure to reduce fuel consumption and greenhouse gas emissions, airlines are seeking alternative sources to power non-propulsive aircraft systems. The next generation of aircraft is heavily investigating the use of non-fossil fuel to generate electrical power for non-essential applications (NEA). Hydrogen fuel cells are actively being pursued as the most promising means of providing this power. Fuel cells also have the added benefits of no pollution, better efficiency than conventional systems, silent operating mode and low maintenance. The by-products from the fuel cells (heat, water and oxygen depleted air) will also have a positive impact on the global aircraft efficiency when they are harnessed and reused within the aircraft system. The HYCARUS project will design a generic PEM fuel cell system compatible of two NEA, then develop, test and demonstrate it against TRL6. A secondary electrical power generation model for a business executive jet will be run. The application will be tested with the fuel cell system and the storage system under flying conditions. Furthermore, investigations will be made to understand how to capture and reuse the by-products. The HYCARUS project will extend the work already completed in the automotive sector, particularly for safety codes and standards, and develop these for use in airborne installation and applications. Improvements in terms of efficiency, reliability, performance, weight /volume ratio, safety, cost and lifetime under flight conditions at altitude and under low ambient temperatures (mainly in the air) will also be examined. The HYCARUS project also aims to foster a better and stronger cooperation between all the agents of the sector: Aeronautics equipment and systems manufacturers, aircraft manufacturers, system integrators and fuel cell technology suppliers.

Project Information

Type of project : Demonstration

Timing : 01/05/2013 > 30/04/2018

Project website: <http://hycarus.eu/>

Project Budget : 12.064.473 €

Funding

European Union through FCH JU: **Grant agreement 325342 - CORDIS link**

Project partners

Coordinator :

Zodiac Aerotechnics

Partners :

CEA - Commissariat à l'énergie atomique et aux énergies alternatives

AIR LIQUIDE ADVANCED TECHNOLOGIES SA

INTA - Instituto nacional de Técnica Aeroespacial

Zodiac ECE

ZODIAC CABIN CONTROLS GMBH

DASSAULT AVIATION

JRC - JOINT RESEARCH CENTRE- EUROPEAN COMMISSION

ARTTIC

ZODIAC GALLEYS EUROPE SRO

Sub project(s)

Sub project 1

Country: France

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Sub project categories

Demonstration

Project Id: 994

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