

# Climate Neutral Alternative Fuels

## Brazil and Germany in partnership for decarbonization

### The challenge

In Brazil, the demand for fuel in the transportation sector has increased about 5 percent per year. In air travel, this growth is even stronger as airlines expand their services to more remote areas of the country. Such trends accelerates climate change and entails a huge logistical challenge regarding fuel supply.

The aviation sector has committed to climate-neutral growth, which will only be possible in the mid-term with the use of non-fossil fuels. Even with an increase in the production of ethanol and biodiesel, biofuels can only play a limited role in satisfying the growing demand.

### Our approach

One possible climate-friendly solution for air traffic are renewable fuels based on wind and solar electricity. Brazil has ideal conditions to meet the requirements for this. There is abundant sun radiation across the country for photovoltaic systems, and many regions have constant wind or other climate-friendly, low-cost renewable energy sources.

Small decentralised power plants that produce fuel for aviation from renewable electricity contribute not only to climate-neutral aviation, but can already produce with cost efficiency in many remote locations.

### Objective

This project aims to present an international reference case for the production and application of electricity-based (Power-to-Liquid PtL) sustainable fuels for aviation. Framework conditions for the use of these fuels shall be improved and real figures, data and facts will be provided to enrich the international debate on the change to greener transport.

Project name	Climate Neutral Alternative Fuels
Commissioned by	Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV)
Project region	Brazil
Lead executing agency	Ministério da Ciência, Tecnologia e Inovações (MCTI)
Copartnership	German Aerospace Center (DLR) and National Agency of Petroleum, Natural Gas and Biofuels (ANP)
Duration	08/2017 — 02/2023
Budget	€ 5.700.000

These data will derive from the experience of the planning, financing, construction and operation of a demonstration plant in Brazil. Financing is provided by Brazilian and international public funding and investments from the private sector.

In the future, plants of this kind are to be produced in series and shall be used at extremely remote airports in the Amazon regions.

The Brazilian implementation partners are the Ministry of Science, Technology and Innovation (MCTI) and the National Agency of Petroleum, Natural Gas and Biofuels (ANP). From the German side, in addition to the GIZ, the projects collaborate with the German Aerospace Center (DLR).

### The Multiplier Effect

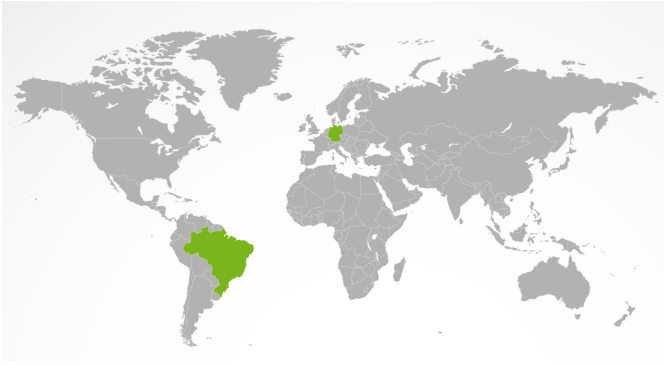
The Project actively integrates various Brazilian ministries, authorities, universities and other public institutions as well as associations and companies, in order to continue developing technologies for climate-neutral fuels and build a critical mass of experts in the country.



*Left: Fueling 01 jet A-1  
 Right: Single engine yellow*

Under real conditions, the project proves that the production and use of electricity-based renewable fuels is economically feasible. It therefore harnesses new sustainable options for aviation and other transport sectors that don't have the potential for electrification, such as shipping.

With its results, the project makes an important contribution to the climate neutrality of the Brazilian and global transport industry.



Despite the effects of the COVID-19 pandemic on the aviation sector, the implementation partners are even more engaged in advancing the pilot plant prospects of the ProQR project than before. In line with international efforts to bring about a sustainable recovery of the sector they want to contribute actively to the upcoming turnaround.

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