PARTNERS

The TAKE-OFF consortium counts 10 partners from 5 European countries and it consists of a leading energy supplier (**RWE Power**), a power and energy solution company (**Mitsubishi Power Europe**), interdisciplinary research institutions (**TNO, CNRS, RWTH, SDU**), design/ engineering companies (**ASAHI KASEI, FEV**) and a communication, dissemintion and exploitation partner (**CO2 Value Europe**). A pioneer and a global leader in sustainable SAF, **SkyNRG** is involved to analyse the fuel quality and assess its suitability for usage in aircraft.

RWE

MITSUBISHI POWER

TNO innovation for life

cnrs

RWTH AACHEN UNIVERSITY

SDU University of Southern Denmark

FEV

AsahiKASEI ASAHI KASEI EUROPE

CO_2 VALUE EUROPE

SKYNRG

takeoff-project.eu

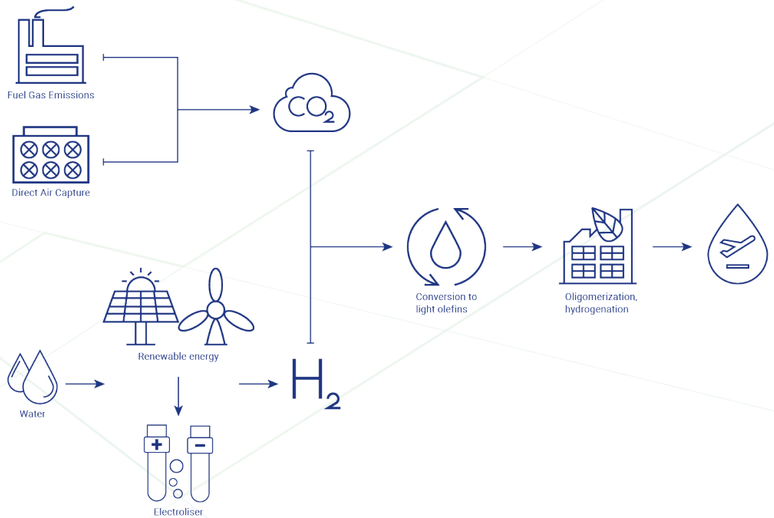
The Take-Off project has received funding from the European Commission under the Horizon 2020 program Ref: 101006799.

TAKE-OFF

Sustainable aviation fuel from CO_2

THE TAKE-OFF PROJECT

The TAKE-OFF project will develop and demonstrate the technology needed for the production of the next generation Sustainable Aviation Fuel (SAF) using captured CO_2 and hydrogen. This technology route aims to develop a highly innovative process which produces SAF at lower costs and higher energy efficiency compared to other power-to-liquid alternatives.



PROJECT CONCEPT

The TAKE-OFF project entitled "Production of synthetic renewable aviation fuel from CO_2 and H_2" has received funding for 4 years from the European Union's Horizon 2020 research and innovation programme under grant agreement N°101006799.

TAKE-OFF's aim is to produce more energy efficient, and high environmental performance Sustainable Aviation Fuel (SAF) at lower cost to decrease the carbon footprint and climate impact of flying.

In that context, the project will develop and industrially validate innovative processes for the direct conversion of CO_2 and renewable H_2 to light olefins and subsequent conversion to Sustainable Aviation Fuel (SAF). Next to this, the indirect conversion of CO_2 and renewable H_2 to light olefins, via methanol/dimethyl ether will also be demonstrated. Both technology developments for the direct and the indirect route are complementary and serve to advance the development of the proposed technology chain, while also minimising risk by a multi angle approach.

The TAKE-OFF project is led by TNO and gathers a highly skilled and multidisciplinary consortium from the entire SAF technology chain.

POTENTIAL IMPACT OF THE PROJECT

+25%
Carbon and hydrogen efficiency compared to other PtL alternatives

-100%
Sulphur compared to fossil aviation fuel

-20%
Total emissions compared to other PtL alternatives

-36%
SAF production costs compared to other PtL alternatives