



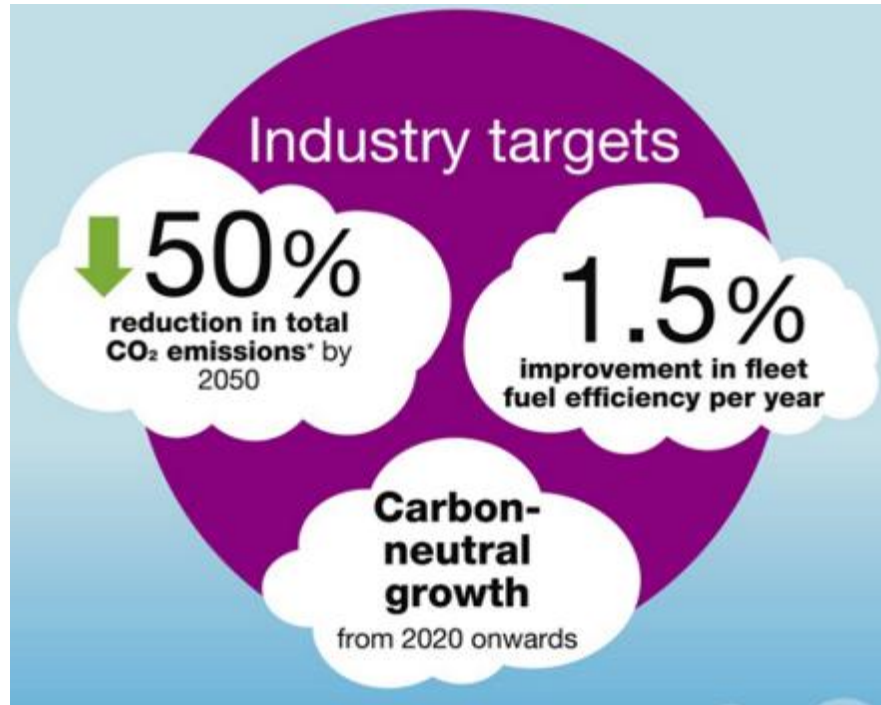
**TOGETHER
WIN THE FUTURE**

凝心聚力 共创未来

How to meet the challenges of carbon neutrality in the world of aviation? Focus on Hydrogen

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General Manager
04/11/2020

AIRBUS



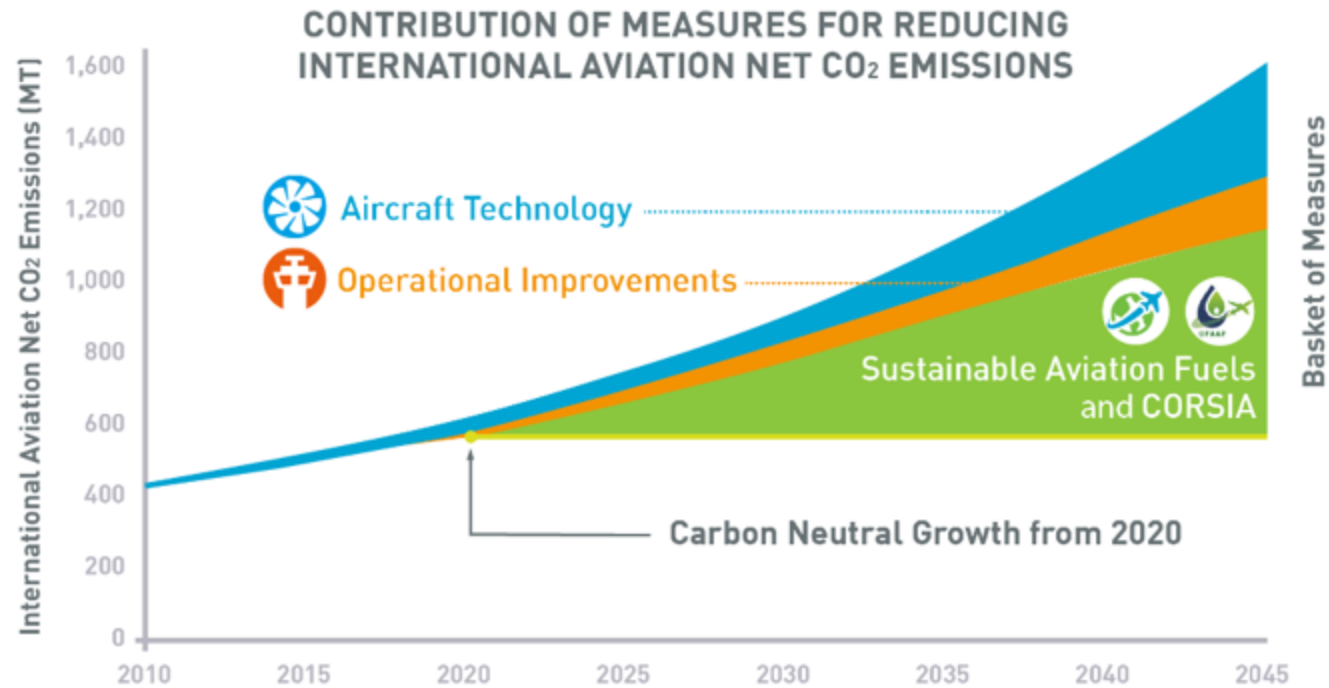
Aviation industry targets (2010)



President Xi statement at the UN (2020)

<https://www.airbus.com/company/sustainability/environment/decarbonisation.html>

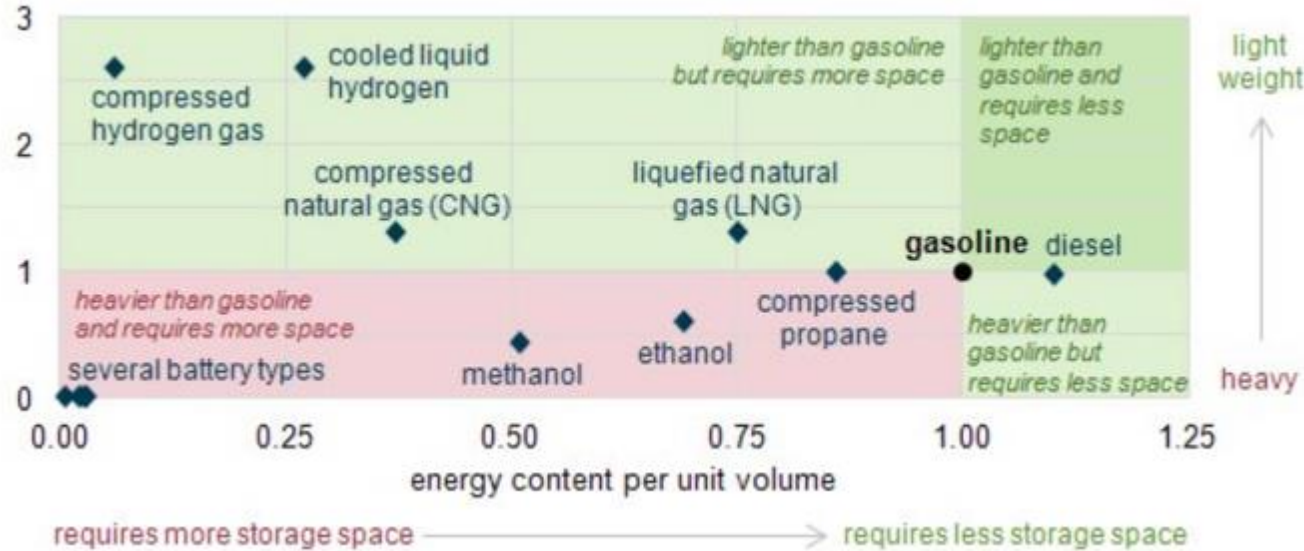
How to meet the ambitions?



How to reduce emissions:

- Newer aircrafts
- Air Traffic control
- CO₂ capture
- Sustainable Aviation Fuels
- New energy (e.g. H₂)

Why hydrogen?



Aviation key constraint (in particular for long-haul flights) is energy density

- Batteries are too far technology wise
- H₂ is one of the only carbon free alternatives (it produces water when burned)

A new H₂ economy is being set-up across the world and aviation could become a key customer

- Key challenge will be the production & supply of enough green H₂ (produced without CO₂ creation)

Ambition: Develop the world's 1st zero-emission commercial aircraft by 2035

Introducing Airbus **ZEROe**

Turboprop		 <100 Passengers	 1,000+nm Range
		 Hydrogen Hybrid Turboprop Engines (x.2)	 Liquid Hydrogen Storage & Distribution System
Blended-Wing Body		 <200 Passengers	 2,000+nm Range
Turbofan		 Hydrogen Hybrid Turbofan Engines (x.2)	 Liquid Hydrogen Storage & Distribution System

AIRBUS

Airbus reveals new zero-emission concept aircraft

China is developing more and more its H2 economy in particular for fuel cells and infrastructure

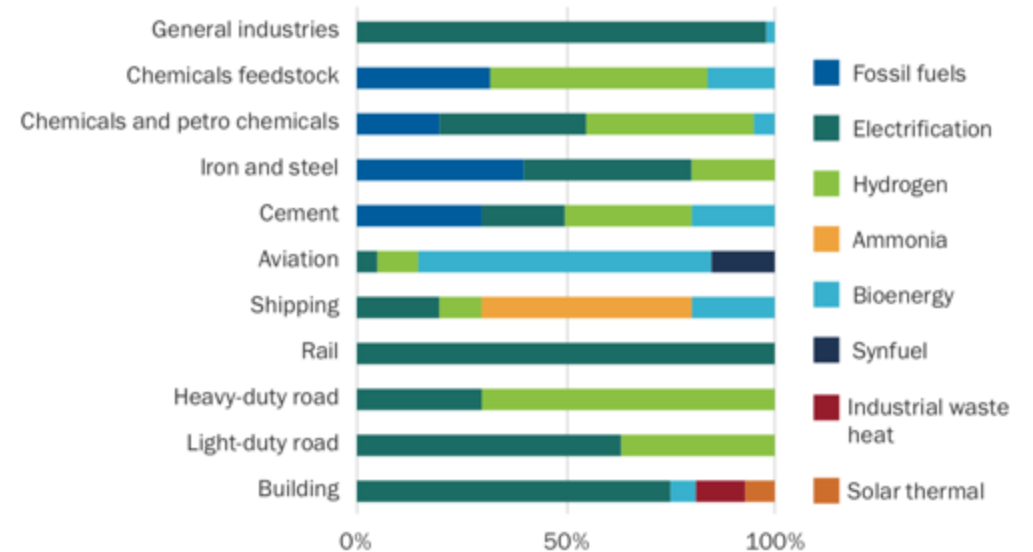
Sino-Japanese hydrogen energy industrial park launched in Daxing

Updated: 2020-08-10



How to achieve China carbon neutrality in 2050?

Final energy consumption by sectors and by energy carriers



www.energy-transitions.org