ICAO STOCKTAKING 2021

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~2.000 employees

Destinations in 42 countrys

5th largest airport in Germany

17.3 mio Passengers

155.215 aircraft movements (2019)

51% City of Hamburg

49 % AviAlliance

The world‘s oldest commercial airport still located at it‘s place of origin

Sustainable fuels for aviation

Projects carried out so far

Scheduled test flights (HAM – FRA) using biofuels for aviation (burnFAIR):

Usage of a 50 % blend of conventional jet fuel and biosynthetic kerosen

Test in one specific aircraft

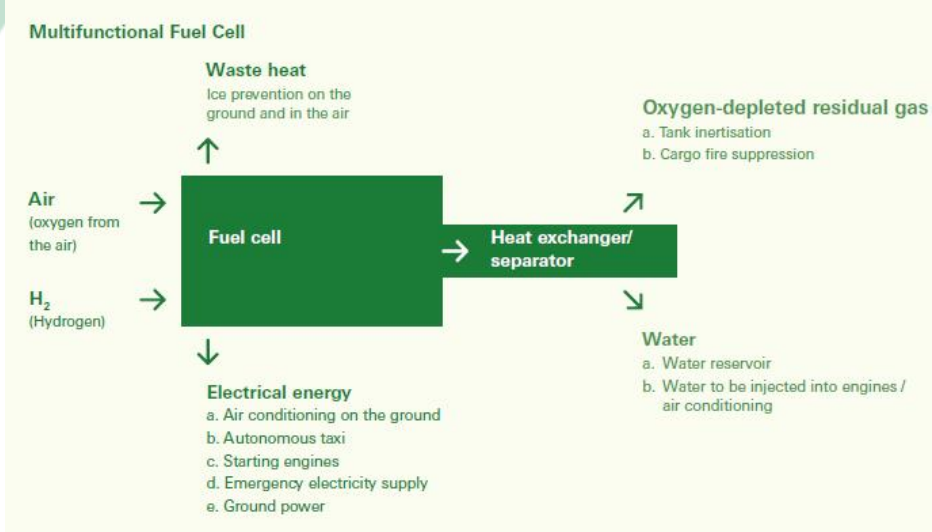
Six month trial in 2011

Multifunctional Fuel cell:

Development of a concept to use hydrogen for

APU

GPU



A sustainable fuel for aviation

Current Project KEROSyN and 5in5

Project partners (i.a.):

- Refinery Heide
- Lufthansa AG
- University Bremen / TU Freiberg
- DLR - Institute for energy system networks

Contents:

- production of green H_2 by aeolic power and electrolysis
- utilisation of CO_2 from concrete production
- prove for technological feasibility on larger scale
- Long-term perspective: 150.000 t/a PtL- jet fuel

Milestones:

- Start in 2019: LOI „5in5“ signed by Refinery Heide (producer), Hamburg Airport(distributor) and Lufthansa (user)

- detailed development / certification of „Green MeOH“ production pathway
- 20.000 t synthetic jet fuel (jet A 1) for HAM in 5 years („**5in5**“)

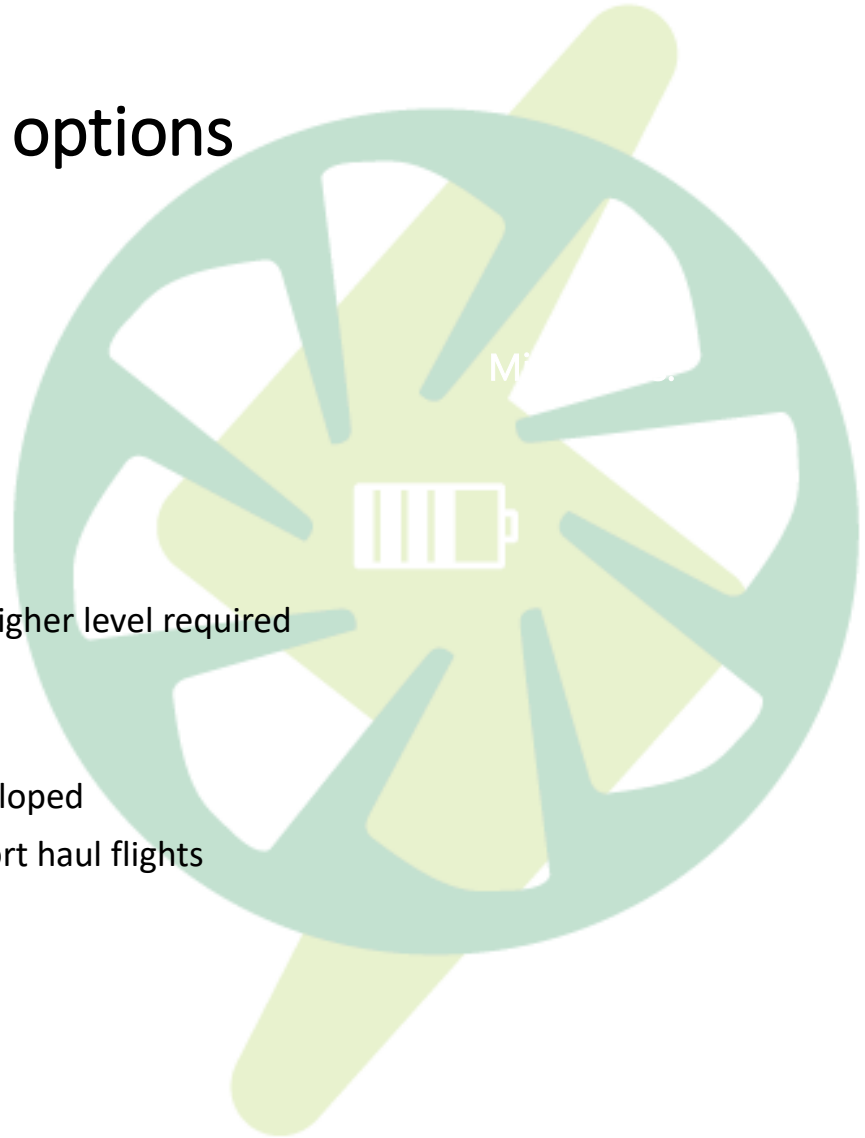
Future Developments and challenges

Synthetic fuels

- HAM: aim for 150.000 t of KEROSyN needs a 700 MW electrolyser + 1 mio. t of CO_2
- Government decided on a 2 % PtL quota for German aviation by 2030. This equals to an amount of 240.000 t/a
- High demand for Powerfuels from industry, shipping, freight forwarding, rail,…
- Summed curtailment of electricity volume in Schleswig-Holstein: 3.750 GWh (2019, on- and offshore aeolic power)
- German gross electricity consumption will increase by 26 % by 2030: significant expansion in production and grid capacity is indispensable
- Import of „green raw powerfuels / crude oil substitute“ as way forward

Other Aircraft fuel options

Hydrogen and electricity



Hydrogen:

- Cryogenic hydrogen only option
- Aircraft technology not available
- Very long term option for aviation
- Research and development on a higher level required

Electricity:

- Aircraft technology currently developed
- only smaller aircraft types and short haul flights
- high electricity demand at airport

Requirements for the airport

- Limited potential for spatial development of the airport
- All new storage facilities at the airport have to adapt to that
- Fuel supply to the airport by lorries
- Installation of megachargers for aircraft faces also limitation of available space
- Electricity supply to the airport to be improved/ modernised to cope with higher future demands
- On site electricity production

Thank You

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