

# AMBER

## InnovActive DeMonstrator for hybrid-Electric Regional Application

Numerous studies highlight the urgent need to decarbonize global industry and to drastically reduce pollutant emissions across all sectors, including aviation.

Although, the global environmental impact of aviation is mostly driven by small-medium range market aircraft due to the large volume of operations, the development of disruptive technologies for the power demands such applications require cannot be put in place until progressive maturation of novel enabling technologies has been achieved at lower scale or sizes. Instead, an intermediate step will be required to significantly reduce GHG emissions already by 2035.

The development of a hybrid-electric propulsion system for regional aircraft with at least 50% hybridization represents this very challenging, yet achievable intermediate step and can allow for a mission fuel burn reduction by at least 50% compared to 2020 state-of-the-art regional aircraft. A thermal engine that allows for usage of 100% sustainable aviation fuel, will allow to reduce lifecycle GHG emissions by 90% and thus close to zero.

The proposed project AMBER addresses this aspect and pursues the maturation of hybrid-electric key components and the validation of a product-representative parallel hybrid-electric propulsion system architecture, fuel cell based, for next-generation regional aircraft with EIS by 2035.



This project has received funding from the European Union Horizon Europe – Clean Aviation JU

### PROJECT DURATION

From to 01/01/2023 to 31/03/2026  
39 months

### WEBSITE AND SOCIAL MEDIA

Under construction

### PARTNERS

- GE AVIO SRL (Coordinator)
- GENERAL ELECTRIC DEUTSCHLAND HOLDING GMBH
- GE AVIATION CZECH SRO
- GENERAL ELECTRIC COMPANY POLSKA SPOLKA Z OGRAN
- ARTTIC INNOVATION GMBH
- H2FLY GMBH
- LEONARDO - SOCIETA PER AZIONI
- TTC - GE Marmara Technology Center
- C.I.R.A. CENTRO ITALIANO RICERCHE AEROSPAZIALI SCPA
- Deutsches Zentrum für Luft- und Raumfahrt
- FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG
- VYZKUMNY A ZKUSEBNI LETECKY USTAV
- CESKE VYSOKE UCENI TECHNICKE V PRAZE
- POLITECNICO DI BARI
- POLITECNICO DI TORINO
- UNIVERSITA DI PISA
- SIEC BADAWCZA LUKASIEWICZ INSTYTUTLOTNICTWA
- AM TESTING SRL
- DREAM INNOVATION SRL
- ERGON RESEARCH SRL
- NTI Engineering srl
- GE Aviation Systems limited

### FUNDING PROGRAM

HORIZON-JU-Clean-Aviation-2022-01

### BUDGET

Funding for POLITO: 1 095 122.50 €  
Funding for DIATI: 224.781,00 €

### PoliTo and DIATI's role:

Politecnico di Torino is partner of the Consortium - DIMEAS (coordinator), DIATI, DENERG.

Scientific supervisor for DIATI:  
**Prof. Giovanni Andrea Blengini**