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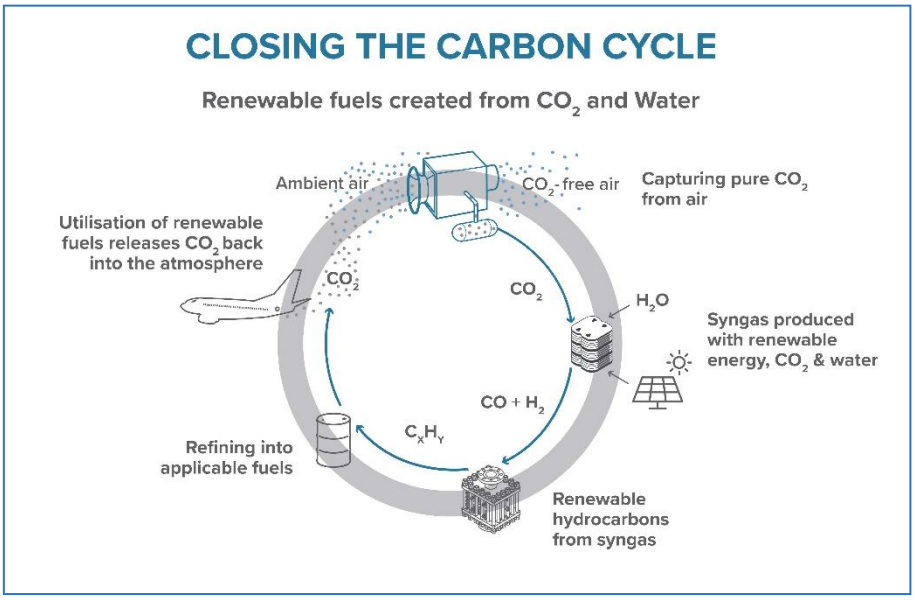
Press Release

Rotterdam The Hague Airport initiates study for the production of renewable jet fuel from air

On Friday May 24, 2019, Rotterdam The Hague Airport and a European consortium led by EDL Anlagenbau Gesellschaft mbH signed a cooperation agreement for a study, which aims at developing a demonstration plant that produces renewable jet fuel from air. This plant aims to be the first worldwide to offer renewable jet fuel from air to the market. Compared to conventional fossil-based jet fuels, renewable jet fuel from air has a significantly lower carbon footprint and fine particles emission. This project thus demonstrates a significant step towards a carbon-neutral aviation industry.



Scheme for renewable fuel from CO_2 and water

Sustainable Aviation

The aviation industry is an emitter of carbon dioxide (CO2) and air travel continues to increase. This also applies to Rotterdam The Hague Airport, where the number of passengers keeps growing every year. Unlike cars, airplanes cannot switch to electric or hydrogen propulsion in the short-term. Rotterdam The Hague Airport is therefore proud to kick-start the realization and commissioning of this plant for the production of renewable jet fuel from air.

The path towards production of renewable jet fuel from air

Following the study, a demonstration plant is to be realized and commissioned on the premises of the airport, producing about 1'000 liters of renewable jet fuel per day. This would be the first time ever that renewable jet fuel from air production exceeds laboratory scale of a few liters per day. A series of highly innovative, but proven technologies are linked to each other to achieve this: First, CO_2 is captured from ambient air by Climeworks' direct air capture technology. The gas is subsequently transformed into syngas through electrolysis, using electrolyser cells developed by Sunfire. Then, the syngas is turned into synthetic hydrocarbons by means of Fischer-Tropsch synthesis, enabled by Ineratec. Finally, EDL takes care of the process to convert synthetic hydrocarbons into jet fuel and of the overall process and plant integration. The entire process runs sustainably, thanks to renewable energy, preferably produced on site from the airport's solar panels.

SkyNRG, the global market leader for sustainable aviation Fuel solutions, is in this project responsible for the commercialization strategy.

The first potential customer has also announced itself. Transavia has committed itself to the plan and indicated it intends to reduce its CO2 exhaust with renewable fuel from air in the future.

Innovation Campus

Due to the innovative technologies that will be applied the demonstration plant will be relatively compact. The architectural integration by Rotterdam based Urban Crossovers & Blueroom will ensure that the plant is part of the overall RHIA campus and fit in both its size and in its objectives.

Foundation Rotterdam The Hague Innovation Airport

The set-up of this plant is facilitated by the foundation Rotterdam The Hague Innovation Airport (RHIA), which was established by the airport and the City of Rotterdam. The foundation focuses on promoting four issues – Entrepreneurship, Energy & Environment, Education, and Emergency – through several innovative projects. The study on renewable jet fuel from air is the first of these projects.

Goal of the study

The study will define the concept and basic engineering for onsite production of renewable jet fuel from air at Rotterdam The Hague Airport. It will enable a cost estimate for both the actual construction of the plant and the fuel itself, which will be decisive for further project development. Rotterdam The Hague Airport is an ideal location for the study due to its size and organization. Royal Schiphol Group, the parent company of RTHA, through its Schiphol Innovation Board, is a partner in making this project possible.

Future

The large-scale production of renewable jet fuel requires an upscaling and, where beneficial, an integration into existing refineries, which will not take place at the airport. Instead, this project aims to provide one of the keys to the transformation of the current fossil dominated petrochemical complex of the Rotterdam Harbor. However, smaller renewable jet fuel production facilities can also be attractive to utilize stranded decentralized renewable power and for remote consumers.

Key Points Summary:

- A consortium led by EDL Anlagenbau Gesellschaft mbH will conduct a study with the aim to realize a demonstration plant producing renewable jet fuel from air at the Rotterdam The Hague (innovation) Airport
- The renewable jet fuel would be produced from air-captured CO_2 and renewable electricity
- Compared to conventional fossil-based jet fuel, renewable jet fuel from air has a significantly lower carbon footprint
- The project is a milestone for the further development of renewable jet fuel, which can help the aviation industry become carbon-neutral in the future

Press Release

EDL Anlagenbau Gesellschaft mbH based in Leipzig / Germany was established as subsidiary of Edeleanu GmbH in 1991 and refers to tradition and experience in plant engineering and technologies of more than one hundred years. As partner of the refinery, petrochemical and chemical industry EDL offers the full range of services for process plant engineering and assists its customers with advanced and new climate-friendly technologies in sustainably operating their productions. Customers benefit from EDL's wide experience gained from hundreds of successfully executed greenfield and brownfield projects. With more than 50 major modernization projects EDL is deemed one of the leading revamp specialists. Since 2003 EDL has been part of the Austrian Pörner Group.

The Pörner Group is the independent European company for process plant engineering. As complete plant engineering provider the Pörner Group offers the full range of engineering services: from project studies and authority engineering to process engineering, basic and detail engineering as well as procurement to construction management and commissioning of the plant.

The Pörner Group offers advanced technologies for residue processing including: bitumen, solvent deasphalting (SDA PLUS), extraction (EXTRACTION) dewaxing & deoiling (DEWAXING / DEOILING), spray micronization (MICRONIZATION) as well as BTX aromatics extraction (AROMEX) and formaldehyde and derivates. Furthermore are included climate-friendly technologies, sich as used oil re-refining, depolymerisation of plastic waste, Power-to-X (PtX) and Fisch-Tropsch processes for PtX. With the Biturox® process, the Pörner Group is a global leader in bitumen production in refineries and offers the Pörner Bitumen Packing System, an innovative solution for the economical transportation of bitumen in cold state.

Since its founding in 1972 the Pörner Group has implemented over 2,000 projects in the field of refinery, petrochemical, chemical and pharmaceutical as well as energy and environmental technology. Headquartered in Vienna, Austria the company is represented at seven other locations in Germany, Romania, Ukraine and Russia.

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