The Impact of Hydrogen Aviation on Airport Masterplanning

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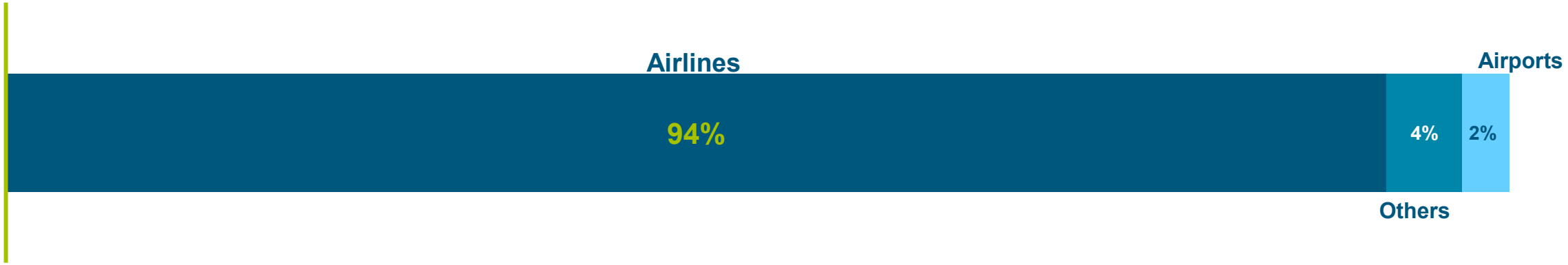
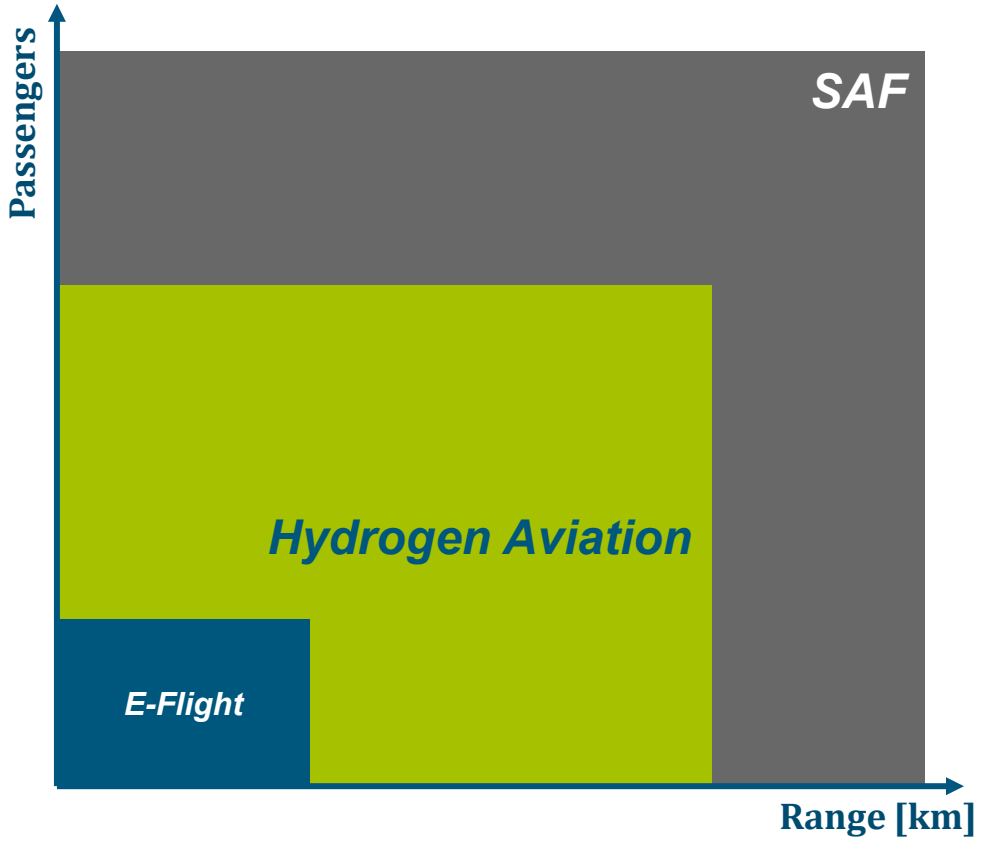
In the aviation sector, most CO_2 emissions are generated by aircraft



Tripartite Energy Mix to solve 94% of CO_2 Emissions in Aviation Today:

Future Energy Mix – Complementary Use Cases



Hydrogen at a glance

300 % Energy Density of Kerosene (J/kg)
25 % Volumetric Energy density (J/m^3)

CO_2 Free

H_2 Flights could take off as early as 2025

Technology Outlook – Hydrogen Aviation

News

Zeroavia plans hydrogen-electric flights between London and Rotterdam in 2024

29 Oct 2021 by Mark Caswell

AIRBUS ZEROE: THE FIRST EMISSION-FREE PASSENGER AIRCRAFT

The Airbus ZEROe, the first emissions-free passenger aircraft, chould make flying climate-neutral from 2035.

Written by Alex Lisetz
2 min read · Published on 14.12.2021 · 17:13 UTC+1

Save ☆

Air Liquide and Groupe ADP Announce Their Ambition to Create the First Joint Venture to Facilitate the Development of Hydrogen Infrastructure at Airports

June 15, 2022 02:48 AM Eastern Daylight Time

PARIS--(BUSINESS WIRE)--Regulatory News:

With this ambition of creating the first engineering joint venture dedicated to accompanying airports in their project to integrate hydrogen in their infrastructure, Air Liquide (Paris:AI) and Groupe ADP are strengthening their collaboration. This announcement follows a memorandum of understanding signed in 2021 to carry out feasibility studies to accompany the arrival of hydrogen-powered aircraft. This partnership project demonstrates the Groups' shared ambitior to act now to pave the way for decarbonized air transport worldwide.

The purpose of this 50:50 joint venture will be to provide airports in France and across the world with the engineering and services they will need in their transition to hydrogen. As the first hydrogen-powered commercial aircrafts are expected by 2035, airports need to start reconsidering their infrastructure as of today. In particular, they must look at how liquid hydrogen will be supplied and how it can also serve other ground mobility usages, notably heavy duty mobility or light ground support equipment.

Christchurch-based Fabrum joins team pushing aviation towards hydrogen flight

LINE OF DEFENCE MAGAZINE - SPRING 2022

September 27, 2022 Aerospace

Airbus, Air Liquide and VINCI Airports announce a partnership to promote the use of hydrogen and accelerate the decarbonization of the aviation sector

Airbus, Air Liquide and VINCI Airports, three major players in the aviation, hydrogen and airport industries, are working together to promote the use of hydrogen at airports and build the European airport network to accommodate future hydrogen aircrafts. The airport of Lyon-Saint Exupéry (France) will host the first installations as early as 2023. This partnership reflects the three groups' shared ambition to combine their respective expertise to support the decarbonization of air travel.

Rolls-Royce Edges Closer To Hydrogen Engine Ground Test

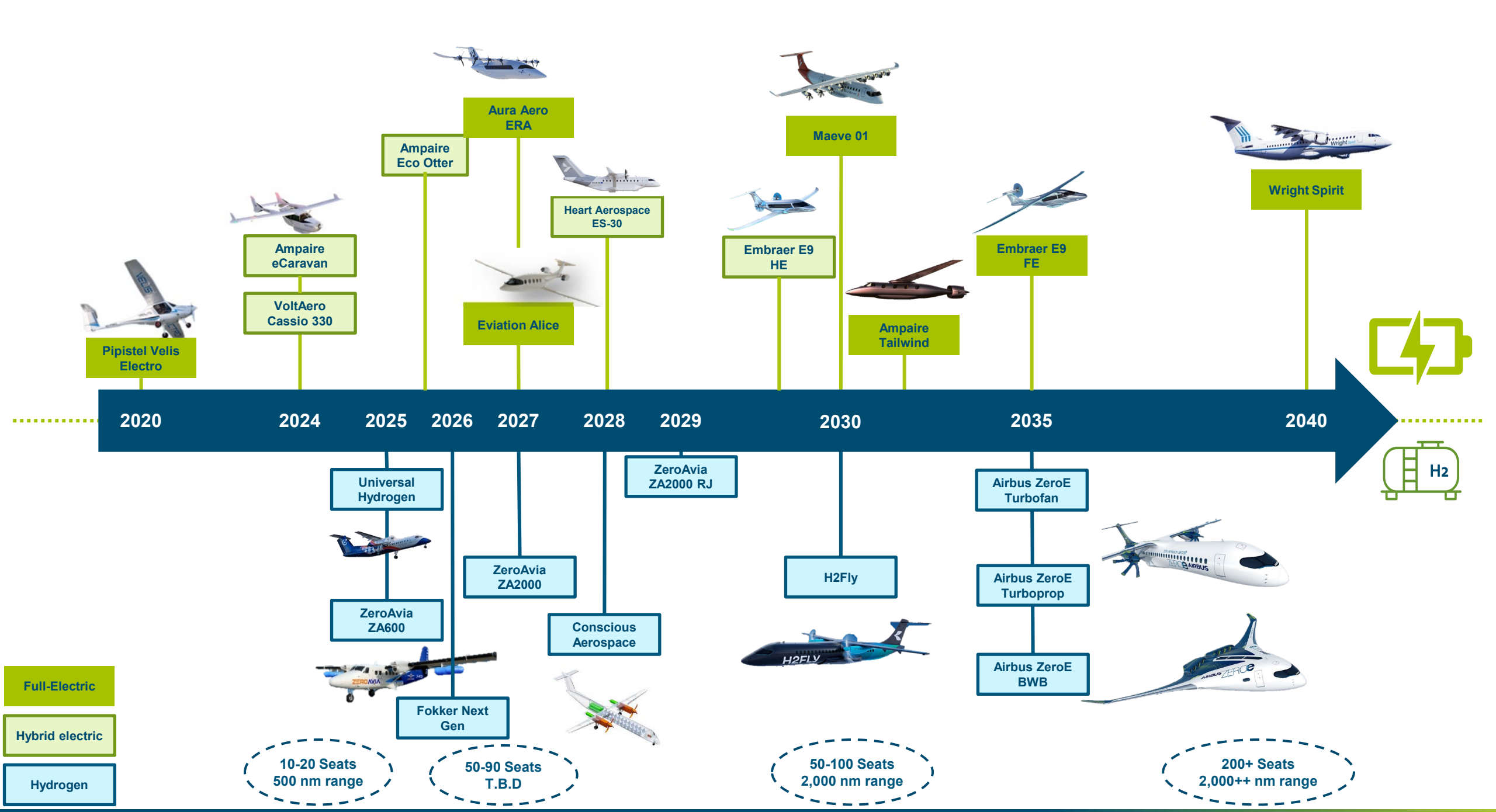
Rolls-Royce has been preparing a comprehensive series of rig and engine tests to show that hydrogen fuel can effectively fly aircraft.

BY SUMIT SINGH PUBLISHED OCT 01, 2022

Groningen Airport Eelde eerste Hydrogen Valley Airport van Europa

Geplaatst op: 31 mrt 2021

Groningen Airport Eelde en New Energy Coalition gaan samenwerken. De partijen gaan intensief samenwerken om de luchthaven door middel van waterstoftoepassingen te verduurzamen. Het is de ambitie van Groningen Airport Eelde om de duurzaamste luchthaven van Europa te worden. Deze samenwerking past bij de waterstof-doelstellingen van de regio Noord-Nederland. De luchthaven is midden in de eerste Hydrogen Valley van Europa gelegen. Groningen Airport Eelde is met deze samenwerking de eerste Hydrogen Valley Airport.


Pipistel Velis Electro
Ampaire eCaravan
VoltAero Cassio 330
Ampaire Eco Otter
Aura Aero ERA
Eviation Alice
Heart Aerospace ES-30
Embraer E9 HE
Maeve 01
Ampaire Tailwind
Embraer E9 FE
Wright Spirit
2020
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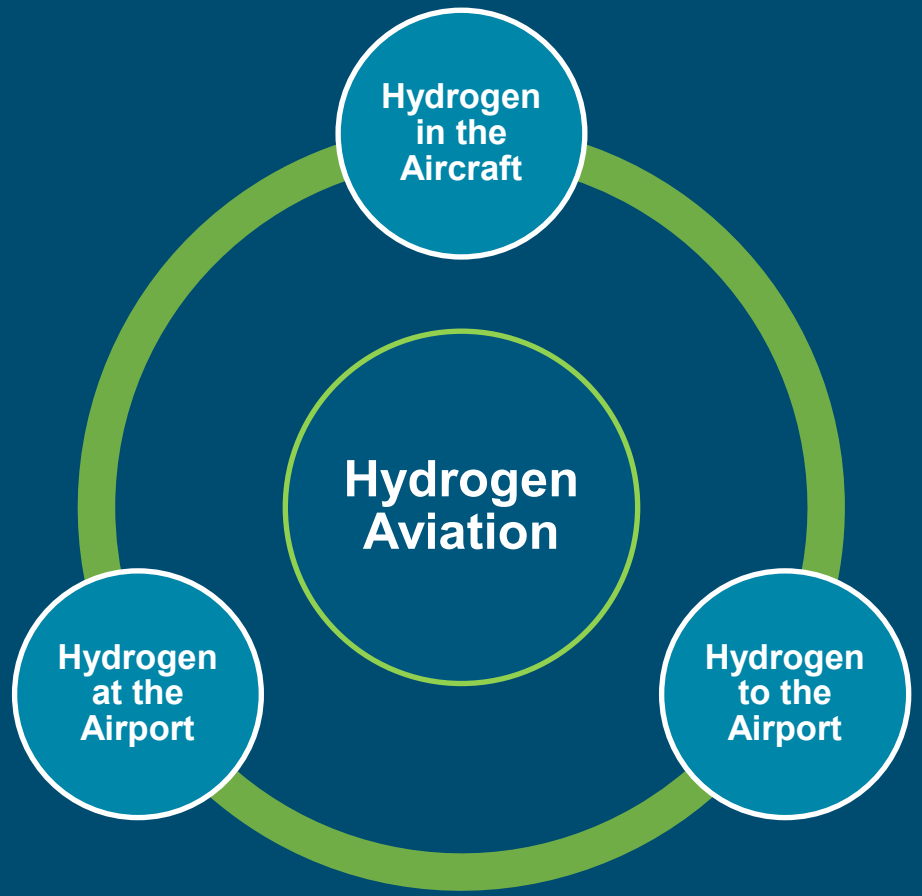
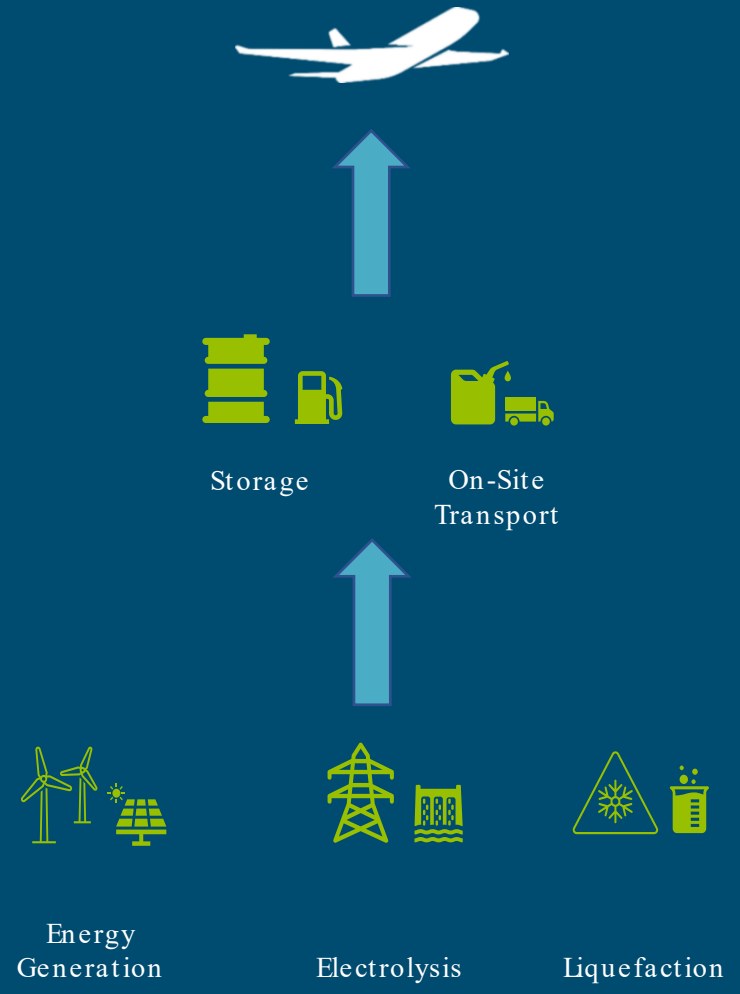
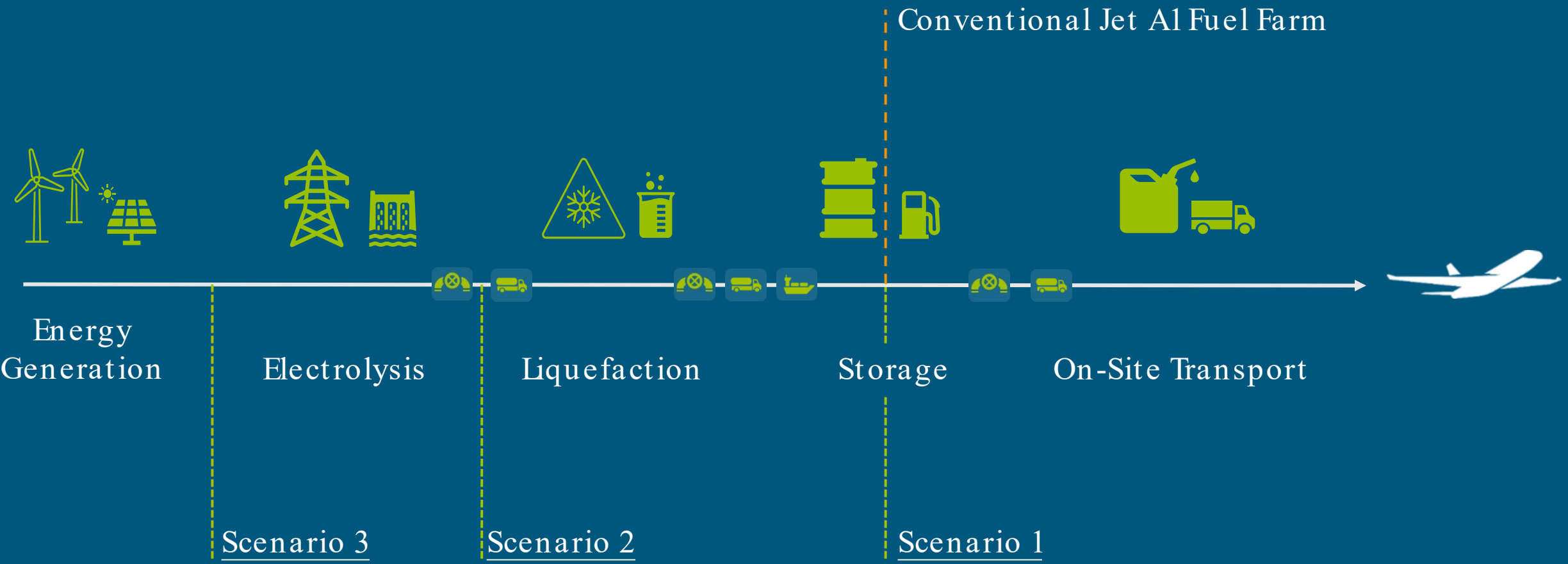
Universal Hydrogen
ZeroAvia ZA600
Fokker Next Gen
ZeroAvia ZA2000
Conscious Aerospace
ZeroAvia ZA2000 RJ
H2Fly
Airbus ZeroE Turbofan
Airbus ZeroE Turboprop
Airbus ZeroE BWB
H2
Full-Electric
Hybrid electric
Hydrogen
10-20 Seats 500 nm range
50-90 Seats T.B.D
50-100 Seats 2,000 nm range
200+ Seats 2,000++ nm range

Hydrogen Aviation – 3 Interlinked themes





Hydrogen Supply Chains



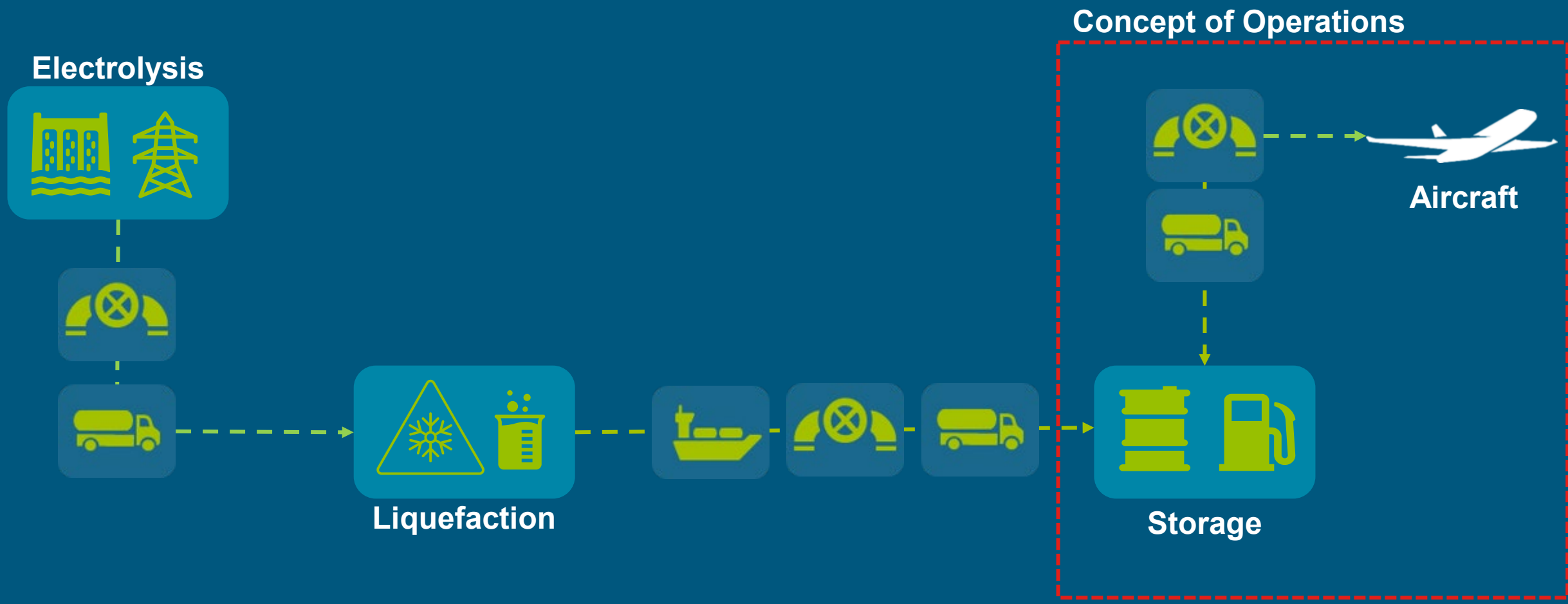
Supply Chain Decision Drivers

Decision Drivers

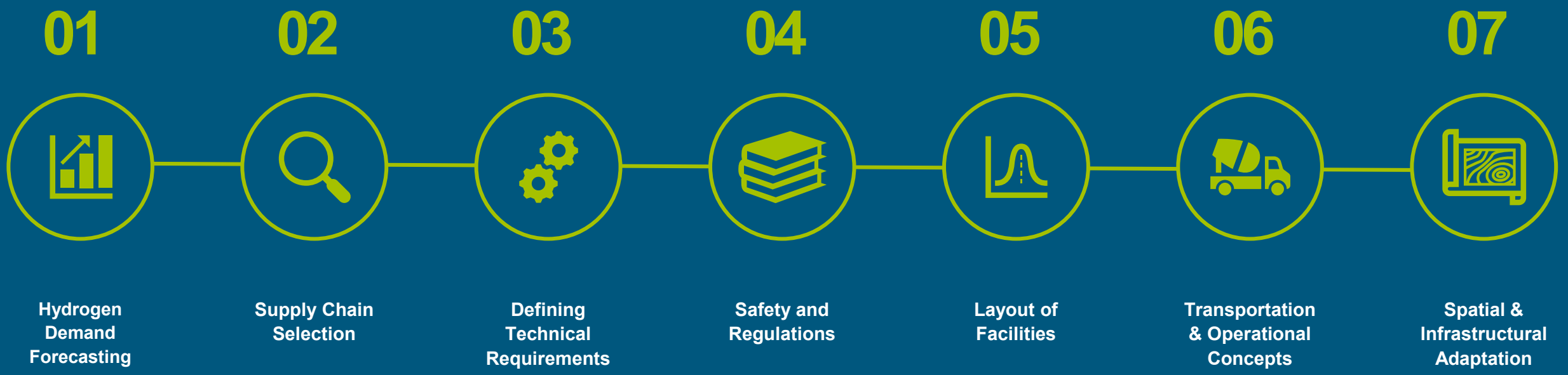
- Spatial Footprint
- Hydrogen Requirements
- Risk Profiles
- Operational Feasibility
- CAPEX & OPEX

Transportation, Storage & Operations

Transportation, Storage & Operations



Assessing the impact of Hydrogen Aviation on an Airport



Planning for Hydrogen Aviation requires close collaboration

Summary

- Aircraft Driven Demand
- Concept of Operations
- Space Constraints
- Scale Up Limits
- Risk Profile
- Commercial Feasibility

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